Non-Continuous Technical Associate's Degree in Logistics and Automotive Parts Supply

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	The Application of ICT	2	32	-	32	
	Total	8	248	-	248	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	Statistics and Probability	3	48	-	48	
	Total	6	96	-	96	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Planning, of Inventory Control, and Orders	3	48	-	48	Statistics and Probability	
2	Time and Work Study	2	32	-	32	-	
3	Principles of Logistics and Supply Chain	2	32	-	32	-	
4	Production Planning and Control	3	48	-	48	-	
5	Project Planning and Control	3	48	-	48	Time and Motion Study	
6	Information Technology in Production Planning and Control	2	16	48	64		
7	Logistics Equipment and Related Driving Laws	2	32	-	32		
8	Planning, Supply Tracking, and Tracking in Supply Chain	3	48	-	48	Principles of Logistics and Supply Chain	
9	Intra-Factory Transfer Methods	2	32		32	Principles of Logistics and Supply Chain	
	Total	22	336	48	384		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Packing and Unpacking Goods	3	48	-	48	Principles of Logistics and Supply Chain	
2	The Application of Computer in Automation	2	16	48	64	Information Technology in Production Planning and Control	
3	Just In-time Manufacturing (JIT) - Kanban and Synchron	3	48	-	48	Planning of Inventory Control and Orders	
4	English for Specific Purpose	2	32	-	32	General English	
5	Tracking Systems for Manufactured Parts and Products	3	48	-	48	Planning, Supply Tracking, and Tracking in Supply Chain	
6	Information Technology in Logistics Processes	2	16	48	64	Information Technology in Production Planning and Control	
7	Warehouse Design and Principles of Warehousing	3	48	-	48	Planning, Supply Tracking, and Tracking in Supply Chain	
	Total	18	256	96	352		

Table of Workplace Training Courses

No.	Courses	No. of Credits	Hours	Implementation Time
1	Job Survey	1	32	From the outset of the course (From the registration time till the end of the 1st semester)
2	Internship 1	2	240	At the end of semester 2
3	Internship 2	2	240	At the end of the semester

Non-Continuous Technical Associate's Degree in Civil Engineering (Building Maintenance and Restoration)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	

2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	The Application of ICT	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Mathematics and Accounting	3	48	-	-	
2	Building Materials 1	2	32	_	-	
3	Technical Drawing and Construction Drawing	2	-	96	-	
	Total	7	80	96	176	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Methods of Measurement, Documentation, and Presenting Architectural Drawings	3	16	96	112		
2	Statics and Strength of Materials	3	48	_	48	Mathematics and Accounting	
3	An Introduction to the Application of Software	2	16	48	64	Technical Drawing, and Construction Drawing	
4	Building Materials 2	2	32	_	32	Building Materials 1	
5	English for Specific Purposes	2	32	_	32	General English	
6	Electrical Installations	2	32	_	32	Methods of Measurment , Documentation, and Presenting Architectural Drawings	
7	Mechanical Installations	2	32	_	32	Methods of Measurment , Documentation, and Presenting Architectural Drawings	
8	Building Elements and Details	3	48	-	48	Building Materials 2 Electrical Installations	
	Total	19	256	144	400		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Building Workshop	2	16	48	64	Building Materials 2	
2	An Introduction to General Pathology, Accidents, and Consolidation	3	32	48	80	Strength of Material	
3	Quality Surveying and Estimate	2	32	-	32	Structural Elements and Details	
4	Apartment Ownership Rules and Regulations - Types of Contracts and Building Permits	2	32	_	32	The last semester	
5	Planning Maintenance and Project Control	2	16	48	64	Structural Elements and Details	
6	National Regulations of Building and Energy Optimization and Regulations of Urban Infrastructure	2	16	48	64		
7	Mechanical Installations Workshop	2	16	48	64	Mechanical Installations	
8	Electrical Installations Workshop	2	16	48	64	Electrical Installations	
9	Review and Analysis of Structures and Constructions	2	32	-	32	Structural Elements and Details	
10	Landscaping and Green Space	2	16	48	64	Methods of Measurment , Documentation, and Presenting Architectural Drawings	
	Total	21	240	336	576		

Non-Continuous Technical Associate's Degree in Industrial Drawing

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Materials Science	2	32	-	32	
2	Building Workshop	2	16	64	80	
3	General Mathematics	3	48	-	48	
	Total	**7**	**96**	**64**	**160**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Measurement and Laboratory	2	16	48	64		
2	English for Specific Purposes	2	32	-	32		
3	Standards	3	48	-	48		
4	Manufacturing Methods	2	32	-	32		
5	Artistic Graphics	3	32	48	80		
6	Industrial Mechanics	3	48	-	48	General Mathematics	
	Total	**15**	**208**	**96**	**304**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Drawing	3	32	64	96		
2	Detailed Drawing	3	32	64	96	General Drawing	
3	Assembly Drawing	3	32	64	96	Component Drawing	
4	Executive Drawing	2	16	64	80	Combined Drawing	
5	2D Computer Drawing	2	16	48	64	-	
6	3D Computer Drawing	2	16	48	64	2D Computer Drawing	
7	Drawing Geometry	2	16	64	80	-	
8	Collision Geometry	2	16	64	80	Drawing Geometry	
9	Jigs and Fixture Design	2	16	48	64	Combined Drawing	
10	Metal Molds	2	16	48	64		
11	Plastics Molds	2	16	48	64	Combined Drawing	
	Total	25	224	624	848		

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Report Making	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Technical Drawing	1	-	64	64	
3	Statistics and Probability	2	32	-	32	
4	Light Physics	2	32	-	32	
	Total	**7**	**96**	**64**	**160**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Surveying 1	2	32	-	32	Technical Drawing	
2	Surveying Operations and Computations Workshop 1	2	-	96	96	Surveying 1	
3	Theory of Errors	2	32	-	32		
4	Diagnosis, Troubleshooting, and Maintenance of Surveying Equipment	2	-	96	96		
5	Principles of Road Construction	2	32	-	32	Surveying 1	
6	An Introdution to Bridges and Technical Buildings	2	32	-	32	Principles of Road Construction	
7	Drawing and Reading Roads and Buildings Maps	2	16	32	48	Surveying 1	
8	Photogrammetry	2	32	-	32	Surveying 1	
9	Photogrammetry Operations	1	-	48	48	Photogrammetry	
10	The Application of Computer in Surveying	1	-	64	64	Surveying 1 Principles of Road Construction	

11	First Aid	1	-	48	48		
	Total	19					

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32	General English	
2	Surveying 2	2	32	-	32	Surveying 1	
3	Surveying Operations and Computations Workshop 2	2	-	96	96	Surveying 2	
4	Geodesy 1	2	32	-	32	-	Surveying 2
5	Geodesy Operations 1	1	-	64	64	-	Geodesy 1
6	Astronomy and GPS Satellite Geodesy	3	32	64	64	Geodesy 1	
7	Road and Construction Surveying and Controlling Construction Procedure	3	32	48	80		Surveying and Computations Workshop 2
8	Underground Surveying and Operations	2	16	64	80		Road and Construction Surveying, and Controlling Construction Procedure
9	Automation in Surveying	2	16	48	64	Surveying 1	
10	Computations and Estimation of Earthworks	2	16	48	64	Principles of Road Construction	
	Total	21	208	416	624		

Non-Continuous Technical Associate's Degree in Mechanics (Mechanical Systems Assembling)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Quality Control / Report Making	2	32	-	32	
2	Professional Ethics / Principles of Supervision	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	The Application of ICT	2	32	-	32	
	Total	8	128	128	248	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	General Physics	2	32	-	32	
3	General Chemistry	2	32	-	32	
4	Statistics	2	32	-	32	General Mathematics
5	General Physics Laboratory	1	-	48	48	
	Total	10	144	48	192	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	General Physics General Mathematics	
2	Strength of Materials	2	32	-	32	Statics	
3	Drawing and CAD Principles	2	-	128	128	-	
4	English for Specific Purposes	2	32	-	32	General English	
5	Materials Science	2	32	-	32	Strength of Materials	
6	Machine Components	2	32	-	32		
7	Hydraulics and Pneumatics	2	32	-	32		
8	Hydraulics and Pneumatics Workshop	1	-	64	64		Hydraulics and Pneumatics
	Total	**15**	**192**	**192**	**384**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Manufacturing Engineering	2	32	-	32		
2	Timing Methods and Line Balances	2	32	-	32		
3	Welding Workshop	1	-	64	64		
4	Assembling Workshop	1	-	64	64	Principles of Assembly 1	
5	Principles of Metal Forming	2	32	-	32		
6	Metal Forming Workshop	1	-	64	64		Principles of Metal Forming
7	Principles of Assembly 1	2	32	-	32		

8	Principles of Assembly 2	2	32	-	32	Principles of Assembly 1	
9	Planning Production and Materials	2	16	32	48		
10	Measurment Systems	2	32	-	32		
11	Measurment Systems Workshop	1	-	64	64		Measurment Systems
12	Robotics and Automation of Production Lines	2	32	-	32		
13	Machinery and Equipment of Assembling Process	2	16	64	80		
	Total	22	256	352	608		

Non-Continuous Technical Associate's Degree in Energy Audit (Industry)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Thermal Physics	2	32	-	32	
3	Physics of Electricity and Magnetism	2	32	-	32	
4	Statistics	2	16	32	48	General Mathematics
5	Accounting	2	16	32	48	
	Total	10	128	64	192	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Thermodynamics	2	32	-	32		
2	Fluid Mechanics	2	32	-	32	Thermodynamics	
3	Heat Transfer	2	32	-	32	Thermodynamics	

4	Fuel and Combustion	2	32	-	32	Heat Transfer	
5	Boilers and Steam Generators	2	32	-	32	Heat Transfer	
6	Boiler and Steam Generators Workshop	1	-	48	48		
7	Project Control	2	16	32	48	General Economics	
8	General Economics	2	32	-	32		
	Total	16	224	80	304		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Systems of Energy Generation and Conversion	3	48	-	48	Heat Transfer - Fluid Mechanics	
2	Energy Software in Industry	2	16	32	48	Heat Transfer	
3	Specialized Workshop on Energy Audit of Industrial Units	2	-	64	64	Heat Transfer - Fluid Mechanics	
4	English for Specific Purposes	2	32	-	32	General English	
5	Energy Audit Equipment	2	32	-	32	Heat Transfer	
6	Energy Audit Equipment Workshop	1	-	48	48	-	
7	Specialized Project	3	16	96	112	After passing 54 No. of Credits s	
8	Turbo Machinery	2	32	-	32	Heat Transfer	
9	Monitoring and Targeting Energy	3	32	32	64	Statistics	
10	A Workshop on Pollution Control Equipment of Industrial Units	1	-	48	48		
	Total	21	192	320	512		

Non-Continuous Technical Associate's Degree in Energy Audit (Buildings)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Thermal Physics	2	32	-	32	
3	Physics of Electricity and Magnetism	2	32	-	32	
4	Statistics	2	16	32	48	General Mathematics
5	Accounting	2	16	32	48	
	Total	10	128	64	192	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Thermodynamics	2	32	-	32		
2	Fluid Mechanics	2	32	-	32	Thermodynamics	
3	Heat Transfer	3	48	-	48	Thermodynamics	
4	Fuel and Combustion	2	32	-	32	Heat Transfer	
5	Boilers and Steam Generators	1	16	-	16	Heat Transfer	
6	Boiler and Steam Generators Workshop	1	-	48	48		Boilers and Steam Generators
7	Project Control	2	16	32	48	General Economics	
8	General Economics	2	32	-	32		
	Total	16	224	80	304		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Underfloor Heating	2	32	-	32	Air Conditioning	
2	Introduction to Energy Optimization Policies and the Topic 19 on Buildings	2	32	-	32	Heat Transfer	
3	Building Energy Software	2	16	32	48	Air Conditioning	
4	Air Conditioning and Central Heating	2	32	-	32	Heat Transfer	
5	A Workshop on Air Conditioning and Central Heating	1	-	48	48		Air Conditioning and Central Heating
6	Insulation Workshop	1	-	48	48	Heat Transfer	

7	A Workshop on UPVC Windows and Double Glazing Standards	1	-	48	48	Heat Transfer	
8	English for Specific Purposes	2	32	-	32	General English	
9	Renewable Energies	2	32	-	32	Thermodynamics	
10	Specialized Project	3	16	96	112	After 54 No. of Credits s	
11	Energy Audit Equipment and Standard in Buildings	3	16	64	80	Heat Transfer	
	Total	**21**	**208**	**336**	**544**		

Non-Continuous Technical Associate's Degree in Municipal Engineering

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Principles of Supervision / Entrepreneurship	2	32	-	32	
3	Professional Ethics / The Application of ICT	2	32	-	32	
4	Business Skills and Rules / Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Mathematics and Principles of Statistics	3	48	-	48	
2	The Application of Computer	2	16	32	48	
	Total	5	64	32	96	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Demography	2	32	-	32		
2	Environment and Environmental Health	2	32	-	32		
3	Computer The Application in Urban Planning	2	16	32	48	The Application of Computer	

4	Principles of Architecture	2	32	-	32		
5	Urban and Regional Designing	2	32	-	32	Urban Geography	
6	The History of Urban Development	2	32	-	32		
7	General Economics	2	32	-	32		
8	Technical Drawing and Surveying	2	16	48	64		
9	The Application of Surveying in Municipal Engineering	3	32	48	80	Mathematics and Principles of Statistics	
10	Urban Geography	2	32	-	32		
	Total	21	288	128	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Urban Traffic	2	16	32	48		
2	English for Specific Purposes	2	16	32	48		
3	Urban Installations	2	16	32	48		
4	Civil Rights	2	32	-	32		
5	Urban and Regional Planning	2	32	-	32	Urban Geography	
6	Urban and Regional Designing Workshop	2	-	96	96	Urban and Regional Planning	
7	Urban Planning Workshop	2	-	96	96	Urban and Regional Planning	
8	Architectural Design	3	32	32	64	Technical Drawing - Urban and Regional Design	
9	Principles of Green Space Designing	2	16	32	48	Environment and Environmental Health	
10	Disaster Management	2	16	32	48	Technical Drawing Urban and Regional Design	
	Total	21	176	384	560		

Non-Continuous Technical Associate's Degree in Mechanics (Manufacture of Forging Molds)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	

2	The Application of ICT/ Business Laws and Business Information Technology	2	32	-	32	
3	Entrepreneurship / Principles of Supervision	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Mechanical Physics	2	32	-	32	
3	Industrial Mechanics	3	48	-	48	Mechanical Physics
4	Materials Science	2	32	-	32	
	Total	10	144	32	176	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Drawing 1	2	16	32	48		
2	Industrial Drawing 2	2	16	32	48	Industrial Drawing 1	
3	Computer-Assisted Drawing	2	16	32	48		Industrial Drawing 2
4	General Mechanics Technology	1	16	-	16		
5	General Mechanics Workshop	1	-	48	48		General Mechanics Technology
6	Welding Technology	1	16	-	16		
7	Welding Workshop	1	-	48	48		Welding Technology
8	Casting Technology	1	16	-	16		
9	Casting Workshop	1	-	48	48		Casting Technology
10	Machine Tools Technology	1	16	-	16	General Mechanics Workshop	
11	Machine Tools Workshop	1	-	64	64		Machine Tools Technology
12	CNC Machine Tools Technology	1	16	-	16	Machine Tools Workshop	

13	CNC Machine Tools Workshop	1	-	48	48		CNC Machine Tools Technology
14	Instrumentation and Laboratory	2	16	48	64		
	Total	**20**	**144**	**640**	**784**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Hydraulics, Pneumatics, and Laboratory	2	16	32	48		
2	English for Specific Purposes	2	32	-	32	General English	
3	An Introduction to Metal Molds	2	32	-	32	Industrial Drawing 2	
4	Principles of Designing and Drawing Jigs and Fixture	2	16	48	64	Industrial Drawing 2	
5	Heat Treatment and Laboratory	2	16	32	48	Materials Science	
6	Designing and Drawing Forging Molds 1	2	16	48	64	Industrial Drawing 2	
7	Forging Molds Manufacture Workshop 1	1	-	64	64	Machine Tools Workshop	Design and Drawing of Forging Molds 1
8	Designing and Drawing Forgings Molds 2	2	16	48	64	Designing and Drawing of Forging Molds 1	
9	Forging Molds Manufacture Workshop 2	1	-	64	64	Forging Molds Workshop 1	Designing and Drawing Forgings Molds 2
10	Computer-Assisted Drawing Forging Molds	2	16	48	64	Computer-assisted Drawing	Designing and Drawing Forging Molds 2
11	Press Machines, Testing, and Repairing Forging Molds	2	16	32	48	Forging Molds 1	Designing and Drawing Forging Molds 2
	Total	22	176	656	832		

Non-Continuous Technical Associate's Degree in Mechanics (Manufacture of Metal Molds)

Table of Joint Skill-Based Courses

#	Course Title		Hours	

		No. of Credits	Theoretical	Practical	Total	Prerequisite(s)
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT/ Business Laws and Business Information Technology	2	32	-	32	
3	Entrepreneurship / Principles of Supervision	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Mechanical Physics	2	32	-	32	
3	Industrial Mechanics	3	48	-	48	Mechanical Physics
4	Materials Science	3	48	-	48	
	Total	5	64	32	96	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Drawing 1	2	16	32	48		
2	Industrial Drawing 2	2	16	32	48	Industrial Drawing 1	
3	Computer-assisted Drawing	2	16	32	48		Industrial Drawing 2
4	General Mechanics Technology	1	16	-	16		
5	General Mechanics Workshop	1	-	48	48		General Mechanics Technology
6	Welding Technology	1	16	-	16		
7	Welding Workshop	1	-	48	48		Welding Technology
8	Casting Technology	1	16	-	16		
9	Casting Workshop	1	-	48	48		Casting Technology
10	Machine Tools Technology	1	16	-	16	General Mechanics Workshop	
11	Machine Tools Workshop	1	-	64	64		Machine Tools Technology

12	CNC Machine Tools Technology	1	16	-	16	Machine Tools Workshop	
13	CNC Machine Tools Workshop	1	-	48	48		CNC Machine Tools Technology
14	Instrumentation and Laboratory	2	16	48	64		
	Total	**20**	**144**	**640**	**784**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Hydraulics, Pneumatics, and Laboratory	2	16	32	48		
2	English for Specific Purposes	2	32	-	32	General English	
3	Principles of Designing and Drawing Jigs and Fixtures	2	16	32	48	Industrial Drawing 2	
4	Jigs and Fixtures Manufacturing Workshop	1	-	48	48	Machine Tools Workshop	Principles of Designing and Drawing Jigs and Fixtures
5	Designing and Drawing Shear Molds	3	32	48	80	Industrial Drawing 2	
6	Shear Molds Manufacturing Workshop	1	-	64	64	Machine Tools Workshop	Designing and Drawing Shear Molds
7	Designing, Drawing, Forming, and Stretching Molds	2	16	32	48	Designing and Drawing Shear Molds	
8	Designing, Drawing, Forming, and Stretching Molds Workshop	۱	–	۶۴	۶۴	Shear Molds Manufacturing Workshop	Designing, Drawing, Forming, and Stretching Molds
9	Computer-Assisted Drawing Metal Molds	2	16	48	64	Computer-assisted Drawing	
10	Computer-Assisted Modeling and Molds	2	16	32	48		Designing, Drawing, Forming, and Stretching Molds
11	Pressing Machines, Testing, and Repairing Metal Molds	۲	۱۶	۳۲	۴۸		Designing, Drawing, Forming, and Stretching Molds

	Total	20	160	432	592		

Non-Continuous Technical Associate's Degree in Mechanics (Manufacture of Die Cast Molds)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT/ Business Laws and Business Information Technology	2	32	-	32	
3	Entrepreneurship / Principles of Supervision	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Mechanical Physics	2	32	-	32	
3	Industrial Mechanics	3	48	-	48	Mechanical Physics
4	Materials Science					
	Total	5	64	32	96	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Drawing 1	2	16	32	48		
2	Industrial Drawing 2	2	16	32	48	Industrial Drawing 1	
3	Computer-Assisted Drawing	2	16	32	48		Industrial Drawing 2
4	General Mechanics Technology	1	16	-	16		
5	General Mechanics Workshop	1	-	48	48		General Mechanics Technology
6	Welding Technology	1	16	-	16		
7	Welding Workshop	1	-	48	48		Welding Technology
8	Casting Technology	1	16	-	16		

9	Casting Workshop	1	-	48	48		Casting Technology
10	Machine Tools Technology	1	16	-	16	General Mechanics Workshop	
11	Machine Tools Workshop	1	-	64	64		Machine Tools Technology
12	CNC Machine Tools Technology	1	16	-	16	Machine Tools Workshop	
13	CNC Machine Tools Workshop	1	-	48	48		CNC Machine Tools Technology
14	Instrumentation and Laboratory	2	16	48	64		
	Total	**20**	**144**	**640**	**784**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Heat Treatment and Laboratory	2	16	32	48	Materials Science	
2	Hydraulics, Pneumatics, and Laboratory	2	16	32	48		
3	English for Specific Purposes	2	32	-	32	General English	
4	Metal Molds	2	32	-	32	Industrial Drawing 2	
5	Principles of Designing and drawing Jigs and Fixtures	2	16	32	48	Industrial Drawing 2	
6	Designing and Drawing Die Cast Molds 1	2	16	48	64	Industrial Drawing 2	
7	Die Cast Molds Manufacturing Workshop 1	1	-	64	64	Tools Machine Workshop	Designing and Drawing Die Cast Molds 1
8	Designing and Drawing Die Cast Molds 2	2	16	48	64	Designing and Drawing Die Casting Molds 1	
9	Die Cast Molds Manufacturing Workshop 1	1	-	64	64		
10	Computer-Assisted Drawing Die Cast Molds	۲	۱۶	۴۸	۶۴	Computer-assisted Drawing	Designing and Drawing Die Cast Molds 2
11	Die Cast Pressing Machines, Testing, and Repairing Die Cast Molds	۲	۱۶	۳۲	۴۸	Designing and Drawing Die Cast Molds 2	
	Total	20	160	432	592		

Non-Continuous Technical Associate's Degree in Mechanics (Manufacture of Plastic Molds)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT/ Business Laws and Business Information Technology	2	32	-	32	
3	Entrepreneurship / Principles of Supervision	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Mechanical Physics	2	32	-	32	
3	Industrial Mechanics	3	48	-	48	Mechanical Physics
4	Materials Science	۲	۳۲	–	۳۲	
	Total	۹	۱۴۴	–	۱۴۴	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Drawing 1	2	16	32	48		
2	Industrial Drawing 2	2	16	32	48	Industrial Drawing 1	
3	Computer-Assisted Drawing	2	16	32	48		Industrial Drawing 2
4	General Mechanics Technology	1	16	-	16		
5	General Mechanics Workshop	1	-	48	48		General Mechanics Technology
6	Welding Technology	1	16	-	16		
7	Welding Workshop	1	-	48	48		Welding Technology
8	Casting Technology	1	16	-	16		
9	Casting Workshop	1	-	48	48		Casting Technology

10	Machine Tools Technology	1	16	-	16	General Mechanics Workshop	
11	Machine Tools Workshop	1	-	64	64		Machine Tools Technology
12	CNC Machine Tools Technology	1	16	-	16	Machine Tools Workshop	
13	CNC Machine Tools Workshop	1	-	48	48		CNC Machine Tools technology
14	Instrumentation and Laboratory	2	16	48	64		
	Total	۱۸	۱۴۴	۴۰۰	۵۴۴		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Hydraulics, Pneumatics, and Laboratory	2	16	32	48		
2	English for Specific Purposes	2	32	-	32	General English	
3	An Introduction to Metal Molds	2	32	-	32	Industrial Drawing 2	
4	Principles of Designing and Drawing Jigs and Fixtures	2	16	32	48	Industrial Drawing 2	
5	Heat Treatment and Laboratory	2	16	32	48		
6	Designing and Drawing Plastic Molds 1	2	16	48	64	Industrial Drawing 2	
7	Plastic Molds Manufacturing Workshop 1	1	-	64	64	Tools Machine Workshop	Designing and Drawing Plastic Molds 1
8	Designing and Drawing Plastic Molds 2	2	16	48	64	Designing and Drawing Plastic Molds 1	
9	Plastic Molds Manufacturing Workshop 1	1	-	64	64		
10	Computer-Assisted Drawing Plastic Molds	۲	۱۶	۴۸	۶۴	Computer-assisted Drawing	Designing and Drawing Plastic Molds 2
11	Pressing Machines,Testing, and Repairing Plastic Molds	۲	۱۶	۳۲	۴۸	Designing and Drawing Plastic Molds 2	
	Total	20	160	432	592		

Non-Continuous Technical Associate's Degree in Spinning Textile Industries

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	Report Making	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Textile Chemistry	2	32	-	32	
3	Welding and Metalworking Workshop	1	-	48	48	
	Total	**5**	**64**	**48**	**112**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Drawing	١	١٦	-	١٦		
2	Industrial Drawing Workshop	١	-	٤٨	٤٨		Industrial Drawing
3	The Application of Computer in Textile Industries	٢	٣٢	-	٣٢		
4	A Workshop on the Application of Computer in Textile Industries	١	-	٤٨	٤٨		The Application of Computer in Textile Industries
5	Maintenance and Repairs in Spinning Industry	٣	٤٨	-	٤٨		
6	Air Conditioning and Refrigeration in Textile	٢	٣٢	-	٣٢		
7	Fiber Science	٢	٣٢	-	٣٢		
8	Fiber Science Laboratory	١	-	٣٢	٣٢		Fiber Science
9	Fiber Physics	٢	٣٢	-	٣٢		
10	Fiber Physics Laboratory	١	-	٣٢	٣٢		Fiber Physics
	Total	16	192	160	352		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32	General English	
2	Spinning, 1 (Wool Batting, Carding, and Pulling)	۲	۳۲	-	۳۲	Fiber Science	
3	Spinning Workshop 1 (Wool Batting, Carding, and Pulling)	۱	-	۴۸	۴۸	-	Spinning 1
4	Spinning; 2 (Combing, Flyer, and Ring)	۲	۳۲	-	۳۲	Spinning 1	
5	Spinning Workshop 2 (Wool Batting, Carding, and Pulling)	۱	-	۴۸	۴۸	Spinning Workshop1	Spinning 2
6	Long Fiber Spinning	۲	۳۲	-	۳۲	Spinning1	
7	Long Fiber Spinning Workshop	۱	-	۴۸	۴۸	Spinning Workshop1	Long Fiber Spinning
8	Modern Spinning	۲	۳۲	-	۳۲	Spinning1	
9	Modern Spinning Workshop	۱	-	۴۸	۴۸	Spinning Workshop1	Modern Spinning
10	Open-End Spinning	۲	۳۲	-	۳۲	Fiber Science	
11	Spinning Quality Control	۲	۳۲	-	۳۲	Long Fiber Spinning	
12	Spinning Quality Control Laboratory	۱	-	۳۲	۳۲		Spinning Quality Control
13	Mechatronics Principles in Textiles	۳	۴۸	-	۴۸		
14	Mechatronics Principles in Textiles Workshop	۱	-	آ۴۸	۴۸		Mechatronics Principles in Textiles
15	Project	۲	-	۹۶	۹۶	Last semester	
	Total	25	272	368	640		

Non-Continuous Technical Associate's Degree in Metallurgy (Casting)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	Principles of Quality Control	2	32	-	32	
3	Entrepreneurship	2	32	-	32	

4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Thermal Physics	1	16	-	16	
2	Thermal Physics Laboratory	1	-	32	32	Thermal Physics
3	General Chemistry	2	32	-	32	
4	General Chemistry Laboratory	1	-	32	32	General Chemistry
5	General Mathematics	3	48	-	48	
	Total	**8**	**96**	**64**	**160**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Physical Properties of Materials	3	48	-	48		
2	Metallography Laboratory	1	-	48	48	Physical Properties of Materials	
3	Mechanical Properties of Materials	2	32	-	32	Physical Properties of Materials	
4	Mechanical Properties of Materials Laboratory	1	-	48	48		Mechanical Properties of Materials
5	Heat Treatment	2	32	-	32	Laboratory of Metallography Mechanical Properties of Materials Laboratory	
6	Heat Treatment Laboratory	1	-	48	48		Heat Treatment
7	Refractories and Industrial Application	1	16	-	16		
8	Technology and a Workshop on Manufacturing and Maintaining Industrial Furnaces	2	32	-	32	Refractories and Industrial The Application	
9	Molds Materials Laboratory	1	-	48	48		
10	Designing and Drawing Models and Molds	2	16	48	64		

11	The Application of Computer	1	-	64	64		
12	General Workshop	1	-	64	64		
	Total	**18**	**176**	**368**	**544**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Casting Technology	3	48	-	48		
2	Casting Workshop 1	1	-	48	48		
3	Casting Workshop 2	1	-	48	48	Casting Workshop 1	
4	Ferrous Alloys Casting	3	48	-	48	Physical Properties of Materials	
5	Nonferrous Alloys Casting	3	48	-	48	Physical Properties of Materials	
6	Ferrous Alloys Casting Workshop	1	-	64	64		of Ferrous Alloys Casting
7	Nonferrous Alloys Casting Workshop	1	-	64	64		of Nonferrous Alloys Casting
8	Basic Modeling Workshop	1	-	64	64		
9	Specialized Modeling Workshop	1	-	64	64	Preliminary Modeling Workshop	
10	Casting Parts Defects	2	32	-	32		Workshop on Ferrous Alloy Casting Workshop on Nonferrous Alloy Casting
11	Permanent Molds Casting	2	32	-	32		Workshop on Ferrous Alloy Casting Workshop on Nonferrous Alloy Casting
12	English for Specific Purposes	2	32	-	32	General English	
	Total	**21**	**240**	**352**	**592**		

Non-Continuous Technical Associate's Degree in Gold and Jewelry (Casting)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics / Principles of Supervision	2	32	-	32	
2	Business / Entrepreneurial Skills and Rules	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	Precious Metals Chemistry	3	48	-	48	
2	Technical Computations	2	32	-	32	
3	Materials Science	2	32	-	32	Precious Metals Chemistry
	Total	7	112	-	112	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Precious Metals and Alloys	2	32	-	32		Materials Science
2	Jewelry Drawing Workshop	1	-	64	64		
3	Melting Precious Metals	2	32	-	32		
4	Melting Precious Metals Workshop	1	-	48	48		Melting Precious Metals
5	Rolling Precious Metals	3	48	-	48		
6	Rolling Precious Metals Workshop	1	-	48	48		Rolling Precious Metals
7	Metalworking	3	48	-	48		
8	Metalworking Workshop	2	-	96	96		Metalworking
9	Sawing Workshop	1	-	48	48		
10	Welding Precious Metals	2	32	-	32		
11	Welding Precious Metals Workshop	1	-	48	48		Welding Precious Metals
	Total	19	192	352	544		

Table of Specialized Courses

#	Course Title		Hours	Prerequisite(s)	Corequisite(s)

		No. of Credits	Theoretical	Practical	Total		
1	Rubber Molding and Waxing	2	32	-	32	Materials Science	
2	Rubber Molding and Waxing Workshop	2	-	96	96		Rubber Molding and Waxing
3	Plaster Molding and Dewaxing	2	32	-	32		Rubber Molding and Waxing
4	Plaster Molding and Dewaxing Workshop	1	-	48	48	Rubber Molding and Waxing Workshop	Plaster Molding and Dewaxing
5	Casting Precious Metals	3	48	-	48	Melting Precious Metals	
6	Casting Precious Metals Workshop	2	-	96	96	Melting Precious Metals Workshop, Plaster Molding and Dewaxing Workshop	Casting Precious Metals
7	English for Specific Purposes	2	32	-	32	General English	
8	Methods of Reducing Precious Metals Loss	2	32	-	32	Metalworking	
9	Finishing Operations	2	16	48	64	Material Science, Precious Metals Chemistry	Last semester
	Total	18	192	288	490		

Non-Continuous Technical Associate's Degree in Chemical Industry (Automotive Paint)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Report Making	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Business Skills and Rules	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Chemistry	2	32	-	32	

2	General Chemistry Laboratory	1	-	32	32	General Chemistry
3	General Physics	2	32	-	32	
4	General Mathematics	2	32	-	32	
5	Principles and Application of Computer	2	16	48	64	
	Total	9	112	80	192	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	2	32	-	32		General Chemistry
2	The Application of Statistics	2	32	-	32		
3	Organic Chemistry Laboratory	1	-	32	32		Organic Chemistry
4	Polymer Chemistry	3	48	-	48	Organic Chemistry	
5	Polymer Chemistry Laboratory	1	-	32	32		Polymer Chemistry
6	General Physical Chemistry	2	32	-	32	General Chemistry	
7	English for Specific Purposes	2	32	-	32	General English	
8	Corrosion and Protective Coatings	2	32	-	32		General Chemistry
9	Scientific and Practical Principles of Hydraulics and Pneumatics	1	16	-	16	General Physics	
10	Standard and Management Systems of Quality Guarantee	1	16	-	16		
	Total	17	240	64	304		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Scientific and Applied Principles of Paints	3	48	-	48	Polymer Chemistry	
2	Coating Processes and Applying Paints	2	32	-	32	-	
3	Repair Coatings of Automotive Paint	1	-	48	48	Scientific and Applied Principles of Paint	
4	Coating Processes and Applying Paint Workshop	1	-	48	48	-	Coating Processes and Applying Paint

5	Processing Machinery and Equipment and Paint Lines Designing	2	32	-	32	Scientific and Applied Principles of Hydraulics and Pneumatics	
6	Operating Machines and Devices of Automatic Paint Spraying	1	-	48	48		Coating Processes and Applying Paint
7	Quality Control and Color Defects	2	32	-	32	Scientific and Applied Principles of Paint	
8	Timing and Balance Methods of Production Lines	1	16	-	16	The Application of Statistics	
9	Paint Process Workshop	1	-	48	48		Processing Machinery and Equipment, and Paint Lines Designing
10	Surface Coatings Quality Control Laboratory	1	-	32	32		Quality Control and Color Defects
11	Colorimetry	2	32	-	32		
12	Colorimetry Laboratory	1	-	32	32		Colorimetry
13	Paint Circulation	1	-	48	48		Coating Processes and Applying Paint
14	General Paint Workshop	1	-	48	48	Scientific and Applied Principles of Paint	
15	Industrial Coatings and Resins Workshop	1	-	48	48		
	Total	21	192	400	592		

Non-Continuous Technical Associate's Degree in Robotics

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	

	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	Applied Mathematics of Robotics	3	48	-	48	
2	Mechanical Physics	2	32	-	32	Applied Mathematics of Robotics
3	Computer and Computer Programming Workshop	1	-	48	48	
4	Physics of Electricity and Magnetism	2	32	-	32	
5	Physics of Electricity and Magnetism Laboratory	1	-	32	32	Physics of Electricity and Magnetisms
	Total	**9**				

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32		
2	Industrial Drawing	1	-	48	48		
3	Electric Circuits	2	32	-	32	Physics of Electricity and Magnetisms	
4	Electronic Circuits	2	32	-	32	Electric Circuits	
5	Electronic Circuits Laboratory	1	-	32	32		Electronic Circuits
6	Principles of Digital	3	48	-	48		-
7	Digital Principles Laboratory	1	-	32	32		Principles of Digital
8	Electric Machines	2	32	-	32		-
9	Electric Machines Laboratory	1	-	32	32		Electric Machines
	Total	15					

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Power and Motors Electronics	2	32	-	32	Electronic Circuits	
2	Power and Motors Electronics Laboratory	1	-	32	32		Power and Motors Electronics

3	Microcomputers	2	32	-	32	Principles of Digital	
4	Microcomputers Laboratory	1	-	32	32		Power and Motors Electronics
5	Robotics	3	48	-	32		
6	Robotics Laboratory	1	-	32	32		Robotics
7	Robot Control Workshop	2	-	96	96		Robotics
8	Robot Sensors	3	48	-	48		
9	Robot Sensors Laboratory	1	-	32	32		Robotics Laboratory Robot Sensors
10	The Application of Robots in Automation	1	16	-	16		-
11	The Application of Robots in Automation Workshop	2	-	64	64		The Application of Robots in Automation
	Total	19					

Non-Continuous Technical Associate's Degree in Civil Engineering (Road Construction)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics and Principles of Statistics	3	48	-	48	
2	General Physics	2	32	-	32	
3	General Physics Laboratory	1	-	32	32	

4	Technical Drawing	1	-	64	64	
	Total	**7**	**80**	**96**	**176**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	General Mathematics and Principles of Statistics	
2	The Application of Computer in Road Construction	1		64	64	-	
3	Geology and Laboratory	2	16	32	48	-	
4	Implementation and Building Materials	1		48	48	Statics	
5	Surveying and Operations 1	2	16	48	64	General Mathematics and Principles of Statistics	
6	Implementation and Management of Road Construction Workshops	1	-	64	64	-	
7	Soil Mechanics	2	32	-	32	Structural Statics	
8	Soil Mechanics Laboratory	1		32	32		Soil Mechanics
9	Drawing and Map Reading	1		64	64		
10	Traffic and Operations	2	16	32	48		
11	Road Safety Equipment and Installations	2	32		32	Traffic and Operations	
12	Road Construction Machinery	2	32		32	Implementation and Management of Road Construction Workshop	
	Total	**19**	**160**	**432**	**592**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Concrete Technology	2	32	-	32		
2	Concrete Technology Laboratory	1	-	32	32		
3	Geometric Road Design	2	32	-	32	Soil Mechanics	

4	Road Surfacing	3	48		48	Construction Materials Geometric Road Design	
5	Bridge Construction	2	32		32	Geometric Road Design	
6	Quantity Surveying and Estimating Road Construction Plans	2	16	32	48	Geometric Road Design Road Paving Bridge Construction	
7	Surveying and Operations 2	2	16	48	64	Surveying and Operations 1	
8	Road Maintenance					Road Paving	
9	Superstructure Laboratory	۱		۶۴	۶۴	Road Paving	
10	English for Specific Purposes	۱		۳۲	۳۲		
11	Technical Buildings Workshop	۲	۳۲		۳۲	Implementation and Management of Road Construction Workshop	
12	Tunneling	۱		۴۸	۴۸	Implementation and Management of Road Construction Workshop	
	Total	**21**	**240**	**288**	**528**		

Non-Continuous Technical Associate's Degree in Ceramics Industry (Production Line)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	General Physics	2	32	-	32	General Mathematics

3	General Physics Laboratory	1	-	32	32	General Physics
4	General Chemistry of Ceramics	1	16	-	16	-
5	General Chemistry of Ceramics Laboratory	1	-	32	32	General Chemistry of Ceramics
	Total	8	96	64	160	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Raw Materials of Ceramics	2	32	-	32		
2	Raw Materials of Ceramics Workshop	1	-	64	64		Raw Materials of Ceramics
3	Principles of Preparing and Forming Ceramics	2	32	-	32		Raw Materials of Ceramics
4	Preparing and Forming Ceramics Workshops	1	-	64	64		Principles of Preparing and Forming Ceramics
5	Structure of Ceramics	2	32	-	32	General Chemistry of Ceramics and Laboratory	
6	Properties of Ceramics and Phase Diagrams	2	32	-	32	Ceramic Structure	
7	Principles of Drying and Firing Ceramics	2	32	-	32	Principles of Preparing and Forming Ceramics	
8	Principles of Drying and Firing Ceramics Workshop	1	-	64	64	Preparing and Forming Ceramics Workshops	Principles of Drying and Firing Ceramics
9	Firing Kilns of Ceramics	2	32	-	32	Principles of Drying and Firing Ceramics	
10	The Application of Computer in Ceramic Designing	2	16	32	48		
11	An Introduction to Electricity	2	16	32	48		
	Total	19	224	256	480		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Glass Technology	2	32	-	32	Structure of Ceramics	
2	Glaze and Decoration	2	32	-	32	Glass Technology	
3	Glaze and Decoration Workshop	1	-	64	64	-	Glaze and Decoration
4	Principles of Refractory	2	32	-	32	Principles of Drying and Firing Ceramics	-
5	Principles of Refractory Workshop	1	-	64	64	Principles of Drying and Firing Ceramics Workshop	Refractory Principles
6	Tiles Technology	2	32	-	32	Principles of Drying and Firing Ceramics	-
7	Tiles Workshop	1	-	64	64	Principles of Drying and Firing Ceramics Workshop	Tile Technology
8	Principles of Porcelain	2	32	-	32	Principles of Drying and Firing Ceramics	
9	Principles of Porcelain Workshop	1	-	64	64	Principles of Drying and Firing Ceramics Workshop	Porcelain Technology Production
10	Cement Production Technology	1	16	-	16	Principles of Drying and Firing Ceramics	-
11	Cement Technology Workshop	1	-	32	32	-	Cement Production Technology
12	Molding Workshop	2	-	96	96	-	
13	English for Specific Purposes	2	32	-	32	General English	
	Total	20	208	384	592		

Non-Continuous Technical Associate's Degree in Information Technology (IT(Urban Electronic Services)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Business Skills and Rules	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	Statistics and Probability	2	32	-	32	General Mathematics
3	Computer Principles and Skills	1	16	-	16	
4	Computer Principles and Skills Workshop	1	-	64	64	Computer Principles and Skills
	Total	7	69	64	133	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	An Introduction to Internet	1	16	-	16		
2	Internet Workshop	1	-	48	48		
3	Web Programming	2	32	-	32	Computer Principles and Skills	
4	Web Programming Workshop	1	-	48	48		Web Programming
5	Data Structure	2	32	-	32	Computer Principles and Skills	
6	Data Structure Workshop	1	-	48	48		Data Structure
7	Operating Systems of Network Management	2	32	-	32	Computer Principles and Skills	
8	Operating Systems of Network Management Laboratory	1	-	32	32		Operating Systems of Network Management
9	Systems Analysis	2	32	-	32	Data Structure	-
10	Systems Analysis Workshop	1	-	48	48		Systems Analysis
11	Database Laboratory	1	-	32	32		Database
12	Database	2	32	-	32		Data Structure
13	Computer Networks	2	32	-	32	Data Structure	-
14	Computer Networks Laboratory	1	-	32	32		Computer Networks
	Total	20	208	288	496		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of IT	2	32	-	32		
2	Principles of IT Workshop	1	-	48	48		Principles of Information Technology
3	Multimedia Environments	1	16	-	16		
4	Multimedia Environments Workshop	1	-	48	48		Multimedia Environments
5	Electronic Commerce (E-comerce)	2	32	-	32	Computer Networks	
6	E-Commerce Workshop	1	-	48	48		Electronic Commerce
7	Electronic Business	1	16	-	16		
8	Special Topics (Urban Electronics)	2	32	-	32		
9	Principles of Urban Electronics	3	48	-	48	Principles of IT	
10	Urban Electronic Services	2	32	-	32		
11	Urban Electronic Services Workshop	1	-	48	48		Urban Electronic Services
12	Geographic Information Systems (GIS)	2	32	-	32	Urban Electronic Services	
13	GIS Workshop	1	-	48	48		Geographic Information Systems(GIS)
	Total	20	240	240	480		

Non-Continuous Technical Associate's Degree in Chemical Industry (Paint Manufacturing)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title		Hours	

		No. of Credits	Theoretical	Practical	Total	Coerequisite
1	General Chemistry	2	32	-	32	
2	General Mathematics	2	32	-	32	
3	General Physics	2	32	-	32	
4	General Chemistry Laboratory	1	-	32	32	General Chemistry
5	Principles and Applications of Computer	2	16	48	64	
	Total	9	112	80	192	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	2	32	-	32		General Chemistry
2	Polymer Chemistry	3	48	-	48	Organic Chemistry	
3	General Physics Chemistry	2	32	-	32	General Chemistry	
4	English for Specific Purposes	2	32	-	32	General English	
5	Corrosion and Protective Coatings						General Chemistry
6	Organic Chemistry Laboratory	2	32	-	32		Organic Chemistry
7	Polymer Chemistry Laboratory	1	-	32	32		Polymer Chemistry
8	Standard and Management Systems of Quality Guarantee	1	-	32	32		
	Total	14	192	64	256		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Raw Materials of Paint	2	32	-	32		
2	Industrial Resins	2	32	-	32		Polymer Chemistry
3	Principles and Technology of Paint Manufacturing	3	48	-	48	Raw Materials of Paint	
4	Physical Chemistry of Paint	1	16	-	16		
5	Colorimetry	2	32	-	32		

6	Coating and Applying Processes	3	32	48	80		
7	Quality Control and Color Defects	2	32	-	32	Principles and Technology of Paint Manufacturing	
8	Paint Raw Materials Workshop	1	-	48	48		Raw Materials of Paint
9	Paint Manufacturing Workshop 1	2	-	96	96	Principles and Technology of Paint Manufacturing	
10	Colorimetry Laboratory	1	-	32	32		Colorimetry
11	Coating and Color Applying Processes Workshop	1	-	48	48		Coating and Applying Processes
12	Laboratory of Surface Coatings Quality Control	1	-	32	32		Quality Control and Color Defects
13	Technology and Dyeing Textile Fibers	1	16	-	16	Raw Materials of Paint	
14	Dying and Printing Workshop	1	-	48	48		Technology of Textile Fibers and Dying
15	Industrial Coatings and Resins Workshop	1	-	48	48		
	Total	24	240	400	640		

Non-Continuous Technical Associate's Degree in Civil Engineering (Urban Transportation)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Skills and Business Rules	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	

2	Computer Principles	2	32	-	32	
3	Computer Principles Workshop	2	32	-	32	
4	Principles of Statistics and Probability	1	-	32	32	
	Total	7	96	48	144	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organizational Relations and Human Resources Management	2	32	-	32		
2	Computer-Assisted Technical Drawing	2	-	96	96	Computer Principles, Computer Principles Workshop	
3	Urban Economy with an Emphasis on Transportation	2	32	-	32	General Mathematics	
4	Basic Accounting	2	32	-	32	General Mathematics	
5	Principles of Urban Planning	2	32	-	32		
6	Principles of Urban Designing	2	32	-	32	Principles of Urban Planning	
7	An Introduction to Traffic and Transport Laws and Regulations	2	32	-	32		
8	Principles of Urban Environment	2	32	-	32		
	Total	16	224	96	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Traffic Engineering	3	48	-	48	Mathematics	
2	Traffic Engineering Project	1	-	48	48		Principles of Traffic Engineering
3	Principles of Transportation Planning	2	32	-	32	Mathematics	Principles of Traffic Engineering
4	Transportation Planning Workshop	1	-	64	64		Principles of Transportation Planning
5	Principles of Road Geometric Design	2	32	-	32	Mathematics	

6	A Workshop on Statistics Keeping and Information Processing Methods	1	-	48	48	Mathematics Principles of Traffic Engineering	
7	English for Specific Purposes					General English	
8	The Application of Computer in Transportation and Traffic	2	-	96	96	Principles of Computer-General Mathematics – Principles of Traffic Engineering	
9	Safety in Transportation and Traffic	2	32	-	32	Principles of Road Geometric Design	
10	Public Transportation Systems	2	32	-	32		Principles of Transportation Planning
11	A Workshop on Types of Transportation Systems	1	-	48	48		
12	Technical Reports and Seminars	2	-	96	96	Transportation Systems - Computer The Application in Transportation and Traffic	
13	A Workshop on Public Transport Facilities and Equipment	1	-	48	48	Transportation Systems	
14	A Workshop on Traffic Culture Education	1	-	48	48	Principles of Traffic Engineering – Urban Transportation and Traffic Planning Principles – Laws and Regulation of Traffic and Transport	
	Total	23	208	496	704		

Non-Continuous Technical Associate's Degree in Mine Drilling

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	

2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Technical Drawing	1	-	48	48	
3	General Physics	2	32	-	32	
4	General Physics Laboratory	1	-	32	32	
5	General Chemistry	2	32	-	32	
6	General Chemistry Laboratory	1	-	48	48	
	Total	**9**	**96**	**128**	**224**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Structural Geology	2	32	-	32		
2	Mineralogy and Lithology	1	16	-	16		
3	Mineralogy and Lithology Laboratory	1	-	32	32		Mineralogy and Lithology
4	English for Specific Purposes	2	32	-	32		
5	Machine Components	1	16	-	16		
6	Machine Components Workshop	1	-	48	48		Machine Components
7	General Workshop	1	-	64	64	General Physics	
8	Principles of Industrial Electricity	1	16	-	16	-	
9	Industrial Electricity Workshop	1	-	48	48	General Physics	Principles of Industrial Electricity
10	Statics and Strength of Materials	2	32	-	32		
11	Surveying	1	16	-	16	General Mathematics	
12	Surveying Operations	1	-	64	64	Surveying	Surveying

13	Fluid Mechanics	2	32	-	32	Statics and Strength of Materials	
14	Cartography and Map Reading					Structural Geology	
	Total	18	192	304	496		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Mine Exploration	1	16	-	16	Mineralogy and Lithology	
2	Rock and Soil Mechanics	2	32	-	32	Statics and Strength of Materials	
3	Mine Drilling	1	16	-	16	-	Rock and Soil Mechanics
4	Mine Drilling Workshop	1	-	48	48	-	Mineral Drilling
5	Hydraulic and Pneumatic Systems	2	32	-	32	General Physics	-
6	Drilling Machines	2	32	-	32	Machine Components	Hydraulic and Pneumatic Systems
7	Drilling Machines Workshop	1	-	48	48		Drilling Machines
8	Drilling Boreholes	2	32	-	32	Principles of Mining Exploration	Mineral Drilling
9	Borehole Drilling Workshop	1	-	48	48	-	Drilling Boreholes
10	Drilling Fluid	2	32	-	32	Fluid Mechanics	Drilling Machines
11	Well Logging	2	32	-	32	-	Drilling Boreholes
12	Well Logging Workshop	1	-	64	64	-	Well Logging
13	Maintenance and Repair of Drilling Equipment	2	-	96	96	Drilling Machines	
	Total	20	224	304	528		

Non-Continuous Technical Associate's Degree in Medical Equipment (Infection Control and Sterilization Equipment)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	

2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	General Chemistry	2	32	-	32	
3	General Physics	2	32	-	32	
4	General Workshop	1	-	64	64	
	Total	**7**	**96**	**64**	**160**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Microbiology and Health	2	32	-	32		General Chemistry
2	Microbiology and Health Laboratory	1	-	32	32		Microbiology and Health
3	Principles of Infection Control	2	32	-	32		
4	An Introduction to Physical Environments and Principles of Working in Infection Control Section, Sterilization, and Related Installations	1	-	48	48		
5	National Rules and Regulations of Medical Equipment	1	16	-	16		
6	An Introduction to Disinfectants	2	32	-	32		
7	Applied Electronics	2	32	-	32	General Physics	
8	Applied Electronics Laboratory	1	-	32	32		Applied Electronics
9	Circuits and Electric Machines	2	32	-	32		
10	Electrical and Electronic Measurement	2	32	-	32		
11	Electrical and Electronic Measurement Workshop	1	-	48	48		Electrical and Electronic Measurement
	Total	17	208	160	368		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Disinfection and Sterilization Methods	2	32	-	32	Microbiology and Health	
2	A Workshop on Documentation, Tracing, and CSSD Automation	1	-	64	64		
3	Methods of Disinfecting and Sterilizing Medical Equipment and Supplies	2	32	-	32		
4	Hydraulics and Pneumatics	2	32	-	32		
5	Hydraulics and Pneumatics Workshop	1	-	48	48		Hydraulics and Pneumatics
6	Principles and Application of Monitoring Sterilizer Performance	2	32	-	32		
7	Troubleshooting and Maintaining Sterilizing Machines	2	32	-	32		
8	A Workshop on Monitoring, Troubleshooting, and Maintaining Sterilizing Machines	1	-	64	64		Troubleshooting and Maintaining Sterilizers
9	Cleansing, Disinfection, and Packaging Equipment	2	32	-	32		
10	A Workshop on Cleansing, Disinfection, and Packaging Equipment	1	-	48	48		Cleansing Disinfection, and Packaging Equipment
11	Monitoring Performance and Troubleshooting Infection Controling and Sterilization Installations	2	32	-	32		
12	Workshop on Monitoring Performance and Troubleshooting Infection Controling and Sterilization Installations	1	-	48	48		
13	Infection Controling and Sterilization Equipment and Installations Maintenance	1	-	48	48		
14	An Introduction to Market for Equipment and Materials of Infection Control and Sterilization	1	16	-	16		
15	English for Specific Purposes	2	32	-	32		
	Total	23	272	320	592		

Non-Continuous Technical Associate's Degree in Welding

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Mechanics and Thermal Physics	2	32	-	32	
3	General Chemistry	2	32	-	32	
4	Technical Drawing	1	-	48	48	
5	Physics of Electricity	2	32	-	32	
	Total	9	128	48	176	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	Mechanics, and Thermal Physics General Mathematic	
2	Methods of Joining Materials	2	32	-	32	-	
3	Physical Properties and an Introduction to Materials	3	48		48	Mechanics, and Thermal Physics General Mathematic	General Chemistry
4	Metallography Laboratory	1	-	32	32	Physical Properties and Recognition of Materials	
5	Principles of Welding Metallurgy	2	32	-	32	Physical Properties and Recognition of Materials	

6	Mechanical Properties	2	32	-	32	Statics, Physical Properties and Recognition of Materials	
7	Mechanical Properties Laboratory	1	-	32	32	Mechanical Properties	
8	Safety and Health	2	32	-	32		
	Total	15	208	64	272		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Welding Symbols and Map Reading	1	-	48	48	Technical Drawing I	
2	Welding Inspection Technology	2	32	-	32	-	
3	Defects and Causes	1	16	-	16	-	Principles of Welding Metallurgy
4	Gas Metal Arc Welding	2	32	-	32	Flux-cored Arc Welding	
5	Gas Metal Arc Welding Workshop	2	-	96	96	Gas Metal Arc Welding	
6	Nonferrous Metal Welding Technology	2	32	-	32	Principles of Welding Metallurgy Gas Metal Arc Welding	
7	Flux-Shielded Arc Welding	2	32	-	32	Methods of Joining Materials	
8	Shield Metal Arc Welding	2	-	96	96	Flux- shielded Arc Welding Safety and Health	
9	Ferrous Metal Welding Technology	2	32	-	32	Principles of Welding Metallurgy Flux- shielded Arc Welding	
10	Oxy-Fuel Gas Welding	1	16	-	16	Methods of Joining Materials	
11	Resistance Welding	1	16	-	16	Methods of Joining Materials Physics of Electricity	
12	Cutting Edge Processes	1	16	-	16	Oxy-fuel Gas Welding	

						Flux- shielded Arc Welding	
13	Oxy-Fuel Gas Welding and Cutting Workshop	2	-	96	96	Oxy-fuel Gas Welding Safety and Health	
14	Welding Metallurgy Laboratory	2	-	64	64	The last semester	
	Total	**23**	**224**	**400**	**624**		

Non-Continuous Technical Associate of Civil Engineering (Tunneling)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics and Principles of Statistics	3	48	-	48	
2	Technical Drawing	1	-	64	64	
3	General Physics		32	-	32	General Mathematics and Principles of Statistics
4	General Physics Laboratory	1	-	32	32	General Physics
	Total	7	80	96	176	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Surveying and Operations	2	16	48	64	Technical Drawing	
2	Structural Geology	2	32	-	32		
3	Structural Geology Operations	1		48	48		Structural Geology
4	Concrete Technology and Laboratory	2	16	32	48		

5	Soil Mechanics	2	32	-	32	Structural Geology	
6	Soil Mechanics Laboratory	1		48	48		Soil Mechanics
7	Project Quantity Surveying and Estimate	2	16	48	64		
8	Rock Mechanics	2	32	-	32	Structural Geology	
9	Rock Mechanics Laboratory	1		48	48		Rock Mechanics
10	Electrical Installations Workshop	1		64	64		
11	Mechanical Installations Workshop	1		64	64		
	Total	17	144	400	544		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Tunnel Drilling	2	32	-	32	Rock Mechanics	
2	Tunnel Drilling Workshop	1	-	64	64		Tunnel Drilling
3	Tunnel Maintenance	2	32	-	32	Structural Geology	
4	Tunnel Maintenance Workshop	1	-	64	64		Tunnel Maintenance
5	Technical Services in Tunnels	2	16	32	48		
6	Explosives, Pyrotechnics, and Operations	2	16	32	48		
7	Loading and Load Bearing in Tunnels	2	32	-	32		
8	Tunneling and Workshop Machinery	2	32	-	32		
9	Operations of Concrete Works and Workshop	2	16	48	64	Concrete Technology and Laboratory	
10	Operations of Metal Works and Workshops	2	16	48	64		
11	An Introduction to Surface Water and Groundwater, and Channel Interface	2	32	-	32	Structural Geology	
12	Equipping and Managing Workshop	1	16	-	16		
13	English for Specific Purposes	2	32	-	32		
	Total	**23**	**272**	**288**	**512**		

Non-Continuous Technical Associate's Degree in Medical Equipment (Laboratory Equipment for Medical Diagnosis)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	General Chemistry	2	32	-	32	
3	General Workshop	1	-	64	64	
4	Physiology and Anatomy	2	32	-	32	
5	Basic Laboratory Sciences	3	48	-	48	
	Total	10	144	64	208	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Circuits and Electric Machines	3	48	-	48		General Physics
2	Applied Electronics	2	32	-	32	Circuits and Electric Machines	
3	Applied Electronics Laboratory	1	-	48	48	-	Applied Electronics
4	Electrical and Electronic Measurement	1	16	-	16	Circuits and Electric Machines	
5	Electrical and Electronic Measurement Workshop	1	-	64	68	Circuits and Electric Machines	
6	National Rules and Regulations of Medical Equipment	1	16	-	16		

7	An Introduction to Materials, Kits, and Solutions in Medical Diagnosis Laboratory	2	16	48	64	Basic Laboratory Sciences	
8	An Introduction to Equipment for Medical Diagnosis Laboratory	2	16	48	64	Basic Laboratory Sciences	
9	Electronic Circuits	2	32	-	32	Applied Electronics	
10	Electronic Circuits Laboratory	1	-	48	48		Applied Electronics
	Total	**16**	**176**	**256**	**432**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Logic Circuits and Microcontrollers	3	48	-	48		
2	Logic Circuits and Microcontrollers Laboratory	1	-	48	48		Logic Circuits and Microcontrollers
3	English for Specific Purposes	2	32	-	32	General English	
4	Operation Principles of Medical Diagnosis Laboratory Equipment (1)	3	48	-	48	Identification of Materials, Kits, and Solutions of Medical Diagnostic Laboratory, Equipment of Medical Diagnosis Laboratory	
5	Operation Principles of Medical Diagnosis Laboratory Equipment (2)	3	48	-	48	Identification of Materials, Kits, and Solutions of Medical Diagnostic Laboratory, Equipment of Medical Diagnostic Laboratory	
6	A Workshop on Devices for Medical Diagnosis Laboratory	1	-	64	64		
7	Methods of Systematic Troubleshooting of Medical Diagnosis Laboratory Equipment (1)	2	32	-	32	Circuits and Electric Machines / Electrical and	

						Electronic Measurement	
8	A Workshop on Methods of Systematic Troubleshooting of Medical Diagnosis Laboratory Equipment (1)	1	-	64	64	General Workshop	Systematic Troubleshooting Methods of Medical Diagnosis Laboratory Equipment (1)
9	Methods of Systematic Troubleshooting of Medical Diagnosis Laboratory Equipment (2)	2	32	-	32		
10	A Workshop on Methods of Systematic Troubleshooting of Medical Diagnosis Laboratory Equipment (2)	1	16	-	16		Systematic Troubleshooting Methods of Medical Diagnosis Laboratory Equipment (2)
11	Maintenance Planning for Medical Diagnosis Devices for Laboratory	1	16	-	16	Introduction to Medical Diagnostic Laboratory Equipment	
12	An Introduction to the Market of Materials, Supplies, and Equipment for Medical Diagnosis Laboratory	1	16	-	16		
	Total	**21**	**272**	**272**	**544**		

Non-Continuous Technical Associate's Degree in Medical Equipment (Operating Theatre Equipment)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	

1	General Physics	2	32	-	32	
2	General Mathematics	2	32	-	32	
3	General Workshop	1	-	64	64	
4	Physiology and Anatomy	2	32	-	32	
5	Basic Laboratory Sciences	3	48	-	48	
	Total	**10**	**144**	**64**	**208**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Circuits and Electric Machines	3	48	-	48		General Physics
2	Applied Electronics	2	32	-	32	Circuits and Electric Machines	
3	Applied Electronics Laboratory	1	-	48	48	-	Applied Electronics
4	Electrical and Electronic Measurement	1	16	-	16	Circuits and Electric Machines	
5	Electrical and Electronic Measurement Workshop	1	-	64	68	Circuits and Electric Machines	
6	National Rules and Regulations of Medical Equipment	1	16	-	16		
7	An Introduction to Materials, Kits, and Solutions in Medical Diagnosis Laboratory	2	32	-	32	Basic Laboratory Sciences	
8	Equipment of Medical Diagnosis Laboratory	2	32	-	32	Basic Laboratory Sciences	
9	Electronic Circuits	2	32	-	32	Applied Electronics	
10	Electronic Circuits Laboratory	1	-	48	48		Applied Electronics
	Total	**16**	**208**	**160**	**368**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Logic Circuits and Microcontrollers	3	48	-	48		

2	Laboratory of Logic Circuits and Microcontrollers	1	-	48	48		Logic Circuits and Microcontrollers
3	English for Specific Purposes	2	32	-	32	General English	
4	Operation Principles of Medical Diagnosis Laboratory Equipment (1)	3	48	-	48	Identification of Materials, Kits, and Solutions of Medical Diagnosis Laboratory, Equipment of Medical Diagnosis Laboratory	
5	Operation Principles of Medical Diagnosis Laboratory Equipment (2)	3	48	-	48	Identification of Materials, Kits, and Solutions of Medical Diagnosis Laboratory, Equipment of Medical Diagnosis Laboratory	
6	Workshop on Medical Diagnosis Devices in Laboratory	1	-	64	64		
7	Methods of Systematic Troubleshooting of Medical Diagnosis Laboratory Equipment (1)	2	32	-	32	Circuits and Electric Machines / Electrical and Electronic Measurement	
8	Workshop on Methods of Systematic Troubleshooting of Medical Diagnosis Laboratory Equipment (1)	1	-	64	64	General Workshop	Systematic Troubleshooting Methods of Medical Diagnosis Laboratory Equipment (1)
9	Methods of Systematic Troubleshooting of Medical Diagnosis Laboratory Equipment (2)	2	32	-	32		
10	A Workshop on Methods of Systematic Troubleshooting ofMedical Diagnosis Laboratory Equipment (2)	1	16	-	16		Systematic Troubleshooting Methods of Medical Diagnosis Laboratory Equipment (2)

11	Maintenance Planning for Medical Diagnosis Laboratory Devices	1	16	-	16	Equipment of Medical Diagnosis Laboratory	
12	An Introduction to the Market of Materials, Supplies, and Equipment for Medical Diagnosis Laboratory	1	16	-	16		
	Total	**21**	**272**	**272**	**544**		

Table of Workplace Training Courses

No.	Courses	No. of Credits	Hours	Implementation Time
1	Job Survey	1	32	At the beginning of the course (between student registration, before the end of semester 1)
2	Internship 1	2	240	At the end of semester 2
3	Internship 2	2	240	At the end of the course

Non-Continuous Technical Associate's Degree in Electricity (Electrical Installations of Buildings)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Quality Control	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Physics of Electricity	2	32	-	32	
3	General Workshop	1	-	48	48	
4	Physics of Electricity Laboratory	1	-	32	32	
	Total	**6**	**64**	**80**	**144**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Electronics	3	48	-	48	-	
2	The Application of Computer in Electricity	2	16	48	64	-	Electrical Circuits Laboratory
3	Electric Circuits Laboratory	1	-	48	48	General Electronics	
4	Arc Welding Workshop	1	-	48	48	Electronic Principles	
5	Electricity Principles	2	32	-	32	-	
6	Electricity Principles Laboratory	2	-	64	64	Electronic Principles	
7	General and Technical Computations of Electricity	2	32	-	32	General Mathematics	
8	Electric Circuits Analysis	2	32	-	32	General Mathematics	
9	Technical Map Reading	2	32	-	32	-	
	Total	**17**	**192**	**208**	**400**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Applied Electricity in Installations	2	32	-	32	Electricity Principles Laboratory	
2	Applied Electricity Workshop	2	-	64	64	General Workshop	
3	Elevators and Escalators	2	32	-	32	Electronic Principles	
4	Electric Installations Drawing	2	-	64	64	Technical Reading Map	
5	Electricity Standards	2	32	-	32	Applied Electricity in Installations	
6	Installations Control and Intelligent Systems	3	32	32	64	Electric Circuits Analysis	
7	Basic PLC	2	32	-	32	Applied Electricity Workshop	
8	English for Specific Purposes and Catalog Reading	2	32	-	32	General English	
9	Lighting Equipment and Computations	2	32	-	32	Electric Circuits Analysis	

10	Wiring Workshop	1	-	48	48	Applied Electricity Workshop	
11	Safety in Electricity	2	32	-	32	-	
12	Principles of Electrical Measurement	2	16	32	48	Applied Electricity in Installations	
	Total	24	272	240	512		

Table of Workplace Training Courses

No.	Courses	No. of Credits	Hours	Implementation Time
1	Job Survey	1	32	At the beginning of the course (between student registration, before the end of semester 1)
2	Internship 1	2	240	At the end of semester 2
3	Internship 2	2	240	At the end of the course

Non-Continuous Technical Associate's Degree in Civil Engineering (Contract Affairs)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Skills and Rules of Business	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Mechanical Physics	3	48	-	48	
3	Principles of Computer and Programming	2	-	96	96	
4	Technical Drawing and Construction Drawing	1	-	48	48	
	Total	**8**	**80**	**144**	**224**	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	Mechanical Physics	
2	Strength of Materials	2	32	-	32	Statics	
3	Introduction to Building Materials	2	32	-	32	-	
4	Surveying	2	-	64	64	General Mathematics	
5	Concrete Technology	2	32	-	32	Introduction to Building Materials	
6	Concrete Technology Laboratory	1	-	32	32		Concrete Technology
7	Welding Laboratory	2	-	64	64		
8	National Building Rules and Regulations	2	32	-	32		
9	Building Maintenance	2	32	-	32		
	Total	**17**	**192**	**160**	**352**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32	General English	
2	Building Procedures	2	32	-	32	-	
3	Soil Mechanics	2	32	-	32	Mechanical Physics	
4	Concrete Structures	2	32	-	32	Statics	
5	Concrete Structures Project	2	-	64	64	Concrete Structures	
6	Metal Structures	2	32	-	32	Statics	
7	Metal Structures Project	2	32	-	32	Metal Structures	
8	Quantity Surveying and Estimate	2	32	-	32		
9	Contract Affairs	3	48	-	48		
10	Quantity Surveying and Estimate Software	1	-	48	48	Quantity Surveying and Estimate	
11	Cost Analysis	2	32	-	32	Quantity Surveying and Estimate	
	Total	**22**	**272**	**176**	**448**		

Non-Continuous Technical Associate's Degree in Software (Computer Programming)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	Computer Science Mathematics	3	48	-	48	
2	General Mathematics	3	48	-	48	
3	Computer Workshop 1	1	-	48	48	
4	Computer Workshop 2	1	-	48	48	Computer Workshop 1
	Total	8	96	96	192	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Basic Programming	3	32	32	64		
2	Object-Oriented Programming	3	32	32	64	Introductory Programming	
3	Data Structure	3	48	-	48	Introductory Programming	
4	Machine Structure and Language	2	32	-	32		Introductory Programming
5	Computer Networks	3	48	-	48	Computer Workshop 1	
6	Web Designing Principles	3	32	32	64	Introductory Programming	
	Total	17	214	96	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Visual Programming Languages	3	32	32	64	Object-oriented Programming	

2	Network Programming	3	32	32	64	Object-oriented Programming, Computer Networks	
3	Web Development	3	32	32	64	Web Designing Principles	
4	System Programming	3	32	32	64	Object-oriented Programming	
5	Database	3	32	32	64	Data Structure	
6	English for Specific Purposes	2	32	-	32	General English	
	Total	17	192	160	352		

Non-Continuous Technical Associate's Degree in Electricity (Electricity of Heavy Machinery)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	Applied Mathematics	3	48	-	48	
2	General Physics	1	16	-	16	
3	Physics Laboratory	1	-	32	32	
4	Physics of Electricity and Magnetism	2	32	-	32	General Physics
5	Laboratory of Physics of Electricity and Magnetism	1	-	32	32	Physics of Electricity and Magnetism
6	The Application of Computer its	2	16	48	64	
	Total	10	**112**	112	224	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electrical and Electronic Drawing	1	16	-	16		

2	Electrical and Electronic Drawing Workshop	1	-	64	64		Electrical and Electronic Drawing
3	Circuits and Electrical Measurement	3	48	-	48	Electric Physics and Magnetism Applied Mathematics	
4	Laboratory of Circuits and Electrical Measurement	1	-	64	64		Circuits and Electrical Measurement
5	Applied Electronics	2	32	-	32	Circuits and Electrical Measurement	
6	Applied Electronics Laboratory	1	-	64	64		Applied Electronics
7	Hydraulics	2	32	-	32		
8	Diesel Engine Technology	1	16	-	16		
9	Electrohydraulics	2	32	-	32	Hydraulics	
10	Hydraulics Laboratory	1	-	64	64		Electrohydraulics
11	Diesel Engine Workshop	1	-	64	64		Diesel Engine Technology
	Total	16	176	320	496		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electrical Systems of Heavy Machinery 1	2	32	-	32	Heavy Machinery 1	Applied Electronics
2	Laboratory of Electrical Systems of Heavy Machinery 1	1	-	64	64		Electrical Systems of Heavy Machinery 1
3	Electrical Systems of Heavy Machinery 2	2	32	-	32		
4	Laboratory of Electrical Systems of Heavy Machinery2	1	-	64	64		Electrical Systems of Heavy Machinery2
5	Heavy Machinery1	2	32	-	32		
6	Heavy Machinery2	2	32	-	32	Heavy Machinery1	
7	Instrumentation in Heavy Machinery	1	16	-	16	Applied Electronics	

8	Logic Circuits and Microprocessors	2	32	-	32	Applied Electronics	
9	Systems Control in Heavy Machinery	2	32	-	32	Applied Mathematics Applied Electronics	Instrument in Heavy Machinery
10	English for Specific Purposes	2	32	-	32	General English	
11	Technical Documents and Documentation	2	32	-	32		
12	Power Transfer	1	16	-	16	Hydraulics	
13	Power Transmission Workshop	1	-	64	64		
	Total	21	288	192	480		

Non-Continuous Technical Associate's Degree in Electricity - Industrial Electricity

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	The Application of ICT	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	Physics of Electricity and Magnetism	2	32	-	32	
3	Principles of Computer and Programming	2	32	-	32	
4	Computer Principles and Programming Workshop	1	-	48	48	
	Total	8	128	48	176	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Logic Circuits	2	32	-	32		

2	General Electric Workshop	1	-	48	48		
3	Logic Circuits Laboratory	1	-	32	32	Logic Circuits	
4	Applied Mathematics	2	32	-	32	General Mathematics	Electric Circuits
5	Electric Circuits	3	48	-	48	Physics of Electricity and Magnetism	
6	Electric Circuits Laboratory	1	-	32	32	Electric Circuits	
7	General Electronics	2	32	-	32	Electric Circuits	
8	General Electronics Laboratory	1	-	32	32	General Electronics	
9	Principles of Electrical Measurement and Sensors	2	32	-	32	General Electronics	
10	English for Specific Purposes	2	32	-	32	General English	
	Total	17	176	144	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Technical Drawing of Electricity	1	-	48	48		
2	Industrial Electronics	2	32	-	32	General Electronics	
3	Industrial Electronics Laboratory	1	-	32	32	-	Industrial Electronics
4	Principles of Lighting and Technical Wiring	2	32	-	32	-	
5	Industrial Electric Workshop	2	-	96	96	General Electric Workshop	
6	Relay and Protection	2	32	-	32	Transmission of Electrical Energy Distribution	
7	Special and DC Machines	2	32	-	32		AC and Trans Machines
8	AC and Trans Machines	3	48	-	48	Electrical Circuits	Special DC Machines
9	Coiling Workshop	1	-	48	48	AC Machines and Trans	-
10	Transmission of Electrical Energy Distribution	2	32	-	32		AC and Trans Machines

11	Laboratory of Electric Power Distribution Transfer	1	-	32	32		Electric Power Distribution Transfer Laboratory
12	Laboratory of Electric Machines	1	-	48	48		Ac Machines and Trans Special and DC Machines
13	PLC Workshop	2		96	96	Principles of Computer and Programming Logic Circuits	
	Total	22	240	400	640		

Non-Continuous Technical Associate's Degree in Welding Inspection

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Thermal Physics and Mechanics	2	32	-	32	
3	General Chemistry	2	32	-	32	
4	Technical Drawing	1	-	48	48	
5	Physics of Electricity	2	32	-	32	
	Total	9	128	48	176	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	Thermal Physics and Mechanics	

						General Mathematics	
2	Methods of Joining Materials	2	32	-	32		
3	Physical Properties and an Introduction to Materials	3	48	-	48	Thermal Physics and Mechanics	General Chemistry
4	Metallography Laboratory	1	-	32	32	Physical Properties and Recognition of Materials	
5	Principles of Welding Metallurgy	2	32	-	32	Physical Properties and Recognition of Materials Methods of Joining Materials	
6	Mechanical Properties	2	32	-	32	Physical Properties and Recognition of Materials	
7	Laboratory of Mechanical Properties					Mechanical Properties	
8	Safety and Health	2	32	-	32		
9	Qualitative Principles of Welding Evaluation	2	32	-	32	The last semester	
10	Principles and Standards of Quality Management	1	16	-	16		
	Total	18	256	64	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Welding Symbols and Map Reading	1	-	48	48	Technical Drawing	
2	Defects and their Causes	1	16	-	16	-	Principles of Welding Metallurgy
3	Visual Inspection	1	16	-	16	Defects and their Causes	
4	Visual Inspection Laboratory	1	-	32	32	Visual Inspection	
5	Penetrating Liquid Inspection	1	16	-	16	Defects and their Causes	
6	Laboratory of Inspection with Penetrating Fluids	1	-	32	32	Liquid Penetrating Inspection	

7	Inspection with Magnetic Particles	1	16	-	16	Defects and their Causes	
8	Inspection with Magnetic Particles Laboratory	1	-	32	32	Inspection with Magnetic Particles	
9	Ultrasonic Inspection	2	32	-	32	Defects and Its Causes	
10	Ultrasonic Inspection Laboratory	2	-	64	64	Ultrasound Inspection	
11	Radiographic Testing	2	32	-	32	Defects and their Causes	
12	Radiographic Testing Laboratory	2	-	64	64	Radiographic Testing	
13	Basic Inspection of Paint, Coating, and Abrasive Blasting	2	32	-	32	Defects and their Causes	
14	Statistical Quality Control	1	16	-	16	Principles and Standards of Quality Management	
15	Measurement Error Laboratory	1	-	32	32		
	Total	**20**	**176**	**304**	**480**		

Non-Continuous Technical Associate's Degree in Elevators and Escalators

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	General Physics	2	32	-	32	
3	Physics of Electricity	2	32	-	32	
	Total	7	112	-	**112**	

Table of Core Courses

#	Course Title		Hours	Prerequisite(s)	Corequisite(s)

		No. of Credits	Theoretical	Practical	Total		
1	Computer Programming	1	-	48	48		
2	Machinery and Manufacture Methods	2	32		32	General Physics	
3	Statics and Strength of Materials	3	48		48	General Mathematics	
4	General Designing	1	-	48	48		
5	General Mechanics Workshop	1	-	48	48		
6	Welding Principles Workshop	1		48	48		
7	Electric Circuits	3	48		48	General Physics General Mathematics	
8	General Electronics	3	48		48	Physics of Electricity	
9	General Electronics Laboratory	1	-	32	32		General Electronics
10	Electrical Drawing Workshop	1		48	48		
11	Control Circuits Workshop	1		48	48	Electric Circuits	
	Total	176	320	496			

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Technical English for Elevators and Escalators	2	32	-	32		
2	Electric Elevators	3	48	-	48	General Electronics	
3	Hydraulic Elevators	3	48	-	48	Statics and Strength of Materials	
4	Hydraulic Elevators Installation Workshop	1		48	48	-	Hydraulic Elevators
5	Principles of Elevator Installation	3	48	-	48	Principles of Escalator Installations Electric Elevators	
6	Principles of Escalator Installations	2	32	-	32	Electric Circuits	
7	Mechanical Components Installations Workshop	1	-	48	48	Hydraulic Elevator	

8	Electrical Components Installation Workshop	1	-	48	48	Electric Elevators	
9	Escalator Installations Workshop	1	-	48	48		
10	Principles of Maintenance and Repair Systems of Elevators and Escalators	3	48	-	48		
11	Workshop on Maintenance and Repair Systems of Elevators and Escalators	1	-	48	48		Principles of Maintenance and Repair Systems for Elevators and Escalators
	Total	21	256	240	496		

Non-Continuous Technical Associate's Degree in Metallurgy (Metals Testing)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	Physics of Light and Heat	2	32	-	32	
2	Physics of Light and Heat Laboratory	1	-	32	32	Physics of Light and Heat
3	Analytical Chemistry	2	32	-	32	
4	Analytical Chemistry Laboratory	1	-	32	32	Analytical Chemistry
	Total	6	64	64	128	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statistics and Probability	2	32	-	32		
2	Computer Engineering Principles	1	16	-	16		

3	Operations of Computer Engineering Principles	2	-	64	64		Computer Engineering Principles
4	Measurement and Calibration	1	16	-	16	Heat Treatment Laboratory	
5	Operations of Measurement and Calibration	1	-	48	48		Measurement and Calibration
6	Occupational Supervision and Safety	2	32	-	32		
7	Manufacture Methods	1	16	-	16		
8	Manufacture Methods Workshop	1	-	48	48		Manufacture Methods
9	Heat Treatment	1	16	-	16		
10	Heat Treatment Laboratory	2	-	64	64		Heat Treatment
11	Standards of Metals	2	32	-	32		Manufacture Methods
	Total	16	160	224	384		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Properties of Metals	1	16	-	16		
2	Properties of Metals Laboratory	2	-	64	64		Properties of Metals
3	English for Specific Purposes	2	32	-	32	General English	
4	Non-Destructive Testing 1	2	32	-	32		
5	Non-Destructive Testing Laboratory 1	2	-	64	64	Non-destructive Tests 1	
6	Non-Destructive Testing 2	2	32	-	32	Physics of Light and Heat Laboratory	
7	Non-Destructive Testing Laboratory 2	2	-	64	64		Non-destructive Tests 2
8	Mechanical Destructive Testing	2	32	-	32	Properties of Metals	
9	Mechanical Destructive Testing Laboratory	2	-	64	64		Mechanical Destructive Tests
10	Chemical Destructive Testing	2	32	-	32		
11	Chemical Destructive Testing Laboratory	2	-	64	64		Chemical Destructive Tests

12	Metallography	1	16	-	16	Properties of Metals	Chemical Destructive Tests
13	Metallography Laboratory	2	-	64	64		Metallography
14	Project	1	-	48	48		
	Total	25	192	432	624		

Non-Continuous Technical Associate's Degree in Ceramics (Laboratory)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	General Physics	2	32	-	32	General Mathematics
3	General Physics Laboratory	1	-	32	32	General Physics
4	Basic Ceramic Chemistry	1	16	-	16	-
5	General Chemistry Laboratory	1	-	32	32	Basic Ceramic Chemistry
	Total	8	96	64	160	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Raw Materials of Ceramics	2	32	-	32		
2	Raw Materials of Ceramics Workshop	1	-	64	64		Raw Materials of Ceramics
3	Process of Producing Ceramics (1)	2	32	-	32		Raw Materials of Ceramics
4	Process of Producing Ceramics Workshop (1)	1	-	64	64		Process of Producing Ceramics (1)
5	Process of Producing Ceramics (2)	2	32	-	32		

6	Process of Producing Ceramics Workshop (2)	1	-	64	64	Process of Producing Ceramics Workshop (1)	Process of Producing Ceramics (2)
7	Chemistry – Physics of Ceramics 1	2	32	-	32	General Chemistry of Ceramics and Laboratory	
8	Chemistry – Physics of Ceramics 2	2	32	-	32	Chemistry – Physics of Ceramic 1	
9	Kilns	2	32	-	32	Process of Producing Ceramics (2)	
10	The Application of Computer in Ceramics	2	16	32	48		
	Total	17	208	224	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Glass	2	32	-	32	Ceramic Chemistry - Physics 1	
2	Paints and Glaze	2	32	-	32	Principles of Glass	
3	Paint and Glaze Workshop	1	-	64	64	-	Paints and Glaze
4	Principles of Refractory	2	32	-	32	Process of Producing Ceramics (2)	
5	Principles of Refractory Workshop	1	-	64	64	Process of Producing Ceramics Workshop (2)	Principles of Refractory
6	Ceramics for Buildings	2	32	-	32	Process of Producing Ceramics (2)	
7	Construction Ceramics Workshop	1	-	64	64	Process of Producing Ceramics Workshop (2)	Construction Ceramics
8	Principles of Porcelains	2	32	-	32	Process of Producing Ceramics (2)	

9	Porcelains Principles Workshop	1	-	64	64	Process of Producing Ceramics Workshop (2)	Principles of Porcelain
10	Analytical Chemistry	1	16	-	16	General Ceramics and Laboratory Chemistry	
11	Ceramic Industries Laboratory	1	-	32	32	Process of Producing Ceramics Workshop (2)	Analytical Chemistry
12	Principles of Self-Setting Materials	1	16	-	16	Process of Producing Ceramics (2)	
13	Laboratory of Self-Setting Materials	1	-	32	32		Self-setting Materials
14	English for Specific Purposes	2	32	-	32	General English	
15	Models and Molds	2	-	96	96		
	Total	22	224	416	640		

Non-Continuous Technical Associate's Degree in IT - Internet and Wide Area Networks

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	Mathematics of Computer Science	3	48	-	48	
3	Computer Workshop	1	-	48	48	
	Total	7	96	48	144	

Table of Core Courses

#	Course Title		Hours	Prerequisite(s)	Corequisite(s)

		No. of Credits	Theoretical	Practical	Total		
1	Introductory Programming	3	32	32	64	-	
2	Computer Networks	3	48	-	48	Computer Workshop	
3	TCP / IP Concepts	3	48	-	48	Computer Networks	
4	Logic Circuits	2	32	-	32	Mathematics of Computer Science	
5	Principles of Network Security	3	48	-	48	Computer Networks	
6	Internet Service Providers	2	32	-	32	-	TCP / IP Concepts
7	An Introduction to Internet Service Workshop	1	-	48	48	Computer Workshop	Internet Service Providers
	Total	17	240	80	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Linux Workshop	1	-	48	48		Computer Workshop
2	Network Programming	3	32	32	64	Introductory Programming, Computer Networks	
3	An Introduction to and Configuring ISP	3	32	32	64	TCP / IP Concepts	
4	Internet Privacy and Security	2	32	-	32	Principles of Network Security	
5	Configuration of Network Routers	3	32	32	64	TCP / IP Concepts	
6	Technical English for Internet	3	48	-	48	General English	
7	Managing and Measuring Wide Area Networks	2	32	-	32	TCP / IP Concepts	
8	Workshop on Managing and Measuring Wide Area Networks	1	-	48	48		Managing and Measuring Wide Area Networks
9	Web Page Design Workshop	1	-	48	48	Introductory Programming	

10	Web Development Workshop	1	-	48	48	Web Page Design Workshop	
	Total	19	208	288	496		

Non-Continuous Technical Associate's Degree in Subway Security

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Professional Ethics	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	3	48	-	48	
2	General Physics	3	48	-	48	
3	Statistics and Probability	2	32	-	32	General Mathematics
4	General Chemistry	2	32	-	32	
	Total	10	160	-	160	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introduction to Subway Industry	2	32	-	32		
2	Statics and Strength of Materials	3	48	-	48	General Physics General Mathematics	
3	English for Specific Purposes	2	32	-	32		
4	Map Reading of Construction and Installations	2	16	48	64		
5	Principles of Occupational Safety and Health	2	32	-	32		
6	Harmful Factors in Workplace and Measurement Principles	3	32	48	80	Principles of Occupational	

						Safety and Health	
7	Rules and Regulations of Occupational Safety	2	32	-	32		
	Total	16	224	96	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Movement Safety	2	32	-	32	Introduction to Subway Industry	
2	Fire Prevention and Control in Subway	3	32	48	80	-	
3	Safety of High and Low Voltage Electricity	2	32	-	32	General Physics Principles of Electrical and Electronics	Harmful Factors in Workplace, and Measurement Principles
4	Railway Maintenance Safety	2	32	-	32		
5	Safety of Mechanical Machinery and Equipment	3	48	-	48		Harmful Factors in Workplace, and Measurement Principles
6	Principles of Electricity in Subway	2	32	-	32		
7	Safety in Subway Structures	2	32	-	32	Statics and Strength of Material	
8	Principles of Routing and Traffic	3	48	-	48		Communications, and Electrical Signals
9	Communications and Electrical Signals	2	32	-	32		Principles of Routing and Traffic
	Total	21	320	48	368		

Non-Continuous Technical Associate's Degree in Mining - Extraction

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	

3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite
			Theoretical	Practical	Total	
1	General Mathematics	2	32	-	32	
2	Technical Drawing	1	-	48	48	
3	General Physics	2	32	-	32	
4	General Physics Laboratory	1	-	32	32	
5	General Chemistry	2	32	-	32	
6	General Chemistry Laboratory	1	-	48	48	
	Total	9	96	128	224	

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Geology	2	32	-	32		
2	Geological Exploration	1	-	48	48	General Geology	General Geology
3	English for Specific Purposes	2	32	-	32	- -	General English
4	Machine Components	1	16	-	16	- -	
5	General Workshop	1	-	64	64	General Physics	-
6	Electricity Principles	1	16	-	16	-	Electricity Principles
7	Electricity Principles Workshop	1	-	48	48		-
8	Statics and Strength of Materials	2	32	-	32	General Physics	
9	Surveying	1	16	-	16	General Mathematics	
10	Surveying Operations	1	-	64	64	Surveying	
11	Rock Mechanics	2	32	-	32	Statics and Strength of Materials General Geology	
12	Mining Principles	2	32	-	32		General Geology

13	Cartography and Map Reading	1	-	48	48	General Geology	
	Total	18	208	272	480		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Mine Drilling	1	16	-	16		General Geology
2	Mine Drilling Workshop	1	-	48	48		Mineral Drilling
3	Mine Extraction Machines	1	16	-	16	Mining Principles	-
4	Mine Extraction Machines Workshop	1	-	48	48		Mine Extractions Machines
5	Mines Blasting	2	32	-	32	Mining Principles	-
6	Mine Blasting Workshop	1	-	48	48		Mines Blasting
7	Surface Mining Methods	2	32	-	32	Mining Principles	Mineral Drilling
8	Underground Mining Methods	2	32	-	32	Mining Principles	Mineral Drilling
9	Underground Mining Methods Workshop	1	-	64	64		Underground Mining Methods
10	Maintenance in Underground Mines	1	16	-	16	Rock Mechanics	-
11	Transportation in Underground Mining	2	32	-	32		Mine Extraction Machines
12	Underground Surveying	2	32	-	32	Surveying	Surveying Operation
13	Underground Surveying Workshop	1	16	-	16	Underground Surveying	Underground Surveying
14	Technical Services in Mines	1	-	64	64	Mine Drilling or Digging	
15	Workshop on Technical Services in Mines	1	16	-	16		Technical Services in Mines
16	Mine Safety Workshop	1	-	48	48	Safety and Health	Maintenance in Underground Mines
	Total	21	320	48	368		

Non-Continuous Technical Associate's Degree in Telecommunications (Data Communications)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48	Mathematics	
2	Physics of Electricity and Magnetism	2	32	-	32	Physics	
3	Physics of Electricity and Magnetism Laboratory	1	-	32	32	Physics of Electricity and Magnetism	
4	Applied Mathematics and Statistics	3	48	-	48		General Mathematics
	Total	9	128	32	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electricity Workshop	1	-	64	64		
2	Electric Circuits	3	48	-	48	Physics of Electricity and Magnetism	
3	Electric Circuits Laboratory	3	48	-	48		Electric Circuits
4	Applied Electronics	1	-	48	48	Electric Circuits	
5	Applied Electronics Laboratory	3	48	-	48		Applied Electronics
6	Logic Circuits	2	32		32		Applied Electronics
7	Logic Circuits Laboratory	1	-	32	32		Logic Circuits
8	Telecommunication Technology	3	48	-	48		Applied Electronics
9	Telecommunication Laboratory	1	-	48	48		Telecommunication Technology
	Total	16	176	240	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Communication and Data Transfer	2	32	-	32		
2	Computer Programming	2	32	-	32		
3	Computer Programming Workshop	1	-	64	64		Computer Programming
4	Equipment Systems of Data Communications	3	48	-	48		
5	Equipment Systems of Data Communication Workshop	1	-	64	64	Equipment Systems of Data Communications	
6	Installations Systems of Data Communications Workshop	1	-	64	64		
7	Networks Workshop	1	-	64	64		
8	Data Structures	2	16	48	64		Computer Programming
9	Network Operating Systems	2	32	-	32	Computer Programming	
10	Network Operating Systems Laboratory	1	-	48	48		Network Operating Systems
11	The Application of Software Packages	1		48	48		
12	An Introduction to National Telecommunication Networks	1	16	-	16		
13	Special Topics	2	32	-	32		
	Total	20	208	400	608		

Non-Continuous Technical Associate's Degree in Information and Communications Technology (ICT)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	۲	۳۲	–	۳۲	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	Physics of Electricity and Magnetism	2	32	-	32		
3	Computer Programming	2	16	48	64		
4	Applied Mathematics and Statistics	3	48	-	48	General Mathematics	
	Total	10	144	48	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electric Circuits	3	48	-	48	Physics of Electricity and Magnetism	
2	Electric Circuits Laboratory	1	-	48	48		Electric Circuits
3	Applied Electronics	3	48	-	48	Electric Circuits	
4	Applied Electronics Laboratory	3	48	-	48		Applied Electronics
5	Logic Circuits	2	32		32		Applied Electronics
6	Logic Circuits Laboratory	1	-	32	32		Logic Circuits
7	Telecommunication Technology	3	48	-	48		Applied Electronics
8	Telecommunication Laboratory	1	-	48	48		Telecommunicatio n Technology
9	Information Technology	1	-	48	48		
	Total	**16**	**176**	**224**	**400**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Switching and Signaling	2	32	-	32	Telecommunication Technology	
2	Optical Telecommunication Networks	2	32	-	32	Telecommunication Technology	
3	Introduction to GSM Networks	2	32	-	32	Telecommunication Technology	
4	Data Structures	2	16	48	64	Computer Programming	

5	Web Programming Workshop	2	-	96	96	Information Technology	
6	Databases	2	16	48	64	-	
7	Operating Systems of Network Management	2	32	-	32	Data Structures	
8	Laboratory of Operating Systems of Network Management	1	-	48	48	Operating Systems of Network Management	
9	Multimedia Environments	2	-	96	96		
10	Data Communications	2	16	48	64	Data Structures	
11	Project	2	-	96	96	After passing minimum 55 No. of Credits s	
	Total	**21**	**176**	**480**	**656**		

Non-Continuous Technical Associate's Degree in Mechanics (Mechanics of Industrial Installations)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making					
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
3	General Chemistry and Materials Science	3	48	-	48		
4	General Physics Laboratory	1	-	32	32		
	Total	10	144	32	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics and Strength of Materials	3	48	-	48	General Mathematics	
2	Strength of Materials Laboratory	1	-	32	32	-	
3	Thermodynamics	2	32	-	32	General Physics	

4	Thermodynamics Laboratory	1	-	32	32	-	
5	Fluid Mechanics	2	32	-	32	General Physics	
6	Fluid Mechanics Laboratory	1	-	32	32	-	
7	Electricity Principles	2	16	64	80	General Physics	
8	Technical Drawing 1	2	16	48	64	General Mathematics	
9	General Workshop	1	-	64	64		
10	Heat Transfer	2	32	-	32		
	Total	17	176	256	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32		
2	Principles of Corrosion Control	2	32	-	32	General Chemistry and Materials Science	
3	Manufacture Methods	2	32	-	32	General Chemistry and Materials Science	
4	Welding Workshop	1	-	64	64	-	
5	Introduction to Machine Components	2	32	-	32	Statics and Strength of Materials	
6	Control Systems of Installations	2	32	-	32	Electricity Principles	
7	Internal Thermal Motors	2	16	64	80	Thermodynamics Fluid Mechanics	
8	Installations and Projects	3	32	64	96		
9	Installations Workshop	2	-	96	96		General Workshop
10	Planning, Service, and Maintenance of Installations	2	16	48	64		Installations and Projects
	Total	20	224	336	560		

Non-Continuous Technical Associate's Degree in Automotive Mechanics

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	

1	Principles of Quality Control	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	The Application of ICT					
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Chemistry	2	32	-	32		
4	General Physics Laboratory	1	-	48	48	General Physics	
	Total	**7**	**96**	**48**	**144**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32	General English	
2	Statics	2	32	-	32	General Mathematics - General Physics	
3	Strength of Materials	2	32	-	32	Statics	
4	Thermodynamics	2	32	-	32	General Mathematics - General Physics	
5	Fluid Mechanics	2	32	-	32	General Mathematics - General Physics	
6	Hydraulics and Pneumatics	2	32	-	32	Thermodynamics Fluid Mechanics	
7	Hydraulics and Pneumatics Workshop	1	-	64	64	Thermodynamics Fluid Mechanics	Hydraulics and Pneumatics
8	Machine Components	2	32	-	32	Strength of Materials	
9	Machine Tools Workshop	1	-	64	64		Machine Components
10	CAD Principles and Drawing	2	-	128	128		
11	Welding Workshop	1	-	64	64		

	Total	19	224	320	544		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Power Transmission Technology	2	32	0	32		Machine Components
2	Power Transmission Workshop	1	-	64	64		Technology of Power Transmission Systems
3	Power Generation Technology	3	48	-	48	Thermodynamics	
4	Power Generation Workshop	2	-	128	128		Power Generation Technology
5	Principles of Automotive Electronics	1	16	-	16		
6	Principles of Automotive Electronics Workshop	1	-	64	64		Principles of Automotive Electronics
7	Engine Management Systems	2	32	-	32	Principles of Automotive Electronics	
8	Engine Management Systems Workshop	1	-	64	64		Engine Management Systems
9	Technology of Automotive Electrical Devices and Air Conditioning	2	32	-	32	Principles of Automotive Electronics	
10	Technology of Devices on Suspension, Steering, and Chassis	2	32	-	32	Statics	
11	Workshop on Technology of Devices on Suspension, Steering, and Chassis	1	-	64	64		Technology of Devices on Suspension, Steering,and Chassis
12	Technology of Brakes and Vehicle Dynamic Control	2	32	-	32	Principles of Automotive Electronics	
13	Workshop on Technology of Brake and Vehicle Dynamic Control	1	-	64	64		
	Total	21	224	448	672		

Non-Continuous Technical Associate's Degree in Architecture (Rural Architecture)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Report Making	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	Geometry of Landscapes	2	16	32	48		
3	Introductory Architecture Workshop	3	-	144	144		
	Total	7	48	176	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Architecture Workshop	3	-	144	144	Workshop on Introductory Architecture	
2	Introduction to Materials	2	32	-	32		
3	Buildings Details and Local Construction Techniques	2	32	-	32	Building Details	
4	Building Details	2	32	-	32	Introduction to Materials	
5	Statics and Strength of Materials	3	48	-	48	General Mathematics	
6	Environmental Conditions Control	2	32	-	32		
7	The Application of Architecture Software	2	16	48	64	Workshop on Introductory Architecture	
8	Rural Studies	3	32	48	80	Workshop on Introductory Architecture	
9	English for Specific Purposes	2	32	-	32		
	Total	**21**	**256**	**240**	**496**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Rural Architecture Design Workshop 1	3	-	144	144	Architecture Workshop	
2	Rural Architecture Design Workshop 2	3	-	144	144	Rural Architecture Design Workshop 1	
3	Surveying	2	16	48	64		
4	Introduction to Upstream Plans and Rural Construction Regulations	2	16	48	64	Architecture Workshop	
5	Quantity Surveying and Estimate	2	32	-	32		
6	Principles of Supervising Construction Activities	2	32	-	32	Architecture Workshop	
7	An Introduction to Damages to Rural Buildings and Prevention Methods	2	16	48	64		
8	An Introduction to National Regulations and Rural Infrastructures	2	32	-	32		
	Total	**18**	**176**	**384**	**560**		

Non-Continuous Technical Associate's Degree in Telecommunications - Switching Centers

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	Physics of Electricity and Magnetism	2	32	-	32		
3	Physics of Electricity and Magnetism Laboratory	1	-	32	32		Physics of Electricity and Magnetism
4	Applied Mathematics and Statistics	3	48	-	48	General Mathematics	

	Total	**9**	**128**	**32**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electricity Workshop	1	-	64	64		
2	Electric Circuits	3	48	-	48	Physics of Electricity and Magnetism	
3	Electric Circuits Laboratory	1	-	48	48		Electric Circuits
4	Applied Electronics	3	48	-	48	Electric Circuits	
5	Applied Electronics Laboratory	1	-	48	48		Applied Electronics
6	Logic Circuits	2	32		32		Applied Electronics
7	Logic Circuits Laboratory	1	-	32	32		Logic Circuits
8	Telecommunications Technology	3	48	-	48		
9	Telecommunications Laboratory	1	-	48	48		Telecommunication Technology
	Total	16	176	240	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	An Introduction to National Telecommunication Networks	1	16	-	16		
2	Switching Principles	2	32	-	32		Logic Circuits
3	Switching Principles Laboratory	1	-	32	32		Switching Principles
4	Signaling Principles	2	32	-	32	Switching Principles	
5	Principles of Microcomputers Laboratory	1	-	48	48	Switching Principles Laboratory	
6	Traffic Engineering	2	32	-	32	Switching Principles	
7	Fixed Switches	2	32	-	32	Switching Principles	
8	Switches Workshop	1	-	64	64		Fixed Switches

9	Mobile Switches	2	32	-	32	Switching Principles	
10	Maintenance and Operations of Fixed Switches	2	-	96	96		Fixed Switches
11	Maintenance and Operations of Mobile Switches	2	-	96	96		Mobile Switches
12	The Application of Software Packages	1	-	48	48		
13	Special Topics	**2**	**32**	**-**	**32**		
	Total	**21**	**208**	**384**	**592**		

Non-Continuous Technical Associate's Degree in Wood Industries - Furniture Manufacture

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Professional Ethics	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	Basic Mathematics	2	32	-	32		
2	Applied Physics	2	32	-	32		
3	Applied Chemistry	1	-	32	32		Physics of Electricity and Magnetism
4	General Workshop	3	48	-	48	General Mathematics	
5	Foundations of Visual Arts						
	Total	**9**	**128**	**32**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Raw Materials of Woodworking (Types of Wood, Processing, Maintenance)	2	32	-	32		Applied Chemistry
2	Human Ergonomics	2	32	-	32		Applied Physics
3	National and International Styles of Furniture	2	32	-	32	Foundations of Visual Arts	
4	Occupational Health and Safety	2	32	-	32		
5	English for Specific Purposes	2	32	-	32	General English	
6	After-Sales Services	2	32	-	32	Professional Ethics	
7	Technical Drawing and Map Reading	1	-	48	48		Basic Mathematics
8	The Application of Computer	1	-	48	48		
	Total	14	192	96	288		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Packaging and Shipping Services	2	32	-	32		
2	Tools and Machines of Woodworking and Wood Carving	1	-	48	48		
3	Machining	1	-	48	48	Drawing and Map Reading	
4	Assembly Workshop	1	-	48	48		
5	Wood Carving and Marquetry Workshop	2	-	96	96		Tools and Machines of Woodworking and Wood Carving
6	An Introduction to Paint and Paint Machines	2	32	-	32	Applied Chemistry	
7	Paint Workshop	1	-	48	48		Paint Recognition and Paint Machines
8	Wood Finishing ,Painting, and Polishing	2	32	-	32		
9	Wood Finishing, Painting and Polishing Workshop	2	-	96	96		Wood Finishing, Painting, and Polishing
10	Upholstery	2	32	-	32		

11	Upholstery Finishing Procedure Workshop	2	32	-	32		Upholstery
12	Upholstery Workshop	1	-	48	48		Upholstery
13	Upholstery Instruments and Machinery	2	32	-	32		Upholstery
	Total	20	160	480	640		

Non-Continuous Technical Associate's Degree in Machinery

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	Mechanical Physics	2	32	-	32		General Mathematics
3	Technical Drawing 1	2	-	64	64		
4	Computer Design (CAD)	1	16	-	16	Technical Drawing 1	
5	Computer Design (CAD) Laboratory	1	-	32	32		
	Total	***9***	***96***	***96***	***192***		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Mechanics	2	32	-	32		
2	Metallurgy	2	32	-	32		
3	English for Specific Purposes	2	32	-	32		
4	Technical Drawing 2	2	-	64	64	Technical Drawing 2	

5	Industrial Electricity	2	32	-	32	Industrial Mechanics	
6	Industrial Electricity Laboratory	1	-	48	48		Industrial Electricity
7	Welding Workshop	1	-	48	48		
8	Casting Principles Workshop	1	-	64	64		Metallurgy
9	Heat Treatment Workshop	1	-	48	48		Metallurgy
10	Metalworking Workshop	1	-	64	64		
	Total	*15*	*128*	*336*	*464*		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Universal Machinery 1	2	32	-	32	Metalworking Workshop	
2	Universal Machinery Workshop 1	2	-	96	96		Universal Machinery 1
3	Universal Machinery 2	2	32	-	32	Universal Machinery Workshop 1	
4	Universal Machinery Workshop 2	2	-	96	96		Universal Machinery 2
5	Universal Machinery 3	3	32	48	80	Universal Machinery 2	
6	Manufacturing Machinery	2	32	-	*32*	Universal Machinery 2	
7	Measurement and Tolerance Systems	2	16	48	*64*	Universal Machinery 1	
8	Jigs and Fixtures Design	2	16	48	64	Universal Machinery 2	
9	Manufacture Methods	2	32	-	32	Universal Machinery2	
10	Maintenance, Repair, and Installation of Machinery	2	-	96	96	Universal Machinery3	Manufacturing Machinery
11	Numerical Control Machines	2	16	48	64		
	Total	*23*	*208*	*480*	*688*		

Non-Continuous Technical Associate's Degree in Home Appliances

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	Physics (Mechanics and Heat)	2	32	-	32		General Mathematics
2	General Mathematics	3	48	-	48		
3	Physics of Electricity	2	32	-	32	Physics (Mechanics and Heat)	
4	Statistics and Probability	2	32	-	32		
	Total	**9**	**144**	**-**	**144**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Drawing Workshop	2	-	96	96		
2	Manufacturing Methods of Home Appliances	2	32	-	32	Machinery Workshop	Industrial Drawing Workshop
3	Statics and Strength of Materials	3	48	-	48	Physics (Mechanics and Heat)	
4	Workshop on The Application of Electricity in Home Appliance	2	-	96	96	Physics of Electricity	
5	Work and Time Evaluation	2	32	-	32	-	Manufacturing Methods of Home Appliances
6	Principles of Thermodynamics and Heat Transfer	2	32	-	32	Physics (Mechanics and Heat)	
7	Principles of Dynamics and Vibrations	2	32	-	32	Physics (Mechanics and Heat)	

8	Machinery Workshop	1	-	48	48		
	Total	16	176	240	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Project Control	2	32	-	32	Statistics and Probability	
2	Measurement and Calibration Systems	2	32	-	32	Manufacturing Methods of Home Appliance, Industrial Drawing Workshop	
3	Laboratory of Measurement and Calibration Systems	1	-	32	32	-	Measurement and Calibration Systems
4	The Application of Systems in Home Appliances	3	48	-	48	Principles of Thermodynamics and Heat Transfer, Principles of Dynamics, and Vibrations	
5	Planning and Inventory Control in Home Appliances	2	32	-	32	General Mathematics	Statistics and Probability
6	Planning, Maintenance, and Repair	2	32	-	32	Statistics and Probability	
7	Human Factors Engineering	2	32	-	32	Work and Time Evaluation	
8	A Workshop on the Application of Computer in Home Appliances	2	-	96	96	-	
9	Home Appliances Workshop	2	-	96	96	Manufacturing Methods of Home Appliances	
10	Home Appliances Troubleshooting and Repair Workshop	2	-	96	96	The Application of Systems in Home Appliances	
11	Command Systems and Applied Control	2	32	-	32	Principles of Dynamics and Vibrations Workshop on The Application of Electricity in Home Appliance	

	Total	22	240	320	560		

Non-Continuous Technical Associate's Degree in Quality Control of Mechanical Components

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Chemistry	2	32	-	32		
4	Statistics and Probability	2	32	-	32	General Mathematics	
	Total	**8**	**128**	**-**	**128**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics and Strength of Materials	3	48	-	48		
2	Principles of Materials Science	2	32	-	32		
3	Casting Workshop	1	-	48	48	Industrial Drawing	
4	Welding and Joining Materials Workshop	2	-	96	96		
5	The Application of Computer	2	16	48	64		
6	Mechanical Properties of Materials	2	32	-	32		
7	Machine Components	2	32	-	32		
	Total	**14**	**144**	**240**	**384**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Measuring Tools and Equipment	2	32	-	32	Industrial Drawing	
2	Measuring Tools Workshop	1	-	48	48	-	Measuring Tools and Equipment
3	Inspection and Quality Control	2	32	-	32	Statistics and Probability	
4	Quality Control and Inspection Project	1	-	48	48	-	Inspection and Quality Control
5	Statistical Process Control	2	32	-	32	Statistics and Probability	
6	Statistical Process Control Project	1	-	48	48		
7	Level Completion	2	32	-	32	Principles of Materials Science	
8	Quality Instruments	2	32	-	32	Inspection and Quality Control	
9	Quality Instruments Project	1	-	48	48		Quality Instruments
10	Mechanical Properties of Materials Laboratory	1	-	48	48	Mechanical Properties of Materials	
11	Non-destructive Testing	2	-	64	64	General Chemistry	
12	Industrial Drawing	2	-	96	96		
13	Machining	2	16	64	80	Industrial Drawing	
14	English for Specific Purposes	2	32	-	32	General English	
15	Manufacture Methods	2	32	-	32	Principles of Materials Science	
	Total	**25**	**240**	**464**	**704**		

Non-Continuous Technical Associate's Degree in Control

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Entrepreneurship	2	32	-	32	

	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	Physics of Electricity and Magnetism	2	32	-	32		
	Total	**7**	**112**	**-**	**112**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Applied Mathematics	2	32	-	32	General Mathematics	
2	English for Specific Purposes	2	32	-	32	General English	
3	Map Reading and Electrical Drawing	1	-	48	48		
4	Electricity and Command Circuits Workshop	1	-	64	64	Map Reading and Electrical Drawing	
5	Electric Circuits	3	48	-	48	General Mathematics	Applied Mathematics
6	Electric Circuits Laboratory	1	-	48	48	Electric Circuits	
7	Electronics	3	48	-	48		Electric Circuits
8	Electronics Laboratory	1	-	48	48	Electronics	
9	Electric Machines	3	48	-	48	Electric Circuits	
10	Electric Machines Laboratory	1	-	48	48	Electric Machines	
	Total	**18**	**208**	**256**	**464**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Measurement of Electrical and Non-Electrical Quantities	2	32	-	32		
2	Measurement of Electrical and Non-Electrical Quantities Laboratory	1	-	48	48		Measurement of Electrical and Non-Electrical Quantities
3	Logic Circuits	2	32	-	32	Electronics	

4	Logic Circuits Laboratory	1	-	48	48	Logic Circuits	
5	Microprocessors	2	32	-	32	Logic Circuits	
6	Microprocessors Laboratory	1	-	48	48		Microprocessors
7	Principles of Control Systems	2	32	-	32		
8	Documentation in Control	2	32	-	32	Principles of Control Systems	
9	Industrial Control Systems	2	32	-	32	Documentation in Control	
10	Industrial Control Systems Laboratory	1	-	48	48		Industrial Control Systems
11	Programmable Relays	1	16	-	16	Logic Circuits Laboratory	
12	Programmable Relays Laboratory	1	-	48	48		
13	Industrial Data Control	1	16	-	16		Programmable Relays Laboratory
14	Industrial Data Control Laboratory	1	-	48	48		Industrial Data Control
15	Project Control	2	-	96	96		
	Total	**20**	**224**	**288**	**512**		

Non-Continuous Technical Associate's Degree in Video Game Development

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Entrepreneurship	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	Mathematics of Computer Science	2	32	-	32		
2	Mechanical Physics	2	32	-	32		
3	Analytical Geometry and Linear Algebra of GameDevelopment	2	32	-	32	Mathematics of Computer Science	

4	General Computer Workshop	1	-	48	48		
	Total	7	96	48	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Style Studies, and History of Video Games	2	16	48	64		
2	Foundations of Visual Arts	2	16	48	64		
3	The History of Arts	2	32	-	32		
4	An Introduction to Culture of Iran and other Nations	2	32	-	32		
5	Video Game Production Pipeline	3	32	48	80		
6	Software Development Methodologies	3	32	48	80		
7	Principles and Concepts of Video Game Development 1	3	32	48	80		
	Total	17	192	240	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Principles and Concepts of Object-Oriented Programming (1)	3	32	48	80		
2	Computer Workshop (3Dmax, ZBrush, Photoshop)	1	-	64	64	Computer Workshop	
3	Principles and Concepts of Video Game Development 2	3	32	48	80	Principles and Concepts of Video Game Development 1	
4	Object-Oriented Programming Principles (2)	3	32	48	80	Principles of Object-oriented Programming (1)	
5	Principles of Video Games Programming	3	32	48	80		
6	Video Games Development with Ready Games Engine(1)	3	32	48	80	Principles and Concepts of Video Games Development 1 Principles of Object-oriented Programming (1)	
7	Video Games Development with Ready Game Engine(2)	3	32	48	80	Video Games Development with Ready Game Engine(1)	
8	Algorithm Designs and Structures	2	16	48	80		

9	English for Specific Purposes	2	32	-	32	General English	
	Total	23	240	400	640		

Non-Continuous Technical Associate's Degree in Telecommunication (Cable and Optical Fiber)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Entrepreneurship	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	Physics of Electricity and Magnetism	2	32	-	32		
3	Physics of Electricity and Magnetism Laboratory	1	-	32	32		Physics of Electricity and Magnetism
4	Applied Mathematics and Statistics	3	48	-	48	General Mathematics	
5	General Workshop	1	-	64	64		
	Total	10	128	96	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electricity Workshop	1	-	64	64		
2	Electric Circuits	3	48	-	48	Physics of Electricity and Magnetism	
3	Electric Circuits Laboratory	1	-	48	48	Electric Circuits	
4	Applied Electronics	3	48	-	48	Electric Circuits	
5	Applied Electronics Laboratory	1	-	48	48	Applied Electronics	
6	Logic Circuits	2	32		32	-	Applied Electronics

7	Logic Circuits Laboratory	1	-	32	32	Logic Circuits	
8	Telecommunication Technology	3	48		48		Applied Electronics
9	Telecommunication Laboratory	1	-	48	48		Telecommunication Technology
	Total	16	176	240	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	National Telecommunication Networks	1	16	-	16		
2	Transmission Lines	2	32	-	32	Electric Circuits	
3	Installation of Cable Networks	1	16	-	16		
4	Cable Networks Installation Workshop	2		96	96		Installations of Cable Networks
5	Telephone Lines Designing	3	48	-	48		Telecommunication Technology
6	The Application of Software Packages	1	-	64	64		
7	Principles of Closure and Maintenance of Optical Fiber	2	32	-	32		Installation of Cable Networks
8	Articulation Workshop	1	-	64	64		Installations of Cable Networks
9	Principles of Optical Fiber	2	32	-	32		
10	Optical Fiber Workshop	1		64	64		Principles of Optical Fiber
11	Gas Control	1	16	-	16		
12	Gas Control Laboratory	1		48	48		
13	Special Topics	2	32	-	32		
	Total	20	224	336	560		

Non-Continuous Technical Associate's Degree in Information Technology (IT) – Media

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	

3	Professional Ethics	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	Mathematics of Computer Science	3	48	-	48		
2	General Mathematics	3	48	-	48		
3	General Physics	2	32	-	32		Physics of Electricity and Magnetism
4	Computer Workshop	1	-	64	64	General Mathematics	
	Total	9	128	64	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introduction to Broadcast Technology	2	32	-	32		
2	Electric Circuits	3	48	-	48	General Mathematics	
3	Electric Circuits Laboratory	1	-	48	48		Electric Circuits
4	Digital Circuits Workshop	1	-	64	64	Electric Circuits	
5	Computer Networks Workshop	1	-	64	64		
6	Principles of Digital Television	2	32	-	32	Introduction to Broadcast Technology	
7	Computer Configuration Workshop	1	-	48	48	Digital Circuits Workshop	
8	Digital Processors Workshop	1	-	64	64		
9	English for Specific Purposes	2	32	-	32	General English	
	Total	14	144	288	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Production in Radio and Television	2	32	-	32		

2	Media Information Technology	3	48	-	48		
3	Graphics, Animation, and Computer Edition Workshop	1	-	64	64	Computer Workshop	
4	Computer Programming Workshop	1	-	64	64	Computer Workshop	
5	User Operating Systems	2	32	-	32	Computer Networks Workshop	
6	User Operating Systems Workshop	1	-	48	48		Operating System User
7	Internet Workshop	1	-	64	64	Computer Networks Workshop	
8	Server Operating Systems 1	3	48	-	48	User Operating System	
9	Server Operating Systems Workshop 1	1	-	48	48		Server Operating System 2
10	Server Operating Systems 2	2	32	-	32	User Operating System	
11	Server Operating System Workshop 2	1	-	48	48		Network Security
12	Network Security	2	32	-	32		
13	Network Security Workshop	1	-	48	48		
14	Web Page Design Workshop	1	-	64	64	Internet Workshop	
15	Acoustics 1	2	32	-	32	General Mathematics	
	Total	24	256	448	704		

Non-Continuous Technical Associate's Degree in Textile Industries (Manufacture of Machine-woven Carpets)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	The Application of Statistics and Probability in Machine-woven Carpets	2	32	-	32		
2	Structure of Polymer Materials	2	32	-	32		
3	An Introduction to Arts and the History of Iranian and World Carpets	2	32	-	32		
4	Principles of Electricity Workshop	1	-	64	64		
5	General Mathematics	2	32	-	32		
	Total	9	128	64	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Manufacture Process of Machine-woven Carpets	2	32	-	32		
2	Map Reading on Machines	2	32	-	32		
3	Map Reading on Machines Workshop	1	-	48	48		Map Reading on Machine
4	Chemistry of Dyes and Carpet Dying	2	32	-	32	Structure of Polymer Materials	
5	Workshop on Chemistry of Dyes and Carpet Dying	1	-	48	48		Chemistry of Dye, and Carpet Dying
6	Fibers and Raw Materials Science	2	32	-	32		
7	Fibers and Raw Materials Science Laboratory	1	-	32	32		Fibers and Raw Materials Science
8	Machinery in Machine-woven Carpets	2	32	-	32	Electricity Principles Workshop	
9	Marketing and E-commerce	2	32	-	32		
	Total	15	192	128	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Repair and Maintenance of Machinery in Machine-woven Carpets	1	16	-	16	Electrical Principles Workshop	

2	Workshop on Machinery Repair and Maintenance in Machine-woven Carpets	1	-	48	48		Repair and Maintenance of Machinery in Machine-woven Carpets
3	Weaving Design on Machines	2	32	-	32	Machinery in Machine-woven Carpets	
4	Weaving Design on Machines Workshop	2	-	96	96		Weaving Design on Machines
5	English for Specific Purposes	2	32	–	32	General English	
6	Machine-woven Carpets Manufacture Methods; and Types of Weaving	2	32	-	32	Fibers and Raw Materials Science	
7	Workshop on Machine-woven Carpets Manufacture Methods; and Types of Weaving	2	-	96	96		Machine-woven Carpets Manufacture Methods; and Types of Weaving
8	The Application of Computer in Weave and Manufacture of Machine-woven Carpets	1	--	64	64		
9	The Application of Computer in Design of Machine-woven Carpets	1	--	64	64		
10	Finishing Procedure of Machine -woven Carpets	1	16	-	16		
11	Workshop on Finishing Procedure of Machine-woven Carpets	2	-	96	96		Finishing Procedure of Machine-woven Carpets
12	Workshop on Machine -woven Carpets Restoration	2	-	96	96	Finishing Procedure of Machine-woven Carpets Fibers and Raw Materials Science	
13	Quality Control of Machine-woven Carpets	2	32	-	32	Finishing Procedure of Machine-woven Carpets	

14	Laboratory of Quality Control of Machine-woven Carpets	1	-	32	32		Quality Control of Machine-woven Carpets
15	Packaging and Warehousing	1	16	-	16		
	Total	23	176	592	768		

Non-Continuous Technical Associate's Degree in Mining (Minerals Processing)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	Technical Drawing	1	-	48	48		
3	General Physics	2	32	-	32		
4	General Physics Laboratory	1	-	32	32		
5	General Chemistry	2	32	-	32		
6	General Chemistry Laboratory	1	-	48	48		
	Total	9	96	128	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Geology	1	16	-	16		
2	Mineralogy	2	32	-	32		General Geology
3	Mineralogy Laboratory	1	-	32	32		Mineralogy
4	Lithology	1	16	-	16		Mineralogy
5	English for Specific Purposes	2	32	-	32	General English	
6	General Workshop	1	-	64	64		
7	Principles of Industrial Electricity	1	16	-	16	General Physics	

8	Statics and Strength of Materials	2	32	-	32		General Physics
9	Fluid Mechanics	2	32	-	32		
10	Analytical Chemistry	2	32	-	32	General Chemistry	
11	Analytical Chemistry Laboratory	1	-	32	32		Analytical Chemistry
	Total	16	208	128	336		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Mineralization	1	16	-	16		Mineralogy - General Geology
2	Crushing and Grading	2	32	-	32	Statics and Strength of Materials	Principles of Mineralization
3	Crushing and Grading Laboratory	1	-	32	32		Crushing and Grading
4	Mineralization Gravity Methods	1	16	-	16	Principles of Mineralization	Crushing and Grading
5	Mineralization Gravity Methods Workshop	1	-	48	48		Mineralization Gravity Methods
6	Coal Preparation and Industrial Minerals Processing	2	32	-	32	Principles of Mineralization	-
7	Workshop on Coal Preparation and Industrial Minerals Processing	1	-	48	48		Coal Preparation and Industrial Minerals Processing
8	Flotation	1	16	-	16	Fluid Mechanics Principles of Mineralization	Crushing and Grading
9	Flotation Laboratory	1	-	32	32	-	Flotation
10	Hydrometallurgy	1	16	-	16	Fluid Mechanics Principles of Mineralization	Crushing and Grading
11	Hydrometallurgy Laboratory	1	-	32	32	-	Hydrometallurgy
12	Side Operations of Mineral Processing	2	32	-	32	Gravity Mineralization Methods	Flotation
13	Troubleshooting of Minerals Processing Systems and Machines	1	-	48	48	-	Flotation - Gravity Mining Methods

14	New Methods of Mineralization	1	16	-	16	Principles of Mineralization	Gravity Mineralization Methods
15	Laboratory of New Methods of Mineralization	1	-	32	32		New Methods of Mineralization
16	Metallic Minerals Processing	1	16	-	16	Principles of Mineralization	
17	Metallic Minerals Processing Workshop	1	-	48	48		Metallic Minerals Processing
18	Sampling and Measurement Workshop	1	-	48	48	Principles of Mineralization	
	Total	21	192	368	560		

Non-Continuous Technical Associate's Degree in Mining (Building Materials Processing)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Principles of Control and Quality	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
6	Electricity Laboratory	1	-	32	32	General Physics Laboratory	
	Total	**9**	**96**	**96**	**192**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	General Geology	1	16	-	16		
2	General Geology Laboratory	1	-	32	32		General Geology
3	Crystallography	2	32	-	32		
4	Crystallography Laboratory	1	-	32	32		Crystallography
5	Minerals and Stones	2	32	-	32	General Geology	
6	Mining and Stone Laboratory	1	-	32	32		Minerals and Rocks
7	Statics and Strength of Materials	2	32	-	32	General Physics	
8	General Workshop	1	-	48	48		
9	Rock Mechanics	2	32	-	32	Statics and Strength of Materials	
10	Rock Mechanics Laboratory	1	-	32	32		Rock Mechanics
	Total	**15**	**160**	**176**	**336**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	A Workshop on the Application of Computer in Building Stones Processing	1	-	48	48		
2	Stone Economics	2	32	-	32		
3	Exploration of Building Stones	2	32	-	32	Minerals and Stones	
4	Methods of Building Stones Processing	2	32	-	32		Minerals and Stones
5	Technology of Building Stones Extraction	2	32	-	32	General Geology	
6	A Workshop on Technology of Building Stones Extraction	1	-	48	48		Extraction Technology of Building Stones
7	Building Stones Processing Technology	2	32	-	32		
8	Workshop on Maintenance and Repair of Building Stones Processing Machinery	3	-	144	144	Building Stones Processing Technology	
9	Processing Workshop	2	-	96	96		Methods of Processing Building Stones

10	Principles of Marketing and Sales of Processed Stones	2	32	-	32		
11	Standards of Building Stones	2	32	-	32		
12	English for Specific Purposes	2	32	-	32	General English	
	Total	**23**	**256**	**336**	**592**		

Non-Continuous Technical Associate's Degree in Mining (Decorative Stones Processing)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
6	Electricity Laboratory	1	-	32	32	General Physics Laboratory	
	Total	**9**	**96**	**96**	**192**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Geology	1	16	-	16		
2	General Geology Laboratory	1	-	32	32		General Geology
3	Crystallography	2	32	-	32		
4	Crystallography Laboratory	1	-	32	32		Crystallography

5	Minerals and Stones	2	32	-	32	General Geology	
6	Mining and Stone Laboratory	1	-	32	32		Minerals and Stones
7	Technical Drawing	2	32	-	32		
8	Statics and Strength of Materials	2	32	-	32	General Physics	
9	Rock Mechanics	2	32	-	32	Statics and Strength of Materials	
10	Rock Mechanics Laboratory	1	-	32	32		Rock Mechanics
	Total	**15**	**160**	**176**	**336**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	A Workshop on the Application of Computer in Decorative Stones Processing	1	-	48	48		
2	Exploration of Decorative Stones					Minerals and Stones	
3	Technology of Decorative Stones Extraction	2	32	-	32	General Geology	
4	Workshop on Technology of Decorative Stones Extraction	1	-	48	48		Technology of Decorative Stones Extraction
5	Methods of Decorative Stones Processing	2	32	-	32		
6	Technology of Decorative Stones Processing	2	32	-	32	Minerals and Stones	
7	A Workshop on Maintenance and Repair of Decorative Stones Processing Machinery	3	-	144	144		
8	Principles of Marketing and Sales of Processed Decorative Stones	2	32	-	32		
9	Foundations of Visual Arts	1	16	-	16	Technical Drawing	
10	Foundations of Visual Arts Workshop	1	-	64	64	Technical Drawing	
11	Decorative Stone Processing Workshop (1)	2	-	96	96		

12	Decorative Stone Processing Workshop (2)	2	-	96	96	Decorative Stone Processing Workshop (1)	
13	English for Specific Purposes	2	32	-	32	General English	
	Total	23	208	496	704		

Non-Continuous Technical Associate's Degree in Food Industries (Gaz Production)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Professional Ethics	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Chemistry	2	32	-	32		
2	General Chemistry Laboratory	1	-	32	32		General Chemistry
3	General Mathematics	2	32	-	32		General Physics
4	General Physics	2	32	-	32		
5	General Physics Laboratory	1	-	32	32		General Physics
6	Biology; Medicinal and Edible Plants	1	16	-	16		
7	The Application of Computer Workshop	1	-	48	48		
	Total	10	112	112	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Analytical Chemistry	2	32	-	32	General Chemistry	
2	Analytical Chemistry Laboratory	1	-	32	32		Analytical Chemistry
3	Organic Chemistry	2	32	-	32	General Chemistry	

4	Food Microbiology	2	32	-	32		
5	Food Microbiology Laboratory	2	-	64	64	Food Microbiology	
6	Food Chemistry	1	16	-	16	Organic Chemistry	
7	Food Chemistry Laboratory	1	-	32	32		Food Chemistry
8	Food and Nutrition	2	32	-	32		
9	Quality Control of Production Processes	2	32	-	32		
10	Domestic and Foreign Standards	2	32	-	32		
	Total	17	208	128	336		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Gaz Ingredients	1	16	-	16		
2	Gaz Ingredients Laboratory	1	-	32	32		Gaz Ingredients
3	Gaz Production Process	2	32	-	32		
4	Supplements and Additives Production	2	32	-	32		Gaz Production Process
5	Machinery of Gaz Production Line	2	32	-	32		
6	English for Specific Purposes	2	32	-	32	General English	
7	Gaz Production Process Workshop	2	-	96	96		
8	Supplements and Additives Production Workshop	2	-	96	96	Supplements and Additives Production	
9	Machinery of Gaz Production Line Workshop	2	-	96	96	Production Machinery	
10	Supply, Maintenance, and Storage of Goods	2	32	-	32		
11	Marketing and Sales Workshop	1	-	48	48		
12	Biological Pollution Control	1	16	-	16		
	Total	23	208	496	704		

Non-Continuous Technical Associate's Degree in Food Industries (Confectionary)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	

1	Principles of Supervision	2	32	-	32	
2	The Application of Information Technology in Communication	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Coerequisite	Prerequisite(s)
			Theoretical	Practical	Total		
1	General Chemistry	2	32	-	32		
2	General Chemistry Laboratory	1	-	32	32		General Chemistry
3	Biology	1	16	-	16		
4	General Physics	1	16	-	16		
5	General Physics Laboratory	1	-	32	32		General Physics
6	Statistics and Mathematics	2	32	-	32		
	Total	7	80	64	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Biochemistry	2	32	-	32	General Chemistry	
2	Organic Chemistry	2	32	-	32	General Chemistry	
3	Organic Chemistry Laboratory	1	-	32	32	General Chemistry and General Chemistry Laboratory	
4	Physical Chemistry	1	16	-	16	General Chemistry	
5	Analytical Chemistry Laboratory	1	-	48	48	General Chemistry and General Chemistry Laboratory	
6	General Microbiology	1	16	-	16	Biology	
7	General Microbiology Laboratory	1	-	48	48	Biology	

8	Health and Poisoning in Confectionery	1	16	-	16		
9	Nutrition and Principles of Metabolism	2	32	-	32		
10	Principles of Food Preservation	1	16	-	16		General Microbiology
11	Analytical Chemistry	2	32	-	32		General Microbiology
	Total	15	192	128	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Food Chemistry	3	48	-	48	Biochemistry	
2	Food Microbiology	2	32	-	32	General Microbiology	
3	Food Microbiology Laboratory	1	-	48	48	General Microbiology and General Microbiology Laboratory	
4	Principles of Quality Control	2	32		32	Food Chemistry	
5	Quality Control Laboratory	1	-	48	48	Food Chemistry	
6	Laboratory and Analysis of Raw Materials	2	-	96	96	Food Chemistry	
7	English for Specific Purposes	1	16	-	16	General English	
8	Production Process 1 (Flour Product)	2	32	-	32	Raw Materials	
9	Production Process 2 (Non-Flour Product)	2	32	-	32	Raw Materials	
10	Process Machinery1	2	32	-	32	Production Process 1 (Flour)	
11	Process Machinery2	2	32	-	32	Production Process 1 (Non-Flour)	
12	Raw Materials	3	48	-	48	Food Chemistry	
13	Additives	1	16	-	16		
14	Machinery Maintenance and Repair	1	-	64	64		
	Total	25	320	256	576		

Non-Continuous Technical Associate's Degree in Food Industries (Sugar Cube)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32	General Mathematics	
3	General Chemistry	2	32	-	32		
4	Biology	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32	General Chemistry	
	Total	**9**	**128**	**32**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	2	32	-	32		
2	Organic Chemistry Laboratory	1	-	32	32		Organic Chemistry
3	Industrial Drawing	2	16	32	48		
4	Computer Drawing	2	16	32	48		
5	General Microbiology	2	32	-	32	Biology	
6	General Microbiology Laboratory	1	-	32	32		General Microbiology
7	Principles of Water and Wastewater Treatment	1	16	-	16		General Microbiology
8	Water and Wastewater Treatment Laboratory	1	-	32	32	General Chemistry Laboratory	

9	Hydraulics and Pneumatics Workshop	1	-	48	48		
10	General Mechanics Workshop	2	-	96	96		
11	General Electricity Workshop	1	-	48	48	General Physics	
	Total	**16**	**112**	**352**	**464**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Preparation of Raw Materials	3	48	-	48		Organic Chemistry
2	Sugar Production Process	3	48	-	48	Preparation of Raw Materials	
3	Sugar Cube Industry Machinery	2	32	-	32		
4	Sugar Cube Industry Machinery Workshop	1	-	48	48		
5	Lime Kilns	1	16	-	16	Hydraulics and Pneumatics Workshop	
6	Quality Control in Sugar Cube Industry	2	32	-	32		Preparation of Raw Materials
7	Laboratory of Quality Control in Sugar Cube Industry	1	-	32	32	General Chemistry Laboratory	Quality Control in The Sugar Cube Industry
8	Principles of Engineering Computations	3	48	-	48	General Mathematics	Preparation of Raw Materials
9	English for Specific Purposes	2	32	-	32	General English	
10	Auxiliaries and Additives	2	32	-	32		Sugar Production Process
11	Sugar Beet and Sugarcane Farming	1	16	-	16		
12	Laboratory of Sugar, Beet, and Sugar Cane Farming	1	-	32	32		Sugar Beet and Sugarcane Farming
	Total	**22**	**304**	**112**	**416**		

Non-Continuous Technical Associate's Degree in Textile (Leather and Hide)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	

2	Entrepreneurship / The Application of ICT	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	General Chemistry	2	32	-	32		
2	General Chemistry Laboratory	1	-	32	32		
3	Organic Chemistry	2	32	-	32	General Chemistry	
4	Organic Chemistry Laboratory	1	-	32	32		
5	General Mathematics	2	32	-	32		
6	General Physics	2	32	-	32		
	Total	**10**	**128**	**64**	**192**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Warehousing Systems	1	-	32	32		
2	Physiology of Hide and Diseases	1	16	-	16		
3	Principles of Leather Computations	2	32	-	32	General Mathematics, General Chemistry	
4	Principles of Flaying and Dhabiha	2	32	-	32		
5	Consumables 1	2	32	-	32	General Chemistry	
6	English for Specific Purposes	2	32	-	32	General English	
7	Chemistry of Paint and Resin	3	32	32	64	General Chemistry	Polymer Chemistry
8	Protein Chemistry	2	32	-	32	General Chemistry	Organic Chemistry
9	Industrial Electricity	2	32	-	32	General Physics	
	Total	**17**	**240**	**64**	**604**		

Table of Specialized Courses

#	Course Title		Hours	Prerequisite(s)	Corequisite(s)

		No. of Credits	Theoretical	Practical	Total		
1	Occupational Rules and Regulations	1	16	-	16		
2	Destruction of Hides and Leather	1	-	32	32	Protein Chemistry - Consumables 1	
3	Tanning (Samak) 1	1	16	-	16	-	Protein Chemistry - Consumables 1
4	Tanning Workshop 2	1	-	64	64	-	Tanning 1 (Tanning)
5	Leather Manufacturing Machinery	1	16	-	16	Industrial Electricity	-
6	Leather Manufacturing Machinery Workshop	1	-	64	64	-	Leather Manufacturing Machinery
7	Leather Manufacturing Materials	1	16	-	16	Organic Chemistry - Protein Chemistry - Consumables 1	
8	Leather Manufacturing Materials Workshop	1	-	48	48		Leather Manufacturing Materials
9	Chemical and Physical Properties of Leather	1	16	-	16	General Chemistry - General Physics	
10	Laboratory of Chemical and Physical Properties of Leather	1	-	32	32	General Chemistry - General Physics	Chemical and Physical Properties of Leather
11	Finishing Procedure of Leather and its Problems	1	16	-	16	Tanning 1 and 2	
12	A Workshop on Finishing Procedure of Leather and its Problems	1	-	64	64	-	Finishing Procedure of Leather
13	Consumables 2	2	32	-	32	Consumables 1	Tanning
14	Sorting	1	16	-	16	Tanning 1 and 2	Finishing Procedure of Leather
15	Sorting Workshop	1	-	64	64		Sorting
16	Machinery Maintenance	1	16	-	16	Leather Manufacturing Machines	

17	A Workshop on Machinery Maintenance	1	-	48	48		Maintenance of Machinery
18	Retanning 2	1	16	-	16		
19	Retanning Workshop 2	1	-	48	48		Retanning 2
	Total	**20**	**176**	**464**	**640**		

Non-Continuous Technical Associate's Degree in Plastics Industry

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Chemistry	2	32	-	32		
3	General Chemistry Laboratory	1	-	32	32	General Chemistry	
4	General Mechanics Workshop	1	-	48	48		
5	Introduction to Computer	2	16	32	48		
	Total	9	96	112	208		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Applied Mathematics	2	32	-	32		
2	Organic Chemistry	2	32	-	32		General Chemistry
3	Organic Chemistry Laboratory	1	-	32	32		Organic Chemistry
4	Polymer Chemistry	2	32	-	32	Organic Chemistry	

5	Polymer Chemistry Laboratory	1	-	32	32		Polymer Chemistry
6	Thermodynamics	2	32	-	32	General Mechanics Workshop	
7	Industrial Drawing	1	-	48	48		Thermodynamics
8	Fluid Mechanics	2	32	-	32		
9	Plastic Raw Materials	1	16	-	16	Polymer Chemistry	
10	Plastic Raw Materials Laboratory	1	-	48	48		Plastic Raw Materials
11	Hydraulics and Pneumatics	2	16	32	48		
	Total	17	192	192	384		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Process of Forming Plastics	2	32	-	32	Plastic Raw Materials	
2	Physical and Mechanical Properties of Polymers	2	32	-	32	Polymer Chemistry	
3	Laboratory of Physical and Mechanical Properties of Polymers	1	-	32	32		Physical and Mechanical Properties of Polymers
4	English for Specific Purposes	2	32	-	32		
5	Molds in Plastic Industry	1	-	48	48		Process of Forming Plastics
6	Plastics Technology	2	32	-	32		
7	Plastics Workshop	1	-	48	48		
8	Physics of Heat and Mechanics	2	32	-	32		
9	Principles of Corrosion Control in Plastics Industry	1	16	-	16		
10	Recycling Plastics Products	1	16	-	16	Plastics Raw Materials	
11	Composition and Composite Production Technology	2	32	-	32		
12	Quality Control in Plastics Industry	2	16	32	48		
13	Composite Workshop	1	-	48	48		Composition and Composite

							Production Technology
	Total	20	240	208	448		

Non-Continuous Technical Associate's Degree in Food Industries (Flour)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	General Chemistry	1	16		16		
2	General Chemistry Laboratory	1		32	32		General Chemistry
3	Biology	1	16	-	16		
4	General Physics	1	16	-	16		
5	General Physics Laboratory	1	-	32	32		General Physics
6	Mathematics and Statistics	2	32		32		
	Total	7	80	64	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Biochemistry	2	32	-	32	General Chemistry	
2	Organic Chemistry	2	32	-	32	General Chemistry	
3	Organic Chemistry Laboratory	1		32	32	General Chemistry and General Laboratory	
4	Physical Chemistry	1	16	-	16	General Chemistry	

5	Analytical Chemistry Laboratory	1		32	32	General Chemistry and General Laboratory	
6	General Microbiology	1	16	-	16	Biology	
7	General Microbiology Laboratory	1		32	32	Biology	General Microbiology
8	Health and Poisoning in Flour Industries	1	16	-	16		
9	Nutrition and Principles of Metabolism	2	32	-	32		
10	Principles of Food Preservation	1	16	-	16		General Microbiology
11	Analytical Chemistry	2	32	-	32		General Microbiology
	Total	15	*192*	*96*	*288*		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	An Introduction to Cereal in Relevant Industries	3	48	-	48	Food Chemistry	
2	Food Chemistry	3	48	-	48	Biochemistry	
3	Food Microbiology	2	32	-	32	General Microbiology	
4	Food Microbiology Laboratory	1	-	32	32	General Microbiology	
5	English for Specific Purposes	1	16	-	16	General English	
6	Quality Control and Standards	2	32	-	32	Food Microbiology	
7	Laboratory of Quality Control and Materials Analysis	2	-	64	64		Quality Control
8	Storage and Disinfection Methods	2	32	-	32		
9	Cleaning and Receiving Wheat and Winnowing Machinery	2	32	-	32		
10	Production Process Machinery 1	2	32	-	32		
11	Production Process Machinery 2	2	32	-	32		
12	Flour Production Workshop	1	-	64	64		

13	A Workshop on Cleaning and Receiving Wheat and Winnowing Machinery	1	-	64	64		
14	Troubleshooting and Maintenance of Machinery	1	-	64	64		
	Total	25	*304*	*288*	*592*		

Non-Continuous Technical Associate's Degree in Food Industries (Bread)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Mathematics and Statistics	2	32	-	32		
2	Bread Economics and Customer Orientation	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
4	General Chemistry	1	16	-	16		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
6	General Physics	1	16	-	16		
	Total	8	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry Laboratory	1	-	32	32	General Chemistry	
2	Analytical Chemistry	1	16	-	16	General Chemistry	
3	Analytical Chemistry Laboratory	1	-	32	32	-	
4	General Microbiology	2	32	-	32	General Chemistry	
5	Organic Chemistry	2	32	-	32		

6	Principles of Nutrition	2	32	-	32	General Chemistry	
7	Biochemistry	2	-	32	32	Food Microbiology	
8	Principles of Preservation in Bread Industry	2	-	32	32	General Chemistry	
9	English for Specific Purposes	1	16	-	16	General English	
10	General Microbiology Laboratory	1	-	32	32	General Microbiology	
	Total	15	128	176	304		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Quality Control Laboratory	1	-	32	32		
2	Bakery Machines and Equipment	2	32	-	32		
3	Operation of Traditional Bread Workshop	1	-	64	64	Technology of Traditional Bread Production	
4	Rheology and Chemical Tests	2	-	64	64		
5	Raw Materials of Bread	2	32	-	32	Food Chemistry	
6	Additives and Enhancers	2	32	-	32	Food Chemistry	
7	Standards of Diet Breads	1	16	-	16		
8	Introduction to Grain (Wheat), and Flour Technology	2	32	-	32	Food Chemistry	
9	Technology of Traditional Bread Production	2	32	-	32	Raw Materials of Bread	
10	Food Chemistry	2	32	-	32		
11	Food Microbiology Laboratory	2	-	64	64		
12	Operation of Industrial Bread Workshop	1	-	64	64	Technology of Industrial Bread Production	
13	Technology of Industrial Bread Production	2	32	-	32	Introduction to Raw Materials of Bread	
14	Food Microbiology	1	16	-	16		
	Total	23	256	288	544		

Non-Continuous Technical Associate's Degree in Rubber

Table of Joint Skill-Based Courses

#	Course Title		Hours	

		No. of Credits	Theoretical	Practical	Total	Prerequisite(s)
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Chemistry	1		32	32		
3	General Chemistry Laboratory	2	32	-	32		General Chemistry
4	Physics (Mechanics and Heat)	2	16	32	48		
5	Introduction to Computer	1	-	48	48		
6	General Mechanics Workshop	1	16	-	16		
	Total	9	128	112	240		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Applied Mathematics	2	32	-	32	General Mathematics	
2	Organic Chemistry	2	32	-	32		General Chemistry
3	Organic Chemistry Laboratory	1		32	32		Organic Chemistry
4	Polymer Chemistry	2	32	-	32		
5	Polymer Chemistry Laboratory	1	-	32	32		Polymer Chemistry
6	Physical and Mechanical Properties of Polymers	2	32	-	32		Polymer Chemistry
7	Laboratory of Physical and Mechanical Properties of Polymers	1	-	32	32		Physical and Mechanical Properties of Polymers
8	English for Specific Purposes	2	32	-	32		

9	Rubber Raw Materials	2	32	-	32		Polymer Chemistry
10	Rubber Raw Materials Laboratory	1	-	48	48		Rubber Raw Materials
11	Hydraulics and Pneumatics	2	16	32	48		
	Total	18	208	176	368		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Rubber Mixing Technology	2	16	32	48	Rubber Raw Materials	
2	Intermediate Products Technology	2	16	32	48	Rubber Raw Materials	
3	Rubber Molding Technology	2	16	32	48	Rubber Raw Materials	
4	An Introduction to and the Application of Laboratory Equipment	1	-	48	48	Hydraulics and Pneumatics	
5	Technology of Manufacturing Tire and Rubber Products	2	32	-	32		
6	Manufacturing and Testing Tire Workshop	1	-	48	48		
7	Quality Control in Rubber Industry	2	16	32	48		
8	Defects of Rubber Products, Tires, and Tubes	1	16	-	16	Rubber Technology	
9	Recycling Rubber Products	1	16	-	16		
10	Water and Wastewater Treatment in Rubber Industry	1	16	-	16		
11	Rubber Technology Workshop	2		96	96		
	Total	17	144	272	416		

Non-Continuous Technical Associate's Degree in Food Industries (Canning and Compotes)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	

	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Physics	2	32	-	32		
2	General Physics Laboratory	1	-	32	32		General Physics
3	General Mathematics	2	32	-	32		
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
	Total	**8**	**96**	**64**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	2	32	-	32		General Chemistry
2	Industrial Equipment and Installations	1	16	-	16		
3	Workshop on Industrial Equipment and Installations	1	-	48	48		Industrial Equipment and Installations
4	Marketing and Sales	2	32	-	32		
5	General Microbiology	2	32	-	32		
6	Principles of Standards and Quality Control	2	32	-	32		
7	Principles of Water and Wastewater Treatment	1	16	-	16		
8	Laboratory of Principles of Water and Wastewater Treatment	1	-	32	32		Principles of Water and Wastewater Treatment
9	Food Chemistry	2	32	-	32	Organic Chemistry	
10	Food Chemistry Laboratory	1	-	32	32		Food Chemistry
	Total	**15**	**192**	**112**	**304**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Process of Producing Meat and Non-meat Cans	2	32	-	32		

2	Production Operations 1	1		48	48		Process of Producing Types of Meat and Non-Meat Cans
3	Process of Producing Compotes, Jams and Pickles	2	32	-	32		
4	Production Operations 2	1		48	48		Process of Producing Compotes, Jams and Pickles
5	Compote and Cans Production Lines Machinery	1	16	-	16	Industrial Equipment and Installations	
6	Workshop on Compote and Cans Production Machinery Lines	2	-	96	96		Compote and Cans Production Lines Machinery
7	Additives in Compote and Canning Industries	1	16	-	16		
8	Machinery Maintenance and Repair in Compote and Canning Industries	1	16	-	16	Compote and Cans Production Lines Machinery	
9	Workshop on Machinery Maintenance and Repair in Compote and Canning Industries	1	-	64	64		Machinery Maintenance and Repair in Compote and Canning Industries
10	Specialized Quality Control	2	32	-	32	Principles of Standards and Quality Control	
11	Specialized Quality Control Laboratory	2	-	64	64		Specialized Quality Control
12	English for Specific Purposes	2	32	-	32		
13	Packaging in Compote and Canning Industries	2	32	-	32	Process of Producing Meat and Non-Meat Cans	
14	Specialized Microbiology	2	32	-	32	General Microbiology	
15	Specialized Microbiology Laboratory	2	-	64	64		Specialized Microbiology
	Total	**24**	**240**	**384**	**624**		

Non-Continuous Technical Associate's Degree in Food Industries (Dried Fruit Processing)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Chemistry	2	32	-	32		General Chemistry Laboratory
2	General Chemistry Laboratory	1	-	32	32		General Chemistry
3	General Mathematics	2	32	-	32		-
4	General Physics	2	32	-	32		General Physics Laboratory
5	General Physics Laboratory	1	-	32	32		General Physics
	Total	8	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Food Chemistry	2	32	-	32	General Chemistry	Principles of Food Chemistry Laboratory
2	Principles of Food Chemistry Laboratory	1	-	32	32	General Chemistry Laboratory	Principles of Food Chemistry
3	Post-harvest Physiology	1	16	-	16	-	
4	Nutrition	2	32	-	32	Principles of Food Chemistry	
5	Principles of Food Analysis	2	32	-	32	Principles of Food Chemistry	Principles of Food Chemistry Laboratory
6	Principles of Food Analysis Laboratory	1	-	32	32	Principles of Food Chemistry	Principles of Food Analysis

7	Industrial Drawing Workshop	2	-	96	96		
8	Food Microbiology	2	32	-	32		
9	Food Microbiology Laboratory	1	-	32	32		Food Microbiology
	Total	**16**	**144**	**288**	**432**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Technical Computations in Food Industries	2	32	-	32	General Physics, General Mathematics	
2	Warehousing and Pesticide in Warehouse	1	16	-	16	Food Microbiology, Postharvest Physiology	
3	Dried Fruit Processing	2	32	-	32	Principles of Food Chemistry, Food Microbiology	Principles of Food Preservation, Nutrition Processing Laboratory
4	Laboratory of Dried Fruit Processing	2	-	64	64	Food Microbiology Laboratory, Food Chemistry Laboratory	Dried Fruit Processing
5	Quality Control of Dried Fruit	2	32	-	32	Principles of Food Analysis, Food Microbiology	Quality Control of Dried Fruit Laboratory
6	Quality Control of Dried Fruit Laboratory	1	-	32	32	Principles of Food DecompositionFood Microbiology	Quality Control of Dried Fruit
7	Dried Fruit Packaging	2	32	-	32	Principles of Food Preservation	
8	Dried Fruit Processing Equipment and Machinery	2	32	-	32	Dried Fruit Processing	
9	Workshop on Dried Fruit Processing Equipment and Machinery	1	-	48	48	Laboratory of Dried Fruit Processing	Dried Fruit Processing Equipment and Machinery

10	Maintenance and Repair of Equipment in Dried Fruit Production Units	1	16	-	16		
11	Workshop on Maintenance and Repair of Equipment in Dried Fruit Production Units	2	-	96	96		Maintenance and Repair of Equipment in Dried Fruit Production Units
12	Principles of Food Preservation	2	32	-	32	Principles of Food Chemistry, Food Microbiology	
13	English for Specific Purposes	2	32	-	32	Dried Fruit Processing General English	
	Total	**22**	**256**	**240**	**496**		

Non-Continuous Technical Associate's Degree in Food Industries (Edible Oil)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		-
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		
4	General Chemistry						
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
6	Microbiology	1	16	-	16		
7	Microbiology Laboratory	1	-	32	32		Microbiology
	Total	10	112	144	208		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	3	48	-	48	General Chemistry	
2	Organic Chemistry Laboratory	1	-	32	32		Organic Chemistry
3	Analytical Chemistry	2	32	-	32	General Chemistry	
4	Analytical Chemistry Laboratory	1	-	32	32	-	Analytical Chemistry
5	Principles of Technical Computations in Food Industries	3	48	-	48	General Mathematics and General Physics	
6	Food Chemistry	2	32	-	32	-	
7	Food Chemistry Laboratory	2	-	64	64	-	Food Chemistry
8	Principles of Industrial Water and Wastewater Treatment	2	32	-	32	Analytical Chemistry	
9	Water and Wastewater Laboratory	1	-	32	32	Analytical Chemistry Laboratory	
	Total	17	208	160	480		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Physical and Chemical Properties of Oil	2	32	-	32	Analytical Chemistry Organic Chemistry	Food Chemistry
2	An Introduction to and Preservation of Oilseeds	2	32	-	32		
3	Oil Extraction Process and Machinery	3	16	96	112		Recognition and Preservation of Oilseeds
4	Oil Purification Machinery	2	32	-	32		Recognition and Preservation of Oilseeds
5	Workshop on Vegetable Oils Purification	1	-	64	64		Oil Purification Machinery

6	Quality Control in Vegetable Oil Industry	2	32	-	32	Oil Purification Machinery	
7	Oil Purification Laboratory	2	-	64	64		Oil Purification Machinery
8	Laboratory of Quality Control in Vegetable Oil Industry	3	16	64	80	Organic Chemistry Laboratory, Analytical Chemistry Laboratory	
9	English for Specific Purposes	2	32	-	32	General English	
	Total	20	192	320	512		

Non-Continuous Technical Associate's Degree in Laboratory Chemistry (Food)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		-
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
4	General Chemistry	3	48	-	48		
5	General Chemistry Laboratory	1	-	48	48		General Chemistry
	Total	**9**	**112**	**80**	**192**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry 1	2	32	-	32		

2	Organic Chemistry Laboratory 1	1	-	48	48		Organic Chemistry1
3	Organic Chemistry 2	2	32	-	32	Organic Chemistry 2	
4	Organic Chemistry Laboratory 2	1	-	48	48		Organic Chemistry2
5	Analytical Chemistry	2	32	-	32	General Chemistry	
6	Analytical Chemistry Laboratory	1	-	48	48	General Chemistry	Analytical Chemistry
7	General Microbiology	2	32	-	32		
8	General Microbiology Laboratory	1	-	48	48		General Microbiology
9	Food Microbiology	2	32	-	32	General Microbiology	
10	Food Microbiology Laboratory	1	-	48	48	General Microbiology Laboratory	Food Microbiology
11	Industrial Water and Wastewater Treatment	2	16	32	48	Analytical Chemistry Organic Chemistry	
	Total	**17**	**176**	**272**	**448**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Biochemistry	2	32	-	32	Organic Chemistry 2	
2	General Biochemistry Laboratory	1	-	48	48	Organic Chemistry Laboratory 2	General Biochemistry
3	Food Chemistry	3	48	-	48	Organic Chemistry 2	
4	Food Processing	2	32	-	32	Food Chemistry	
5	Food Processing Workshop	1	-	64	64	-	Food Processing
6	Additives in Food Industries	1	16	-	16	Food Chemistry	
7	Laboratory of Additives in Food Industries	1	-	48	48		Additives in Food Industries

8	Principles of Quality Control in Food Industries	1	16	-	16	Food Microbiology - Food Chemistry	
9	Principles of Food Analysis	1	16	-	16	Food Chemistry	
10	Food Analysis Laboratory 1	2	-	96	96		Principles of Food Analysis
11	Food Analysis Laboratory 2	2	-	96	96		Principles of Food Analysis
12	Principles of Food Standards	1	16	-	16		
13	English for Specific Purposes	2	32	-	32	General English	
14	Methods of Using Specialized Texts and Websites	1	16	-	16		
	Total	**21**	**224**	**352**	**576**		

Non-Continuous Technical Associate's Degree in Laboratory Chemistry – Detergents, Hygienic and Cosmetic Products

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		-
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	48	48		General Physics
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	48	48		General Chemistry
6	Cellular and Molecular Biology	1	16	-	16		
7	Cellular and Molecular Biology Laboratory	1	-	32	32		Cellular and Molecular Biology
	Total	**10**	**112**	**128**	**240**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry 1	2	32	-	32		
2	Organic Chemistry Laboratory 1	1	-	48	48		Organic Chemistry1
3	Organic Chemistry 2	2	32	-	32	Organic Chemistry 2	
4	Organic Chemistry Laboratory 2	1	-	48	48		Organic Chemistry2
5	Inorganic Chemistry	2	32	-	32	General Chemistry	
6	Inorganic Chemistry Laboratory	1	-	48	48	General Chemistry Laboratory	
7	Analytical Chemistry	2	32	-	32	General Chemistry	
8	Analytical Chemistry Laboratory	1	-	48	48	General Chemistry	Analytical Chemistry
9	General Microbiology	2	32	-	32	Cellular and Molecular Biology	
10	General Microbiology Laboratory	1	-	48	48	Cellular and Molecular Biology Laboratory	General Microbiology
11	Physiology	1	16	-	16	Cellular and Molecular Biology	
12	Physiology Laboratory	1	-	48	48	Cellular and Molecular Biology Laboratory	Physiology
	Total	**17**	**176**	**288**	**464**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Chemistry of Hygienic Products (Detergents and Soaps)	2	32	-	32	Organic Chemistry 2	

2	Laboratory of Chemistry of Hygienic Products (Detergent and Soap)	1	-	48	48	Organic Chemistry Laboratory 2	Chemistry of Hygienic Products (Detergent and Soap)
3	Chemistry of Cosmetics	2	32	-	32	Organic Chemistry 2	
4	Chemistry of Cosmetics Laboratory	1	-	48	48	Organic Chemistry Laboratory 2	Chemistry of Cosmetics
5	Hygienic Products and Detergent Industries	2	32	-	32	Organic Chemistry 2	
6	Workshop on Hygienic Products and Detergent Industries	1	-	64	64	Organic Chemistry Laboratory 2	Hygienic Products and Detergent Industries
7	Cosmetic Industry	2	32	-	32	Organic Chemistry 2	-
8	Cosmetic Industry Workshop	1	-	64	64	Organic Chemistry Laboratory 2	Cosmetic Industries
9	Work Safety at Cosmetics and Hygienic Laboratory	1	16	-	16	-	-
10	Principles of Quality Control in Cosmetic and Hygienic Industries	1	16	-	16	Organic Chemistry 2	-
11	Laboratory of Quality Control Principles in Cosmetic and Hygienic Industries	2	-	96	96	Organic Chemistry Laboratory 2	Principles of Quality Control in Cosmetic and Hygienic Industries
12	Principles of Standard in Cosmetic and Hygienic Products	1	16	-	16		
13	English for Specific Purposes	2	32	-	32	General English	
14	Methods of Using Specialized Texts and Websites	1	16	-	16		
	Total	**20**	**224**	**320**	**544**		

Non-Continuous Technical Associate's Degree in Laboratory Industries - Industrial

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	Principles of Supervision	2	32	-	32	

3	Business Skills and Rules	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		-
2	General Physics	2	32	-	32		General Mathematics
3	General Physics Laboratory	1	-	48	48		General Physics
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	48	48		General Chemistry
	Total	**10**	**112**	**128**	**240**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	An Introduction to Computer	2	16	32	48		
2	Inorganic Chemistry	2	32	-	32	General Chemistry	
3	Inorganic Chemistry Laboratory	1	-	48	48	General Chemistry Laboratory	
4	Analytical Chemistry	2	32	-	32	General Chemistry	
5	Analytical Chemistry Laboratory	1	-	48	48		Analytical Chemistry
6	Organic Chemistry (1)	2	32	-	32	General Chemistry	
7	Organic Chemistry Laboratory	1	-	32	32		Organic Chemistry (1)
8	Physical Chemistry	2	32	-	32	General Physics	
9	Physical Chemistry Laboratory	1		32	32		Physical Chemistry
10	English for Specific Purposes	2	32	-	32		
11	Principles of Computations in Industrial Chemistry	2	32	-	32	Analytical Chemistry General Mathematics	

	Total	18	208	160	358		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Polymer Chemistry	2	32		32	Organic Chemistry 1	
2	Polymer Chemistry Laboratory	1	-	32	32	-	Polymer Chemistry
3	Chemical Technologies	2	32	-	32	Organic Chemistry (1), Inorganic Chemistry	
4	Petrochemistry	2	32	-	32	Polymer Chemistry	
5	Textile Industry	2	32	-	32	Polymer Chemistry	
6	Textile Industry Laboratory	1	-	32	32	-	Textile Industry
7	Materials Science	2	32	-	32	Organic Chemistry (1), Inorganic Chemistry	
8	Principles of Standards	1	16	-	16		
9	Principles of Quality Control	2	32	-	32		
10	Paint Industry	2	32	-	32	Polymer Chemistry	
11	Paint Industry Laboratory	1	-	32	32		Paint Industry
12	Corrosion of Metals	1	16	-	16	Inorganic Chemistry Analytical Chemistry	
13	Industrial Water and Wastewater Treatment	1	16	-	16		
	Total	20	272	96	368		

Non-Continuous Technical Associate's Degree in Computer Networks

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	

1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	Computer Science Mathematics	3	48	-	48		-
2	General Mathematics	3	48	-	48		
3	Computer Workshop	1	-	48	48		
	Total	7	96	48	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introductory Programming	3	32	32	64		
2	Computer Networks	3	48	-	48	Computer Workshop	
3	TCP / IP Concepts	3	48	-	48	Computer Networks	
4	Logic Circuits	2	32	-	32	Mathematics Computer Science	
5	Network Security Principles	3	48	-	48	Computer Networks	
6	Operating Systems of Network Management	2	32	-	32	Computer Networks	
7	Workshop on Operating Systems of Network Management	1	-	48	48		Operating Systems of Network Management
	Total	17	240	80	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Linux Workshop	1	-	48	48		Computer Workshop

2	Network Programming	3	32	32	64	Computer Workshop Introductory Programming	
3	Network Servers Configuration	3	32	32	64	Operating Systems of Network Management	
4	Network Hardware Workshop	1	-	48	48		
5	Switching in Local Area Networks	3	32	32	64	TCP / IP Concepts	
6	Technical English for Computer Networks	3	48	-	48	General English	
7	Workshop on Home Networks Implementation	1	-	48	48	Network Hardware Workshop	
8	Workshop on Local Networks Implementation	1	-	48	48	Workshop on Network Hardware	Network Servers Configuration
9	The Application of Networks	1	-	48	48	Network Hardware Workshop	Switching in Local Area Networks
	Total	17	144	336	480		

Non-Continuous Technical Associate's Degree in Architecture - Urban Architecture

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Report Making	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		-
2	Landscapes Geometry	2	16	32	48		
3	Fundamental Architecture Workshop	3	-	144	144		

	Total	7	48	176	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Architecture Workshop	3	16	96	112	Fundamental Architecture Workshop	
2	Introduction to Materials	2	32	-	32	-	
3	Building Details 1	2	32	-	32	Introduction to Materials	
4	Statics and Strength of Materials	3	48	-	48	General Mathematics	
5	Environmental Conditions Control	2	32	-	32		
6	The Application of Software in Architecture	2	16	48	64	Introductory Workshop on Architecture	
7	Methods of Surveying and Documentation	2	16	48	64	Introductory Workshop on Architecture	
8	English for Specific Purposes	2	32	-	32	-	
9	Building Details 2	2	32	-	32	Building Details 1	
	Total	20	256	192	448		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Architectural Design Workshop 1	3	-	144	144	Architecture Workshop	
2	Architectural Design Workshop 2	3	-	144	144	Architectural Design Workshop 1	
3	Surveying	2	16	48	64	-	
4	Rules and Regulations of Urban Constructions	2	32	-	32	Architecture Workshop	
5	Quantity Surveying and Estimate	2	32	-	32	-	
6	Principles of Supervision of Construction Activities	2	32	-	32	Architecture Workshop	
7	Identification of Damages to Urban Constructions and Ways To Deal with them	2	32	-	32	Architecture Workshop	
8	National Regulations of Urban Constructions and Infrastructures	2	32	-	32		
9	Technical Design of Buildings Workshop	2	-	96	96		
	Total	20	176	432	608		

Non-Continuous Technical Associate's Degree in Work Safety and Technical Protection

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	Mathematics	2	32	-	32		-
2	Applied Physics	2	32	-	32		
3	Applied Physics Laboratory	1	-	32	32		
4	Chemistry	2	32	-	32		
5	Applied Statistics and Probability	2	32	-	32		
	Total	9	128	32	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Occupational Safety	2	32	-	32		
2	Industrial Manufacture Methods	2	32	-	32		
3	English for Specific Purposes	2	32	-	32	General English	
4	Rules and Regulations of Occupational Safety	3	48	-	48		
5	Psychology of Work	2	32	-	32		
6	Workplace Harmful Factors , and their Measurement	2	16	48	64	Applied Physics Chemistry	
7	Methods of Harmful Factors Analysis in Workplace	3	32	48	80		
	Total	16	224	96	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Machinery Safety	3	32	48	80	Workplace Harmful Factors and their Measurement	
2	Electrical Installations Safety	3	32	48	80	Workplace Harmful Factors and their Measurement	
3	Fire Safety Methods	3	32	48	80	Workplace Harmful Factors and their Measurement	
4	Occupational Safety in Height and its Equipment	3	32	48	80	Workplace Harmful Factors and their Measurement	
5	Safety and Technical Protection Workshop	1	-	48	48		
6	Personal Protective Equipment	2	32	-	32	Workplace Harmful Factors and their Measurement	
7	Human Factors Engineering	2	32	-	32	Workplace Harmful Factors and their Measurement	
8	Management of Occupational Safety and Health	2	32	-	32	Workplace Harmful Factors and their Measurement English for Specific Purposes	
9	Workplace Safekeeping and Disaster Management	3	48	-	48		
	Total	22	272	240	512		

Non-Continuous Technical Associate's Degree in Information Technology and Communications (ICT) - Rural ICT

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT/ Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Report Making	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Management	2	32	-	32		-

2	General Accounting	2	32	-	32		
3	Computer Word Processing	2	32	-	32		
4	Marketing and Customer Orientation	2	32	-	32		
	Total	**8**	**128**	**-**	**128**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Technical English for IT	3	48	-	48		
2	General Economics	2	32	-	32		
3	Bank Accounting	2	32	-	32	General Accounting	
4	Principles of Electricity and Electronics	2	32	-	32		
5	Principles of Post	2	32	-	32		
6	Electricity and Electronics Workshop	1	-	48	48	Principles of Electricity and Electronics	
7	Computer Word Processing Laboratory	1	-	32	-	Computer Word Processing	
	Total	13	176	80	256		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Communication Technology 1	3	48	-	48	-	
2	Communication Technology 2	3	48	-	48	Communication Technology 1	
3	Computer Networks	2	32	-	32	-	
4	Posting Letters, Parcels, and Packages	2	32	-	32	Principles of Post	
5	Financial Post	2	32	-	32	Principles of Post	
6	Operational Software of Post	2	-	64	64	Posting Letters, Parcels and Packages	
7	Internal Banking	2	32	-	32		
8	International Banking	1	16	-	16	Internal Banking	
9	Electronic Banking	2	-	64	64	Internal Banking	
10	Bank Operating Software	2	-	64	64	Internal Banking	
11	Bank Operating Instructions	1	16	-	16	Internal Banking	

12	The Application of Telecommunication	2	-	64	64		
13	ICT Workshop 1	1	-	48	48		Communication Technology 1
14	ICT Workshop 2	1	-	48	48		Communication Technology 2
15	Computer Networks Laboratory	1	-	32	32		Computer Networks
	Total	**27**	**256**	**384**	**640**		

Non-Continuous Technical Associate's Degree in Mechanics - Mechanical Installations of Buildings

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Quality Control	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	Mathematics	3	48	-	48		-
2	Thermal Physics	2	32	-	32		
3	Thermal Physics Laboratory	1	-	32	32		
4	Technical Drawing	1	-	32	32		
	Total	7	80	64	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Installations Materials	2	32	-	32		
2	Thermodynamics	2	32	-	32	General Mathematics	
3	Fluid Mechanics	2	32	-	32	Thermal Physics	
4	Heat Transfer	2	32	-	32	Thermodynamics	

5	Principles of Maintenance and Repair	2	32	-	32	-	
6	English for Specific Purposes and Catalog Reading	2	32	-	32	General English	
7	Fluid Mechanics Laboratory	1	-	32	32	-	Fluid Mechanics
8	Applied Mathematics	2	32	-	32	General Mathematics	
	Total	15	224	32	256		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Computer The Application in Installations	3	32	32	64	-	
2	Sewage Installations	3	32	32	64	Installation Materials	
3	Heating and Cooling Installations	1	0	48	48	Heat Transfer	
4	Welding Workshop	2	16	32	48	Sheet Metal and Canalizing of Vents	
5	Hygienic Installations	3	32	32	64	Fluid Mechanics	
6	Electricity of Installations	2	16	32	48	Installation Materials	
7	Sheet Metals and Canalizing Vents	2	0	64	64	-	
8	Installations Drawing	3	32	32	64	Technical Drawing	
9	Gas Installations of Buildings	3	32	32	64	Fluid Mechanics	
10	Air Conditioning Installations	3	32	32	64	Sewage Installations	
	Total	**24**	**192**	**400**	**592**		

Non-Continuous Technical Associate's Degree in Computer – Computer Systems

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Report Making	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Mathematics of Computer Science	3	48	-	48		-
2	Applied Mathematics	3	48	-	48		
3	Computer Workshop	1	-	48	48		
4	Physics of Electricity	2	32	-	32		
5	Physics of Electricity Laboratory	1	-	48	48		
	Total	10	128	96	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Programming	3	32	32	64		
2	Computer Networks	3	48	-	48	Computer Workshop	
3	Electric and Electronic Circuits	3	48	-	48	Physics of Electricity	
4	Laboratory of Electric and Electronic Circuits	1	-	48	48		Electric and Electronic Circuits
5	Logic Circuits	3	48	-	48	Electric and Electronic Circuits, Mathematics of Computer Science	
6	Computer Architecture	2	32	-	32		Logic Circuits
	Total	15	208	80	288		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Computer Peripherals	2	32	-	32		Logic Circuits
2	Computer Peripherals Workshop	1	-	48	48		Computer Peripherals
3	The Applications	1	-	48	48	Programming	Logic Circuits
4	Printed Circuits Production	2	32	-	32	Electrical and Electronic Circuits	
5	Printed Circuits Production Workshop	1	-	48	48		Production of Printed Circuits

6	English for Specific Purposes and Catalog Reading	3	48	-	48	General English	
7	Microcontrollers	2	32	-	32	Programming	Computer Architecture
8	Microcontrollers Workshop	1	-	48	48		Microcontrollers
9	Sensor Measuring Devices	2	32	-	32	Electrical and Electronic Circuits	
10	Sensor Measuring Devices Laboratory	1	-	48	48		Sensor Measuring Devices
11	Architecture of Mobile Computer Systems	2	32	-	32	Computer Architecture	
12	Workshop on Architecture of Mobile Computer Systems	1	-	48	48		Architecture of Mobile Computer Systems
13	Hardware Project	3	-	144	144		
	Total	22	208	432	640		

Non-Continuous Technical Associate's Degree in Gas Supply and Distribution

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Professional Ethics	2	32	-	32	
3	Report Making	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours				Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		-
2	General Physics	2	32	-	32		General Mathematics
3	General Chemistry	2	32	-	32		
4	Introduction to Oil and Gas Industries	1	16	-	16		
	Total	7	112	-	112		

Table of Core Courses

#	Course Title		Hours	Prerequisite(s)	Corequisite(s)

		No. of Credits	Theoretical	Practical	Total		
1	Quantity Surveying and Estimate	1	-	64	64	General Mathematics	
2	Applied Thermodynamics	2	32	-	32	General Physics	
3	Statics and Strength of Materials	2	32	-	32	General Physics	
4	Principles of Fluid Flow in Pipelines	2	32	-	32	General Physics	
5	Fuel and Combustion and their The Application	3	48	-	48	General Chemistry	
6	Gas Pipeline Welding	2	32	-	32		Statics and Strength of Material
7	Gas Pipeline Welding Workshop	1	-	64	64		Gas Welding
8	Pipes, Joints, and Valves	1	16	-	16	General Physics	
9	Pipes, Joints, and Valves Workshop	1	-	48	48		Pipes, Joints and Valves
10	Safety, Health, Environment and Fire Extinguishing	1	16	-	16	General Chemistry	
11	Workshop on Safety, Health and Environment, and Fire Extinguishing	1	-	48	48		Safety, Health, Environment, and Fire Extinguishing
12	Materials Science	2	32	-	32	General Chemistry	
	Total	16	192	224	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Network Operations and Technical Assistance	1	16	-	16		
2	Gas Supply Operations	2	32	-	32	Statics and Strength of Materials General Chemistry	
3	Corrosion, Insulation, and Cathodic Protection	1	16	-	16	Materials Science	

4	Workshop on Corrosion, Insulation, and Cathodic Protection	1	-	48	48		Corrosion, Insulation and Cathodic Protection
5	Control and Instrumentation in Gas Supply and Distribution	2	32	-	32	General Physics	
6	Workshop on Control and Instrumentation in Gas Supply and Distribution	1	-	48	48		Control and Instrument in Gas Supply and Distribution
7	Technical Inspection 1	2	32	-	32	Statics and Strength of Materials GasWelding	
8	Technical Inspection 2	1	16	-	16	Technical Inspection 1	
9	Technical Inspection Operations 1	1	-	48	48	-	Technical Inspection 1
10	Technical Inspection Operations 2	1	-	48	48	-	Technical Inspection 2
11	Operations, Maintenance, and Repair of Gas Networks	1	16	-	16	Statics and Strength of Materials	
12	Operations, Maintenance, and Repair of Pressure Reduction Stations	1	16	-	16	Statics and Strength of Materials	
13	Workshop on Operations, Maintenance and Repair of Pressure Reduction Stations	1	-	48	48		
14	English for Specific Purposes	2	32	-	32	General English	
15	Planning, Repair, and Maintenance of Gas Networks and Stations	1	16	-	16	General Mathematics	
16	Workshop on Planning , Repair, and Maintenance of Gas Networks and Stations	1	-	48	48		
17	Operations and Goods Procurement	1	16	-	16		
18	Standards in Gas Supply and Distribution	1	16	-	16		
19	Introduction to Process Symbols (PFD and PID)	1	-	48	48		

20	Measuring Equipment in Gas Supply and Distribution	1	-	48	48		
	Total	24	256	384	640		

Non-Continuous Technical Associate's Degree in Ground Safety of Airport

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Health and Safety of Environment	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		-
2	General Physics	2	32	-	32		
3	Principles of Fire	2	32	-	32		
4	Technical English for Aviation	2	16	48	64	General English	
5	General Chemistry	2	32	-	32		
	Total	10	144	48	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	First Aid Principles	1	-	48	48		
2	Physical Fitness (Speed Skills Training)	1	-	48	48	Physical Education	
3	Introduction to Extinguishers	1	-	32	32		
4	Introduction to ANNEX 14 Airport	2	32	-	32	Technical English for Aviation	
5	Introduction to Aircrafts	2	16	64	80	Technical English for Aviation	
6	Personal Protective Equipment and Rescue	3	16	96	112		

7	Regulations and Guidelines of Airport Safety	2	32	-	32		
8	Gasoline and Diesel Cars at Airport Ground Safety	2	32	-	32		
9	Principles of Electrical Safety	2	32	-	32		
	Total	16	160	288	448		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32	Technical English for Aviation	
2	Dangerous Goods Transportation	2	32	-	32	General Chemistry	
3	Hydraulics in Airport Fire Station	2	32	-	32	General Physics	
4	Airport Fire Trucks	1	-	64	64	Personal Protective Equipment and Rescue	
5	Power Skills in Firefighting Operations	2	-	96	96	Physical Fitness (Speed Skills Training)	
6	First Aid in Aviation Accidents	2	32	-	32	First Aid Principles	
7	First Aid Workshop	2	-	96	96	First Aid in Air Accidents	
8	Fire Fighting in Building and Airport Installations	2	32	-	32	Introduction to Extinguishers	
9	Airline Rescue Operations	2	-	96	96	First Aid Principles Introduction to Aircrafts	
10	Aircraft Fire Fighting	1	-	64	64	Introduction to Aircrafts	
11	Ground Marshaling	2	16	48	64	Introduction to Aircrafts	
12	Manual Extinguishers	1	-	32	32	Introduction to Extinguishers	
	Total	21	176	496	672		

Non-Continuous Technical Associate's Degree in Aircrafts Maintenance and Repair

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Health and Safety of Environment	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Principles of Supervision	2	32	-	32	

	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Electricity	3	32	64	96		-
2	Principles of Electronics	2	16	32	48		Principles of Electricity
3	Safety of Aircrafts and Related Environments	2	16	48	64		
4	Engineering Drawing ,Diagrams, and Standards	2	16	48	64		
	Total	**9**	**80**	**192**	**272**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Ground Services of Aircrafts and Storage	2	16	48	64	Safety of Aircrafts and Related Environments	
2	Welding and Soldering in Aviation Industry	2	16	48	64		
3	Aircraft Sheet Metalworking	2	16	64	80		Workshop Theory
4	Workshop Theory	2	16	64	80		
5	Aircraft Materials and Hardware	2	16	64	80		
6	Principles of Aerodynamics	2	32	—	32		
7	Aircraft Repair and Inspection Techniques	2	16	64	80	Aircraft Materials and Hardware	
8	Aircraft Non-destructive Inspection Techniques	2	16	64	80	Aircraft Repair and Inspection Techniques	
9	Digital Techniques and Systems of Electronic Precision Instruments	3	32	64	96	Principles of Electronics	
	Total	**19**	**176**	**480**	**656**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Procedure of Aircraft Maintenance and Repair	2	32		32		

2	Aircraft Internal Fittings System	2	16	32	48		
3	Aircraft Aerodynamics and Flight Theory	2	32		32	Principles of Aerodynamics	
4	Structure of Turbine Engine Aircrafts	2	32		32		Aircraft Aerodynamics and Flight Theory
5	Systems of Turbine Engine Aircraft 1	2	32		32		Aircraft Electrical Systems
6	Systems of Turbine Engine Aircraft 2	2	32		32	Systems of Turbine Engine Aircraft 1	
7	Aircraft Electrical Systems	3	32	64	96	Principles of Electronics	
8	Avionics Systems and Precision Instruments of Aircrafts	2	16	64	80		
9	Structure and Systems of Landing Gear in Turbine Engine Aircrafts	3	32	48	80		
10	Turbine Engines 1	2	16	48	64		Aircraft Aerodynamics and Flight Theory
11	Turbine Engines 2	3	32	48	80		
12	Aircraft Propeller	2	16	48	64		
	Total	**27**	**320**	**352**	**672**		

Non-Continuous Technical Associate's Degree in Aircraft Avionics

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Health and Safety of Environment	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Electricity	3	32	64	96		-

2	Principles of Electronics	2	16	32	48		Principles of Electricity
3	Safety of Aircraft and Related Environments	2	16	48	64		
4	Engineering Drawing, Diagrams, and Standards	2	16	48	64		
	Total	**9**	**80**	**192**	**272**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Ground Services of Aircraft and Storage	2	16	48	64	Safety of Aircraft and Related Environments	
2	Tools and Equipment in Avionics Workshop	2	16	32	48		
3	Soldering of Electrical and Electronic Components of Aircraft	2	16	32	48	Tools and Equipment in Avionics Workshop	
4	Aircraft Materials and Hardware	2	16	48	64		
5	Principles of Aerodynamics	2	32	—	32		
6	Aircraft Repair and Inspection Techniques	2	16	48	64	Aircraft Materials and Hardware	
7	Procedure of Aircrafts Maintenance and Repair	2	32	—	32	Aircraft Repair and Inspection Techniques	
8	Digital Techniques and Electronic Precision Instrument Systems	3	32	64	96	Principles of Electronics	
9	Aerodynamics of Aircrafts and Helicopters	2	32	—	32	Principles of Aerodynamics	
	Total	**19**	**208**	**270**	**480**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Structure and Flight Control Surfaces of Aircraft	2	16	48	64		Aerodynamics of Aircraft and Helicopters
2	Aircraft Electricity	2	16	48	64	Principles of Electricity	
3	Aircraft Mechanical Systems	2	16	48	64	Buildings and Flight Control Surfaces of Aircraft	
4	Principles of Propellants	2	16	32	48	Aircraft Electric	

5	Automatic Flight Control Systems	2	16	48	64	Buildings and Flight Control Surfaces of Aircraft	
6	Aircraft Communication and Microwave Systems	3	32	64	96	Digital Techniques and Electronic Precision Instrument Systems	
7	Aircraft Navigation and Radar Systems	3	32	64	96	Digital Techniques and Electronic Precision Instrument Systems	
8	Aircraft Precision Instruments	3	32	32	64	Digital Techniques and Electronic Precision Instrument Systems	
9	Aircraft Electrical Systems	2	16	48	64	Aircraft Electric	
10	Aircraft Electrical Wiring Systems (EWIS)	3	32	32	64	The last semester	
11	The Application of New Technologies in Aircrafts	2	16	48	64	The last semester	
	Total	**26**	**240**	**512**	**752**		

Non-Continuous Technical Associate's Degree in Aviation - Piloting (Private Pilot License-PPL)

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English 1	3	32	64	96		General English
2	English 2	2	16	64	80		English 1
3	Mathematics	2	32	—	32		
4	Physics	2	32	—	32		
	Total	9	112	128	240		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English 3	2	16	64	80		English 2
2	English for Specific Purposes	2	16	64	80		English 3

3	Aerodynamics	3	48	—	48		
4	Aircraft Precision Instrument	3	32	32	64		
5	Aviation Meteorology 1	3	32	32	64		English for Specific Purposes 1
6	Piston Engines and Related Systems	3	32	32	64	English for Specific Purposes1	
7	Flight Mechanics	3	48	—	48	Aerodynamics	
	Total	19	224	224	448		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Aircraft Weighing and Balance	3	48	—	48	Flight Mechanics	
2	Principles of Navigation	3	32	32	64		Flight Mechanics
3	Aviation Laws	2	16	48	64	English for Specific Purposes 1	
4	English for Specific Purposes 2	2	16	64	80	English for Specific Purposes 1	
5	Aviation Information	2	32	—	32	Aviation Laws	
6	Radio Navigation Assist Systems 1	2	16	48	64	Aircraft Precision Instrument	
7	Aviation Physiology	2	32	—	32	English for Specific Purposes 1	
8	Radio Conversations	2	16	32	48	English for Specific Purposes 2	
9	Deciding and Preparing Flight Plan	3	32	32	64	English for Specific Purposes 2	
10	Flight Operations 1	3	32	48	80	Last Semester	
11	Flight Operations 2	3	32	48	80	Last semester	
	Total	27	304	352	656		

Non-Continuous Technical Associate's Degree in Civil Engineering – Road Maintenance

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	

1	The Application of ICT	2	32	-	32	
2	Health and Safety and the Environment	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics and Principles of Statistics	3	48	-	48		
2	General Physics	2	32	-	32		Mathematics
3	General Physics Laboratory	1	-	32	32		General Physics
4	Technical Drawing	1	-	64	64		
	Total	7	80	96	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	Basic Mathematics and Principles of Statistics	
2	Drawing and Map Reading	1	-	64	64	Technical Drawing	
3	Geology and Laboratory	2	16	32	48		
4	Building Details and Materials	1	16	-	16		
5	Surveying and Operations	2	16	48	64	Basic Mathematics and Principles of Statistics	
6	Asphalt Bitumen and Laboratory	2	16	32	48		
7	Soil Mechanics	2	32	-	32		
8	Soil Mechanics Laboratory	1	-	32	32		
9	English for Specific Purposes	1	-	48	48		
10	Welding Technology and Workshop	1	-	64	64		
11	The Application of Computer in Road Maintenance	1	-	64	64	Basic Mathematics and	

						Principles of Statistics	
12	Equipping and Managing Road Maintenance Workshops	18	160	384	544		
	Total	1	-	48	48		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Concrete Technology	2	32	-	32		
2	Concrete Technology Laboratory	1	-	32	32		
3	Geometric Design of Roads	2	32	-	32	Basic Mathematics and Principles of Statistics	
4	Implementation of Road Superstructure	2	16	32	48	Geometric Design of Road	
5	Maintenance and Restoration of Technical Buildings	1	-	48	48	Implementation of Road Superstructure Geometric Design of Road	
6	Asphalt Maintenance and Restoration	3	48	-	48	Implementation of Road Superstructure	
7	Executive Management of Road and Building Maintenance	2	32	-	32	Maintenance and Restoration of Technical Buildings	
8	Road Construction Machinery	2	32	-	32	Equipping and Managing of Road Maintenance Workshop	
9	Traffic	2	32	-	32	Basic Mathematics and Principles of Statistics	
10	Safety Equipment and Installations of Roads and Tunnels	1	-	48	48	Implementation of Road Superstructure Geometric Design of Road	
11	Workshop and the Application of Machinery	2	-	96	96	Road Construction Machinery	
	Total	20	224	256	480		

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Professional Ethics	2	32	-	32	
4	Skills and Business Rules	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite (s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	Principles of Computer	2	32	-	32		
3	Computer Workshop	1	-	48	48		Principles of Computer
	Total	5	64	48	112		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Surveying	2	32	-	32		General Mathematics
2	Surveying Operations	1	-	48	48		Surveying
3	Computer-assisted Technical Drawing	2	-	96	96	Computer Principles Computer Workshop	
4	Introduction to Urban Economics(Emphasis on Transportation)	2	32	-	32	General Mathematics	Principles of Urban Planning
5	Principles of Urban Planning	2	32	-	32		
6	Principles of Urban Designing	2	32	-	32		
7	Laws and Regulations of Traffic and Transportation	2	32	-	32		
8	Principles of Urban Environments	2	32	-	32		
	Total	15	192	144	336		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Principles of Traffic Engineering	3	48	-	48	General Mathematics	
2	Traffic Engineering Project	1	-	48	48		Principles of Traffic Engineering
3	Planning Urban Transportation and Traffic	3	48	-	48	General Mathematics	Principles of Traffic Engineering
4	Project of Planning Urban Transportation and Traffic	1	-	48	48		Planning of Urban Transportation and Traffic
5	Principles of Road Geometric Design	2	32	-	32	General Mathematics	Principles of Traffic Engineering
6	Geometric Road Design Workshop	1	-	48	48		Principles of Road Geometric Design
7	English for Specific Purposes	2	32	-	32	General English	
8	The Application of Computer in Transportation and Traffic (1)	1	-	64	64	General Mathematics, Computer Principles	
9	The Application of Computer in Transportation and Traffic (2)	2	-	96	96	General Mathematics, Computer Principles	
10	Workshop on Traffic and Safety Equipment	1	-	48	48	Principles of Traffic Engineering- Principles of Road Geometry	Transportation and Traffic Safety
11	Transportation and Traffic Safety	2	32	-	32	Principles of Geometric Design	Road - Construction and Superstructure
12	Road Construction and Road Superstructure	2	32	-	32	Principles of Road Geometric Design	
13	Road Superstructure Workshop	1	-	48	48		Road Construction and Superstructure
14	Traffic Culture Education Workshop	1	-	48	48	Principles of Traffic Engineering -	Urban Transportation

						Planning Urban Transportation and Traffic	Laws and Regulations
15	Technical Reports and Seminars	2	-	96	96	Workshop on Traffic Culture Education – Principles of Road Geometric Design - Computer The Application in Transportation and Traffic (1)	Road Construction and Superstructure
	Total	**25**	**224**	**544**	**768**		

Non-Continuous Technical Associate's Degree in Mining – Exploration

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Health and Safety	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	Technical Drawing	1	-	48	48		
3	General Physics	2	32	-	32		
4	General Physics Laboratory	1	-	32	32		
5	General Chemistry	2	32	-	32		
6	General Chemistry Laboratory	1	-	48	48		
	Total	9	96	128	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Geology	2	32	-	32		

2	Geological Survey	1	-	48	48		General Geology
3	Mineralogy	2	32	-	32		
4	Mineralogy Laboratory	1	-	32	32		Mineralogy
5	Lithology	1	16	-	16	Mineralogy	
6	Lithology Laboratory	1	-	32	32		Lithology
7	English for Specific Purposes	2	32	-	32		
8	Surveying	1	16	-	16	General Mathematics	
9	Surveying Operations	1	-	64	64		Surveying
10	Analytical Chemistry	2	32	-	32		
11	Analytical Chemistry Laboratory	1	-	32	32		
12	Instrumental Analysis Chemistry	1	16	-	16	Analytical Chemistry	
13	Cartography and Map Reading	1	-	48	48	General Geology	
	Total	**17**	**176**	**256**	**432**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Mining Drilling	2	32	-	32	General Geology	
2	Drilling Machinery	1	16	-	16	-	Mining Drilling
3	Drilling Machinery Workshop	1	-	48	48	General Geology	Drilling Machines
4	Geological Surveying	1	-	48	48	-	General Geology
5	Underground Surveying	1	16	-	16	Surveying	Surveying Operation
6	Underground Surveying Operation	1	-	64	64	-	Underground Surveying
7	Remote Sensing	2	32	-	32	General Physics	
8	Remote Sensing Workshop	1	-	48	48	-	Remote Sensing
9	Structural Geology	2	32	-	32	General Geology	-
10	Economic Geology	2	32	-	32	Mineralogy	-
11	The Application of Statistics in Mine Exploration	1	16	-	16	General Mathematics	

12	Principles of Exploration and Resource Estimation	2	32	-	32	-	The Application of Statistics in Mine Exploration
13	Exploratory Sampling	1	16	-	16	-	Building Geology
14	Thin Sections Workshop	1	-	48	48	Lithology	Exploratory Sampling
15	Mine Safety Workshop	1	-	48	48	Occupational Safety and Health	
	Total	20	224	304	528		

Non-Continuous Technical Associate's Degree in Cement - Quality Control

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		General Mathematics
3	General Chemistry	2	32	-	32		
4	General Physics Laboratory	1	-	32	32		General Physics
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
	Total	8	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Fluid Mechanics	2	32	-	32	General Physics	
2	Principles of Electricity	2	32	-	32	-	

3	Principles of Electricity Workshops	1	-	48	48	-	Principles of Electricity
4	General Electronics	2	32	-	32	Principles of Electricity	
5	General Electronics Laboratory	1	-	32	32	-	
6	Thermodynamics	2	32	-	32	General Physics	
7	Heat Transfer	2	32	-	32	Thermodynamics	
8	Heat Transfer Laboratory	1	-	32	32	-	
9	Measurement and Precision Instrument	2	32	-	32	General Physics	
10	Measurement and Precision Instrument Laboratory	1	-	32	32	-	Measurement and Precision Instrument
11	Principles of Hydraulics and Pneumatics Control	2	16	48	64	Thermodynamics	
	Total	18	208	192	400		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Cement Raw Materials	2	32	-	32	General Chemistry	
2	English for Specific Purposes	2	32	-	32	-	
3	Technology of Controlling Raw Materials	3	32	48	80	General Electronics	
4	Technology of Clinker Cement Control	3	32	48	80	Technology of Controlling Raw Materials	
5	PLC Control and Laboratory	2	16	48	64	Logic Circuits	
6	Logic Circuits	2	32	-	32	General Electronics	
7	Logic Circuits Laboratory	1	-	32	32	-	Logic Circuits
8	Electronic Measurement	2	32	-	32	Logic Circuits	
9	Industrial Electronics	2	32	-	32	General Electronics	
10	Industrial Electronics Laboratory	1	-	32	32		Industrial Electronics
11	The Environment and Filtration	1	16	-	16		
	Total	21	288	208	496		

Non-Continuous Technical Associate's Degree in Gold and Jewelry – Metal Sheet

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Business Skills and Rules	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Chemistry of Precious Metals	3	48	-	48		
2	Technical Computations	2	32	-	32		
3	Materials Science	2	32	-	32		Precious Metal Chemistry
	Total	7	112	-	112		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Precious Metals and Alloys	2	32	-	32		
2	Workshop on Jewelry Drawing	1	-	64	64		
3	Melting Precious Metals	2	32	-	32		
4	Melting Precious Metals Workshop	1	-	48	48		Melting Precious Metals
5	Rolling Precious Metals	3	48	-	48		-
6	Rolling Precious Metals Workshop	1	-	48	48		Rolling Precious Metals
7	Metalworking	3	48	-	48		
8	Metalworking Workshop	2	-	96	96		Metalworking
9	Sawing Workshop	1	-	48	48		
10	Welding Precious Metals	2	32	-	32		
11	Welding Precious Metals Workshop	1	-	48	48		Welding Precious Metals
	Total	19	192	352	544		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Press Working Precious Metals	2	32	-	32	-	-
2	Press Working Precious Metals Workshop	1	-	48	48	Metalworking Workshop	Press Working Precious Metals
3	Hollowing and Dapping Block	2	32	-	32	Metalworking	-
4	Workshop on Hollowing and Dapping Block	2	-	96	96	Metalworking Workshop	Hollowing and Dapping Block
5	Pipe and Profile Production	2	32	-	32	Rolling Precious Metals	-
6	Pipe and Profile Production Workshop	1	-	48	48	Rolling Precious Metals Workshop – Welding Workshop	Pipe and Profiling
7	Electroforming	2	32	-	32	Chemistry of Precious Metals– Materials Science	
8	Methods of Reducing Precious Metals Shortage	2	32	-	32		
9	English for Specific Purposes	2	32	-	32		
10	Finishing Procedure Operations	2	16	48	64	Materials Science	Last semester
	Total	18	208	240	448		

Non-Continuous Technical Associate's Degree in Mechanics - Mechanics of Road Construction Machinery

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Report Making	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title		Hours		Corequisite(s)

		No. of Credits	Theoretical	Practical	Total	Prerequisite(s)	
1	General Mathematics and Principles of Statistics	2	32	-	32		
2	General Physics	1	16	-	16		
3	General Physics Laboratory	1	-	32	32		General Physics
4	Computer Principles	1	16	-	16		
5	Computer Workshop	1	-	48	48		
	Total	6	64	80	128		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	General Physics	
2	Strength of Materials	1	16	-	16	Statics	
3	Strength of Materials Laboratory	1	-		48		Strength of Materials
4	Technical Documentation and Documents	2	32	-	32		
5	Hydraulics 1	2	32	-	32		
6	Industrial Drawing and Map Reading	1	16	-	16		
7	Workshop on Industrial Drawing and Map Reading	1	-	48	48		Technical Drawing and Reading It
8	Workshop Theory	2	32	-	32		
9	Diesel Engine Technology	2	32	-	32		
10	Diesel Engine Workshop	1	-	64	64		Diesel Engine Technology
11	Hydraulics Laboratory 1	1	-	48	48		
	Total	16	192	160	400		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Hydraulics 2	2	32	-	32	Hydraulics 1	-
2	Powertrain	2	32	-	32	Hydraulics 1	-
3	Powertrain Workshop	1	-	64	64	-	Powertrain
4	Road Construction Machinery 1	3	48	-	48	Hydraulics 1	-

5	Hydraulics Workshop 1	1	-	64	64	-	Road Construction Machinery 1
6	Road Construction Machinery 2	3	48	-	48	Road Construction Machinery 1	-
7	Hydraulics Workshop 2	1	-	64	64	-	Road Construction Machinery 2
8	Road Construction Machinery 3	2	32	=-	32	Road Construction Machinery 2	-
9	Road Construction Machinery 4	2	32	-	32	-	Road Construction Machinery 3
10	Troubleshooting, Maintenance, and Preventive Repair	2	32	-	32	Basic Mathematics and Statistics	
11	Automotive Electricity and Electronics	2	32	-	32	Road Construction Machinery 2	
12	Automotive Electricity and Electronics Workshop	1	-	64	64	-	
13	Hydraulics Workshop 3	1	-	64	64	-	
14	English for Specific Purposes	2	32	-	32	General English	
	Total	25	320	320	640		

Non-Continuous Technical Associate's Degree in Mechanics – Mechanics of Industrial Machinery

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title		Hours		Corequisite(s)

		No. of Credits	Theoretical	Practical	Total	Prerequisite(s)	
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
3	General Chemistry and Materials Science	3	48	-	48		
4	General Physics Laboratory	1	-	32	32		General Physics
	Total	**10**	**144**	**32**	**176**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics and Strength of Materials	3	48	-	48	General Mathematics	
2	Strength of Materials Laboratory	1	-	32	32		
3	Thermodynamics	2	32	-	32		
4	Thermodynamics Laboratory	1	-	32	32		
5	Fluid Mechanics	2	32	-	32	General Physics	
6	Fluid Mechanics Laboratory	1	-	32	32		
7	Principles of Electricity	2	16	64	80	General Physics	
8	Technical Drawing 1	2	16	48	64		
9	General Workshop	1	-	64	64		
10	Heat Transfer	2	32	-	32		
	Total	**17**	**176**	**272**	**448**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32		
2	Principles of Corrosion Control	2	32	-	32	General Chemistry and Materials Science	
3	Manufacture Methods	2	32	-	32	-	
4	Welding Workshop	1	-	64	64	-	
5	Machine Components	2	32	-	32	Statics and Material Resistance	
6	Factory Machinery and Projects	3	32	64	80	-	
7	Hydraulics and Pneumatics	3	32	48	80	Fluid Mechanics	

8	Service and Maintenance of Machinery and Industrial Protection	2	32	-	32	General Chemistry and Materials Science	
9	Machine Tools Workshop	1	-	64	64		
10	Technical Drawing 2	2	-	96	96	Technical Drawing 1	
	Total	**20**	**224**	**336**	**544**		

Non-Continuous Technical Associate's Degree in Automotive Quality Control

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Report Making	2	32	-	32	
4	The Application of ICT	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		General Mathematics
3	General Chemistry	2	32	-	32		
4	General Physics Laboratory	1	-	48	48		General Physics
	Total	**8**	**112**	**48**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statistics and Probability	3	48	-	48	General Mathematics	
2	English for Specific Purposes	2	32	-	32	General English	
3	Machine Components	2	32	-	32		
4	Industrial Drawing	2	-	128	128		
5	Statics	2	32	-	32	General Physics	
6	Materials Science	2	32	-	32	General Chemistry	
7	Strength of Materials	2	32	-	32	General Physics	

	Total	15	208	128	336		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Measurement Systems	2	32	-	32		
2	Welding Workshop	2	-	128	128	Industrial Drawing	
3	Sheet Metal Workshop	1	-	64	64	Industrial Drawing	
4	Problem-Solving Methods for Continuous Improvement	2	32	-	32		
5	Management Systems of Quality and Elevation	2	32	-	32		
6	The Application of Computer in Quality Control	2	-	128	128	Quality Control Planning	
7	Statistical Process Control	2	32	-	32	Quality Control Planning	
8	Quality Control of Welding Process	2	32	-	32		
9	Quality Control of Metal Sheet Process	2	32	-	32		
10	Quality Control Planning	2	32	-	32		
11	Tolerance	2	32	-	32		Measurement Systems
12	Fracture Analysis	2	32	-	32		Problem-solving Methods For Continuous Improvement
13	Measurement Systems Workshop	1	-	64	64		Measurement Systems
	Total	**24**	**288**	**384**	**672**		

Non-Continuous Technical Associate's Degree in Mechanics- Heavy Machinery Repairs

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	

4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	Mechanical Physics	2	32	-	32		General Mathematics
3	General Chemistry	2	32	-	32		
4	General Physics Laboratory	1	-	48	48		General Physics
5	Principles of Computer	2	16	32	48		
	Total	10	128	64	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Materials Science	2	32	-	32	General Chemistry	
2	English for Specific Purposes	2	32	-	32	General English	
3	Statics and Strength of Materials	3	48	-	48	Mechanical Physics	
4	Strength of Materials Laboratory	1	-	32	32	Statics and Strength of Materials	
5	Hydraulics and Pneumatics	2	32	-	32	Statics and Strength of Materials Mechanical Physics	
6	Hydraulics and Pneumatics Workshop	1	-	48	48		Hydraulics and Pneumatics
7	General Mechanics Workshop	2	16	48	64	Precision Measurement Systems and Calibration	
8	Welding Workshop	1	-	48	48		
9	Industrial Electricity Workshop	1	-	48	48		
10	General Drawing	2	16	48	64		
	Total	17	176	272	448		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Machine Components	2	32	-	32	General Mathematics Statics and Strength of Materials	
2	Bearings and Lubrication	2	32	-	32	Machine Components	
3	Automotive Repair	2	16	48	64		
4	Precision Measurement Systems and Calibration	2	16	32	48	General Mathematics	
5	Numerical Control Machines	3	32	48	80	Principles of Computer General Mechanics Workshop	
6	Planning Repair, Installation, and Maintenance	3	32	48	80	General Mathematics - General Mechanics Workshop	Supervisory Control on Machine Processes
7	Repair of Industrial Machinery (Basic)	3	32	64	*96*	Statics and Strength of Materials	
8	Repair of Industrial Machinery (Advanced)	3	32	64	*96*	Repair of Industrial Machinery (Basic)	
	Total	20	224	304	528		

Non-Continuous Technical Associate's Degree in Chemical Industry - Gas Refining

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Professional Ethics	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		General Mathematics
3	General Chemistry	2	32	-	32		
	Total	6	96	-	96		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Oil and Gas Chemistry	2	32	-	32	General Chemistry	
2	Principles of Electricity and Transformers	2	32	-	32	-	General Mathematics General Physics
3	Workshop on Electricity and Transformers	1	-	48	48	-	Principles of Electricity and Transformer
4	Applied Thermodynamics	2	32	-	32	General Mathematics General Physics	
5	Heat Transfer	2	32	-	32	General Mathematics General Physics	-
6	Heat Transfer and Thermodynamics Laboratory	1	-	32	32		Applied Thermodynamics Heat Exchangers and Evaporators
7	Materials and Energy Balances	2	32	-	32		Applied Thermodynamics General Chemistry
8	Fluid Mechanics	2	32	-	32	General Mathematics General Physics	
9	Map Reading and Symbols	1	-	48	48		
10	Precision Instrument and Control Systems	2	32	-	32		Principles of Electricity and Transformers

11	Workshop on Precision Instrument and Control Systems	1	-	48	48		Precision Instrument and Control Systems
12	Health ,Safety, Environment, and Fire Fighting	1	16	-	16		
13	Workshop on Safety, Health, Environment, and Fire Fighting	1	-	48	48		
	Total	20	240	224	464		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Gas Processing with Amine and Mercury	1	16	-	16	Oil and Gas Chemistry	
2	Workshop on Gas Processing with Amine and Mercury	1	-	48	48	-	
3	Sulfur Recycling	1	16	-	16	Oil and Gas Chemistry	
4	Combustion, Furnace, and Incineration Machine	1	16	-	16	General Physics	Heat Transfer
5	Process of Stabilizing Gaseous Liquids, Desiccation, and Refrigeration Cycle	1	16	-	16	Applied Thermodynamics Oil and Gas Chemistry	
6	Workshop on Process of Stabilizing Gaseous Liquids, Desiccation, and Refrigeration Cycle	1	-	48	48		
7	English for Specific Purposes	2	32	-	32	General English	
8	Corrosion in Oil, Gas, and Petrochemical Industries	1	16	-	16	General Chemistry	
9	Workshop on Corrosion in Oil, Gas, and Petrochemical Industries	1	-	48	48		
10	Heat Exchangers and Evaporators	1	16	-	16	Heat Transfer	
11	Towers and Separators	1	16	-	16	Materials and Energy Balance	
12	Towers and Separators Workshop	1	-	48	48	Heat Exchangers and Evaporators Heat Exchangers and Evaporators	
13	Pipes, Fittings and Valves	1	16	-	16	Fluid Mechanics	

14	Workshop of Pipes, Fittings, and Valves	1	-	48	48		
15	Pumps and Compressors	2	32	-	32	-	
16	Turbines	2	32	-	32	Fluid Mechanics Applied Thermodynamics	
17	Workshop of Pumps, Compressors, and Turbines	2	-	96	96		Pumps and Compressors
	Total	21	224	336	560		

Non-Continuous Technical Associate's Degree in Electricity - Subway Electricity

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		General Mathematics
3	Applied Mathematics	3	48	-	48	General Mathematics	
4	General Physics Laboratory	1	-	48	48		General Physics
	Total	10	144	48	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introduction to Subway Industry	2	32	-	32		
2	Electric Circuits 1	3	48	-	48	General Mathematics	Applied Mathematics
3	Electric Machines	3	48	-	48	Electric Circuits 1	

4	Electric Machines Laboratory	1	--	48	48	-	Electric Machines
5	Applied Electronics	2	32	-	32	General Physics	Electric Circuits 1
6	Applied Electronic Laboratory	1	-	32	32	Electric Circuits 1	Applied Electronics
7	Industrial Drawing	1	-	32	32		
8	Principles of Power Systems	2	32	-	32	Electric Machines	
9	Computer Programming	2	16	32	48		
	Total	17	208	144	352		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Subway Electrical Substation	2	32	-	32	Electric Machines	Principles of Power Systems
2	Transmission Systems of Subway Electricity	2	32	-	32	Principles of Power Systems	Subway Electrical Substations
3	Workshop on Substations, and Transmission Systems of Subway Electricity	1	-	48	48	Electric Machines, Principles of Power Systems	Subway Electrical Substations Transmission Systems of Subway Electricity
4	Electrical Installations of Stations and Tunnels	2	32	-	32		Principles of Power Systems
5	Electromechanical Installations of Stations, and Tunnels	2	32	-	32	Electric Machines	
6	Workshop on Electromechanical Installations of Stations, and Tunnels	1	-	48	48		Electromechanical Installations of Station and Tunnel
7	Electrical Equipment of Subway Trains	2	32	-	32	Electric Machines	
8	Workshop on Electrical Equipment of Subway Trains	1	-	48	48		Electrical Equipment of Subway Trains
9	Maintenance and Repair Systems	2	16	48	64	Introduction to Subway Industry	
10	Safety in Electricity, Regulations, and Guidelines of Subway	1	16	-	16		

11	Control Systems of SubwayCommand Center	2	16	32	48		
12	Electrical Drawing	1	-	32	32		
13	Electricity Workshop	1	-	48	48		
	Total	20	208	304	512		

Non-Continuous Technical Associate's Degree in Civil Engineering - Subway Lines and Buildings

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Applied Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
	Total	6	96	-	96		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introduction to Subway Industry	2	32	-	32		
2	Statics	2	32	-	32	Applied Mathematics General Physics	
3	Strength of Materials	2	32	-	32	Applied Mathematics General Physics	
4	Building Materials and Concrete Technology	3	48	-	48	-	
5	Laboratory of Building Materials and Concrete Technology	1	-	48	48		Building Materials and Concrete Technology

6	Construction Drawing and Type of Maps	2	16	64	80		
7	General Geology	2	32	-	32		
8	Welding and Metal Sheeting Workshop	1	-	64	64		
9	Surveying and Operations	3	32	64	96	Applied Mathematics	
10	Woodworking, Molding, and Operations	1	16	-	16		
	Total	19	240	240	480		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Construction of Concrete and Steel Buildings	2	32	-	32	Building Materials and Concrete Technology	
2	Quantity Surveying and Estimate	2	16	48	64		
3	The Application of Subway Substructure Machinery	2	32	-	32		
4	Substructure of Subway Lines and Project	3	32	64	96	The Application of Subway Substructure Machinery	
5	Superstructure of Subway Lines and Project	3	32	64	96	The Application of Subway Substructure Machinery	
6	The Application of Subway Superstructure Machinery	2	32	0	32		
7	Seam Welding of Rail and Operations	2	16	64	80		
8	Maintenance of Lines and Operations	2	16	64	80		
9	Railway Switches and Design of Operation Lines	2	32	-	32		
10	Protective Buildings and Drainage	2	16	64	80	Building Materials and Concrete Technology General Geology	
	Total	22	256	368	624		

Non-Continuous Technical Associate's Degree in Civil Engineering - Subway Structures

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
	Total	6	96	-	96		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introduction to Subway Industry	2	32	-	32		
2	Statics	2	32	-	32	Applied Mathematics General Physics	
3	Strength of Materials	2	32	-	32	Applied Mathematics General Physics	
4	Building Materials and Concrete Technology	3	48	-	48	-	
5	Laboratory of Building Materials and Concrete Technology	1	-	48	48		Building Materials and Concrete Technology
6	General Geology	2	32	-	32		
7	Surveying	2	16	64	80		
8	Technical Drawing and Construction Drawing	2	16	48	64		
9	General Workshop of Building	1	-	64	64		
	Total	17	208	224	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Construction Operations and Related Machinery	2	32	-	32	Building Materials and Concrete Technology, General Workshop of Building	
2	Construction of Concrete and Steel Structures	2	16	48	64	Building Materials and Concrete Technology	
3	Electrical and Mechanical Installations and Workshops	3	32	48	80	-	
4	Foundation Construction	2	32	-	32	Construction Operations and Related Machinery, Construction of Concrete and Steel Structures	
5	Destructive Factors in Underground Structures	2	32	-	32	Building Materials and Concrete Technology General Geology	
6	Building Problems Diagnosis	2	16	48	64		
7	Repair Techniques	2	16	48	64	Building Problems Diagnosis	
8	Measurement Instrument in Tunnels	2	16	48	64		
9	Land Reinforcement for Underground Structures	2	32	-	32		
10	Maintenance and Repair of Subway Underground Structures	3	32	48	80	The last semester	
11	Quantity Surveying and Estimate	2	16	48	64		
	Total	24	272	336	608		

Non-Continuous Technical Associate's Degree in Electricity - Electric Power Plants

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	

	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
3	General Workshop	1	-	64	64		
	Total	7	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electric Circuits	3	48	-	48		
2	Electric Circuits Laboratory	1	-	48	48		Electric Circuits
3	Electrical Measurement and Laboratory	2	16	64	80		Electric Circuits
4	Principles of Electric Machines	2	32	-	32	Electric Circuits	
5	Principles of Power Systems	2	32	-	32		Electric Circuits
6	Applied Electronics	2	32	-	32	Electric Circuits	
7	Applied Electronics Laboratory	1	-	48	48		Applied Electronics
8	Transformers	2	32	-	32	Electric Circuits	Electric Circuits
9	Transformers Workshop	1	-	64	64		Transformers
10	Logic Circuits	2	32	-	32		Electric Circuits
11	Workshop on Electricity and Trigger Circuits	1	-	64	64		Electric Circuits
	Total	19	224	288	512		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of High Voltage and Insulation	2	32	-	32	Principles of Power Systems	
2	Laboratory of Insulation and High Voltage	1	-	48	48	-	Principles of High Voltage and Insulation

3	Panel Workshop	1	-	64	64	Workshop on Electricity and Trigger Circuits	
4	Reading Power Plant Maps	1	-	64	64		
5	English for Specific Purposes	2	32	-	32	General English	
6	Electricity Generation	2	32	-	32	Electric Circuits	
7	Linear Control	2	32	-	32	Electric Circuits	
8	Direct Current Machines	2	32	-	32	Principles of Electric Machines	
9	Synchronous and Asynchronous Machines	1	16	-	16	Principles of Electric Machines	
10	Direct Current Machines Workshop	1	-	48	48		Direct Current Machines
11	Synchronous and Asynchronous Machines Workshop	1	-	48	48		Synchronous and Asynchronous Machines
12	Relay and Power Plant Protection	2	32	-	32	Principles of Electric Machines Principles of Power Systems Transformers	Direct Current Machines Synchronous and Asynchronous Machines
13	Laboratory of Relay and Power Plant Protection	1	-	48	48		Relay and Power Plant Protection
14	Substation and Supply Power Systems inside Power Plants	2	16	48	64	Reading Power Plant Map	
	Total	24	272	336	608		

Non-Continuous Technical Associate's Degree in Electricity - Transmission

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
3	General Workshop	1	-	64	64		
	Total	7	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electric Circuits	3	48	-	48		
2	Electric Circuits Laboratory	1	-	48	48		Electric Circuits
3	Electrical Measurement and Laboratory	2	16	64	80		Electric Circuits
4	Principles of Electric Machines	2	32	-	32	Electric Circuits	
5	Principles of Power Systems	2	32	-	32		Electric Circuits
6	Applied Electronics	2	32	-	32	Electric Circuits	
7	Applied Electronics Laboratory	1	-	48	48		Applied Electronics
8	Transformers	2	32	-	32	Electric Circuits	
9	Transformers Workshop	1	-	64	64		Transformers
10	Statics and Strength of Materials	2	32	-	32	General Physics General Mathematics	
11	Workshop on Electricity and Trigger Circuits	1	-	64	64		Electric Circuits
	Total	19	224	288	512		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of High Voltage, and Insulation	2	32	-	32	Principles of Power Systems	
2	High Voltage and Insulation Laboratory	1	-	48	48	-	Principles of High Voltage and Insulation

3	Panel Workshop	1	-	64	64	Workshop on Electricity and Trigger Circuits	
4	Technical Map Reading	1	-	64	64		
5	English for Specific Purposes	2	32	-	32	General English	
6	High Voltage Substations, Transmission Lines, and Related Equipment	3	48	-	48	Principles of Power Systems Electric Circuits	Principles of High Voltage and Insulation Transformers
7	Operation of High Voltage Substations	2	32	-	32	High Voltage Substations, Transmission Lines, and Related Equipment	
8	Workshop on Repairing Transmission and Substation Equipment	1	-	64	64		High Voltage Substations, Transmission Lines, and Related Equipment
9	Protection of Lines and Substations	2	32	-	32	Principles of Power Systems Transformers	
10	Laboratory of Relay and Protection	1	-	48	48		Protection of Lines and Substations
11	Workshop on Substations Operation	1	-	64	64		Operation of High Pressure Substations
12	Automation and SCADA Systems	2	32	-	32		High Voltage Substations, Transmission Lines and Related Equipment
13	Logic Circuits	2	32	-	32	Electric Circuits	
	Total	**21**	**240**	**252**	**492**		

Non-Continuous Technical Associate's Degree in Repair and Maintenance of Electric Machines

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
3	Physics of Electricity and Magnetisms Laboratory	1	-	48	48		
	Total	7	96	48	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electric Circuits Analysis	3	48	-	48	General Physics	
2	Electrical Measurement	2	32	-	32	General Physics	
3	Measurement and Circuits Laboratory	1	-	48	48	Electric Circuits Analysis	Electrical Measurement
4	General Electronics	2	32	-	32	Electric Circuits Analysis	
5	General Electronics Laboratory	1	-	32	32		General Electronics Measurement and Circuits Laboratory
6	Principles of Logic Circuits	2	32	-	32		General Electronics
7	Logic Circuits Laboratory	1	-	32	32	Principles of Logic Circuits	General Electronics Laboratory
8	Properties of Materials in Electricity	2	32	-	32		

9	Machine Components	1	16	-	16		Technical Drawing
10	English for Specific Purposes and Catalog Reading	2	16	32	48		
11	Machine Tools Workshop	1	-	48	48		
12	Technical Drawing	1	-	48	48		
	Total	19	208	240	448		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	DC Machines and Transformers	2	32	-	32		Electric Circuits
2	DC Machines and Transformers Workshop	1	-	64	64	DC Machines and Transformers Measurement and Circuits Laboratory	
3	Induction Motors	2	32	-	32	DC Machines and Transformers	
4	Synchronous Machines	2	32	-	32		Induction Motors
5	AC Machines Workshop	1	48	-	48	Measurement and Circuits Laboratory Induction Motors Synchronous Machines	
6	DC Machine Repair Workshop	1	-	64	64	DC Machines and Transformers	
7	Transformer Repair Workshop	1	-	64	64	DC Machines and Transformers	
8	Three-Phase Electric Motors Workshop	1	-	64	64	Induction Motors	
9	Single-Phase Motors Workshop	1	-	64	64	Induction Motors	
10	Workshop on Electrical Repair of Synchronous Machines	1	-	64	64	Synchronous Machines	
11	Workshop on Installation and Maintenance of Electric Machines	1	-	64	64	DC Machines and Transformers Induction Motors	
12	Protection of Electric Machines	1	16	-	16	Induction Motors	

						Synchronous Machines	
13	Industrial Electronics	2	32	-	32	DC Machines and Transformers General Electronics	
14	Industrial Electronics Laboratory	1	-	48	48		Industrial Electronics
15	Laboratory of Speed Control of Electric Motors	1	-	48	48	Workshop of DC Machines and Transformers	Industrial Electronics Laboratory
16	Linear Control Systems	2	32	-	32		
	Total	21	224	544	768		

Non-Continuous Technical Associate's Degree in Electricity- Electric Power Distribution

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
3	General Workshop	1	-	64	64		
	Total	**7**	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electric Circuits	3	48	-	48		
2	Electric Circuits Laboratory	2	32	-	32	Electric Circuits	
3	Electrical Measurement and Laboratory	2	16	64	80		Electric Circuits

4	Principles of Electric Machines	2	32	-	32	Electric Circuits	
5	Principles of Power Systems	2	32	-	32		Electric Circuits
6	Applied Electronics	2	32	-	32	Electric Circuits	
7	Applied Electronics Laboratory	1	-	48	48		Applied Electronics
8	Transformers	2	32	-	32	Electric Circuits	
9	Transformers Workshop	1	-	64	64		Transformers
10	Statics and Strength of Materials	2	32	-	32		
11	Electricity and Trigger Circuits Workshop	1	-	64	64		Electric Circuits
	Total	19	224	288	512		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of High Voltage and Insulators	2	32	-	32	Principles of Power Systems	
2	Laboratory of High Voltage and Insulators	1	-	48	48	-	Principles of High Voltage and Insulators
3	Panel Workshop	1	-	64	64	Workshop on Electricity and Circuits Control	
4	Technical Map Reading	1	-	64	64	-	
5	English for Specific Purposes	2	32	-	32	General English	
6	Electric Power Distribution Systems	2	32	-	32	Electrical Circuits	
7	Standards of Cables and Overhead Distribution Networks	2	32	-	32	Electric Power Distribution Systems	
8	Lighting Equipment and Computations	2	32	-	32	Electric Power Distribution Systems Statics and Strength of Materials	Principles of High Voltage and Insulators
9	Overhead Distribution Workshop	1	-	64	64	Electric Circuits	Electric Power Distribution Systems
10	Cable Terminations and Joints Workshop	1	-	64	64		Equipment and Standards of

							Distribution Networks
11	Workshop on Cable Troubleshooting	1	-	64	64		Standards of Cable and Underground Distribution Networks
12	Hot Line Workshop	1	-	64	64		Equipment and Standards Overhead Distribution Networks
13	Logic Circuits	2	32	-	32		Electric Circuits
14	Equipment and Standards of Overhead Distribution Networks	2	32	-	32		
	Total	**21**	**224**	**732**	**592**		

Non-Continuous Technical Associate's Degree in Civil Engineering - Wastewater Networks and Treatment Plants

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics and Laboratory	3	32	32	64		
3	General Chemistry and Laboratory	3	32	32	64		
4	Technical Drawing and Map Reading	1	-	48	48		
	Total	**10**	**112**	**112**	**224**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Statics and Strength of Materials	3	48	-	48	General Mathematics	
2	General Hydraulics and Laboratory	3	32	32	64		Statics and Strength of Materials
3	General Workshop of Building	1	-	64	64		
4	Statistics and Probability	2	32	-	32		
5	Hydrology and Hydrogeology	2	32	-	32	General Hydraulics and Laboratory	
6	Chemistry of Water and Wastewater and Laboratory	3	32	32	64	General Chemistry and Laboratory	
	Total	**16**	**208**	**128**	**336**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Process of Wastewater Treatment and Treatment Plants	2	32	-	32	Chemistry of Water and Wastewater and Laboratory	
2	Corrosion and Sedimentation	2	32	-	32		Chemistry of Water and Wastewater and Laboratory
3	Networks of Collecting Surface Water and Wastewater	2	32	-	32	General Hydraulics and Laboratory	
4	Industrial Wastewater Treatment	2	32	-	32		
5	Operation and Maintenance of Wastewater Networks and Installations	2	32	-	32		Process of Wastewater Treatment and Treatment Plants
6	Wastewater Equipment Workshop	1	-	64	64		Process of Wastewater Treatment and Treatment Plants

7	Microbiology of Water and Wastewater	2	32	-	32		Process of Wastewater Treatment and Treatment Plants
8	Laboratory of Microbiology of Water and Wastewater	1	-	48	48		Microbiology of Water and Wastewater
9	Surveying and Operations	2	16	48	64	General Mathematics	
10	Industrial Electricity and Workshop	2	16	48	64	General Physics and Laboratory	
11	The Application of Pumps	2	32	-	32	General Hydraulics and Laboratory	
12	Pumps Workshop	1	-	64	64		The Application of Pumps
	Total	**21**	**256**	**272**	**528**		

Non-Continuous Technical Associate's Degree in Civil Engineering - Groundwater Resources

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	Physics and Laboratory	3	32	32	64		
3	Chemistry and Laboratory	3	32	32	64		
	Total	9	112	64	176		

Table of Core Courses

#	Course Title		Hours	Prerequisite(s)	Corequisite(s)

		No. of Credits	Theoretical	Practical	Total		
1	Map Reading and Technical Drawing	1	-	48	48		
2	Remote Sensing	2	16	32	48		
3	Meteorology	2	32	-	32		
4	Statistics and Probability	2	32	-	32	General Mathematics	
5	General Hydraulics and Laboratory	3	32	32	64	General Mathematics	
6	Engineering Geology	2	16	32	48		
7	Surveying and Operations	2	16	48	64	General Mathematics	
8	Statics and Strength of Materials	3	48	-	48	General Mathematics	
	Total	17	192	192	384		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Hydrology (Surface Water)	2	32	-	32	General Mathematics	
2	Applied Hydrogeology (Groundwater)	2	32	-	32	General Hydrology	Engineering Geology
3	English for Specific Purposes	2	32	-	32	General English	
4	Chemical Physics of Water	2	16	32	48		
5	General Hydrology (Groundwater)	2	16	48	64	General Mathematics	
6	The Application of Pumps	2	16	48	64	Physics	
7	Water Well Drilling and Operations	2	16	48	64	Engineering Geology	
8	General Geophysics and Operations	2	16	48	64	Engineering Geology	The Application of Pumps
9	The Application of Software in Groundwater	1	-	48	48		Applied Hydrogeology (Groundwater)
10	Legal Rights and Privacy of Groundwater Resources	2	32	-	32	Hydrology and Hydrogeology	
11	Sedimentation and Laboratory	2	16	48	64	Engineering Geology	
	Total	21	224	320	544		

Non-Continuous Technical Associate's Degree in Civil Engineering - Surface Water Resources

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	Physics and Laboratory	3	32	32	64		
3	Chemistry and Laboratory	3	32	32	64		
	Total	9	112	64	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Map Reading and Technical Drawing	1	-	48	48		
2	Remote Sensing	2	16	32	48		
3	Meteorology	2	32	-	32		
4	Statistics and Probability	2	32	-	32	General Mathematics	
5	General Hydraulics and Laboratory	3	32	32	64	General Mathematics	
6	Engineering Geology	2	16	32	48		
7	Surveying and Operations	2	16	48	64	General Mathematics	
8	Statics and Strength of Materials	3	48	-	48	General Mathematics	
	Total	17	192	192	384		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Hydrology (Surface Water)	2	32	-	32	General Mathematics	
2	Applied Hydrogeology (Groundwater)	2	32	-	32	General Hydrology	Engineering Geology
3	English for Specific Purposes	2	32	-	32	General English	
4	Chemical Physics of Water	2	16	32	48		

5	General Hydrology (Groundwater)	2	16	48	64	General Mathematics	
6	Sedimentation and Laboratory	2	16	48	64	Engineering Geology	
7	Legal Rights and Privacy of Groundwater Resources	2	32	-	32	Hydrology and Hydrogeology	
8	Watershed Management	2	32	-	32	Engineering Geology	Sedimentation and Laboratory
9	Hydrometry and Operations	2	16	48	64		
10	The Application of Software in Surface Water	1	-	48	48		Applied Hydrogeology
	Total	20	256	160	416		

Non-Continuous Technical Associate's Degree in Civil Engineering - Dams and Networks

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	Physics and Laboratory	3	32	32	64		
3	Chemistry and Laboratory	3	32	32	64		
	Total	9	112	64	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics and Strength of Materials	3	48	-	48	General Mathematics	
2	General Hydraulics and Laboratory	3	32	32	64	General Mathematics	
3	Engineering Geology	2	16	32	48	-	

4	Surveying and Operations	2	16	48	64	General Mathematics	
5	Hydrology and Hydrogeology	2	32	-	32	General Mathematics	
6	Application of Pumps	2	16	48	64	General Physics	
7	Chemical Physics of Water	2	16	32	48	General Physics - General Chemistry	
8	General Workshop of Building	1	-	48	48		
	Total	17	176	240	416		

Common Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Legal Rights and Privacy of Water Resource	2	32	-	32	Hydrology and Hydrogeology	
2	English for Specific Purposes					General English	
3	Building Materials and Concrete	2	32	-	32		
4	Building Materials and Concrete Laboratory	1	-	48	48		Building Materials and Concrete
5	Dam and Network Machinery	2	32	-	32		
	Total	9					

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Water, Soil, and Plant Relationships	2	32	-	32	Erosion and Sedimentation Hydrology	
2	Irrigation Methods	2	32	-	32		Water, Soil, and Plant Relationships
3	Operation and Maintenance of Networks	2	32	-	32	Hydromechanical Networks and Structures	
4	Hydromechanical Networks and Structures	2	32	-	32		General Hydraulics
5	Hydrometry and Operations (Network)	2	16	64	80	Hydrology and Hydrogeology	
6	Erosion and Sedimentation (Network)	2	16	32	48	General Hydraulics	
	Total						

Table of Specialized Courses (Dam)

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Types and The Application of Dams	2	32	-	32		General Hydraulics
2	Precision Instrument in Dams	2	32	-	32	Types and The Application of Dams	
3	Dam Operation and Maintenance	2	32	-	32	Types and The Application of Dams	
4	Watershed Management	2	32	-	32	Engineering Geology	Erosion and Sedimentation
5	Hydrometry and Operation (Dam)	2	16	48	64	Vector Capture and Operations	
6	Erosion and Sedimentation (Dam)	2	16	32	48	General Hydraulics	
	Total						

Non-Continuous Technical Associate's Degree in Media - Technical Communication

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Professional Ethics	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	General Electronics	3	48	-	48		
4	Electric and Electronics Workshop	1	-	64	64		
	Total	9	128	64	192		

Table of Core Courses

#	Course Title		Hours	Prerequisite(s)	Corequisite(s)

		No. of Credits	Theoretical	Practical	Total		
1	Introduction to Broadcasting Technology	2	32	-	32		
2	Electric Circuits	3	48	-	48	General Mathematics	
3	Electrical Circuits Laboratory	1	-	48	48		Electric Circuits
4	Digital Circuits Workshop	1	-	64	64	Electric Circuits	
5	Computer Networking Workshop	1	-	64	64		
6	Principles of Digital Television	2	32	-	32	Introduction to Broadcasting Technology	
7	Computer Configuration Workshop	1	-	48	48	Digital Circuits Workshop	
8	Digital Processors Workshop	1	-	64	64		
9	English for Specific Purposes	2	32	-	32	General English	
	Total	14	144	288	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Specialized Electronics	2	32	-	32	General Electronics	
2	Specialized Electronics Laboratory	1	-	48	48	-	Specialized Electronics
3	Principles of Telecommunications	2	32	-	32	Electric Circuits	Specialized Electronics
4	Fields and Waves	2	32	-	32	General Physics	
5	Principles of Telecommunications Laboratory	1	-	48	48	-	
6	Antenna	2	32	-	32	Fields and Waves	
7	Telecommunications of Transmission Systems	2	32	-	32		Principles of Telecommunications
8	AM Radio Transmitters	2	32	-	32	Specialized Electronics Principles of Telecommunications	
9	FM Radio Transmitters	2	32	-	32	Specialized Electronics	

						Principles of Telecommunications	
10	TV Transmitters	2	32	-	32	Specialized Electronics Principles of Telecommunications	
11	Measuring Broadcasting Systems Workshop	1	-	64	64		
12	Optical Telecommunications	2	32	-	32	Fields and Waves, General Electronics	
13	Microwave Workshop	1	-	64	64	Fields and Waves	
14	Satellite Telecommunications	2	32	-	32	Principles of Telecommunications	
15	Measuring Transmission Systems Workshop	1	-	64	64	-	
16	Acoustics 1	2	32	-	32	General Mathematics- General Physics	
	Total	27	352	288	640		

Non-Continuous Technical Associate's Degree in Metallurgy - Aluminum Manufacture

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Technical Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	Aluminum Chemistry and Laboratory	2	16	32	48		
4	Technical Drawing	1	-	64	64		
	Total	7	90	96	186		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Principles of Casting	2	16	32	48	General Physics - Aluminum Chemistry and Laboratory	
2	Electrochemistry and Laboratory	2	16	32	48	Aluminum Chemistry and Laboratory	
3	Fuel and Industrial Kilns	2	16	32	48	General Physics	
4	Heat Transfer	2	32	-	32	General Mathematics - General Physics	
5	Metallography	2	16	32	48	General Physics	
6	Principles of Industrial Electricity	2	16	32	48		
7	English for Specific Purposes	2	32	-	32	General English	
8	Hydraulics and Pneumatics	2	16	32	48		
9	Raw Materials and Manufacture Methods	2	16	32	48		
	Total	18	176	224	400		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Anode Fabrication and Firing Technology	2	16	64	80	General Physics Aluminum Chemistry and Laboratory	
2	Anode Workshop	1	-	64	64	-	Anode Fabrication and Firing Technology
3	Aluminum Manufacture Technology in Redox Cells	2	16	64	80	General Physics	Electrochemistry
4	Redox (Reduction–Oxidation Workshop	1	-	64	64	-	Aluminum Manufacture Technology in Redox Cells
5	Aluminum Ingot Casting Technology	3	32	48	80	Principles of Casting Heat Transfer	
6	Pour and Shear Workshop	1	-	64	64		Aluminum Ingot Casting Technology

7	Quality Control in Process	1	-	48	48		Aluminum Ingot Casting Technology
8	Refractory in Aluminum Industry	2	16	48	64	General Physics	Electrochemistry
9	Electricity in Aluminum Industry	1	-	48	48	Principles of Industrial Electricity	
10	Industrial Automation and Monitoring	2	16	48	64	Principles of Industrial Electricity	
11	Equipment and Machinery	2	16	48	64	Technical Drawing	Hydraulics and Pneumatics
12	Environment and Pollution Control Methods in Aluminum Industry	2	16	32	48	Anode Fabrication and Firing Technology	
13	Alternate Industries of Aluminum Ingots	2	16	32	48	Anode Workshop	Aluminum Ingot Casting Technology
	Total	22	144	672	816		

Non-Continuous Technical Associate's Degree in Mechanics - Gas Turbines

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of IT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	Technical Drawing	2	16	48	64		
4	General Workshop of Mechanics	1	-	48	48		
	Total	8	96	96	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Thermodynamics and Heat Transfer	2	32	-	32	Mathematics and General Physics	
2	Fluid Mechanics and Laboratory	3	32	32	64	Mathematics and General Physics	
3	Industrial Hydraulics and Laboratory	2	16	32	48	Fluid Mechanics and Laboratory	
4	Industrial Electricity and Workshop	2	16	48	64	General Physics	
5	English for Specific Purposes	2	32	-	32	General English	
6	Statics and Strength of Materials	2	32	-	32	Mathematics and General Physics	
7	Bearings and Lubrication	2	32	-	32		
8	Precision Instrument Workshop	1	-	48	48		
	Total	16	192	160	352		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Gas Turbines	2	16	48	64		Thermodynamics
2	Maintenance Planning	2	32	-	32		
3	Mechanical Vibrations and Laboratory	2	16	32	48	General Physics	
4	Ruston Turbines	2	16	48	64	Gas Turbines	
5	Solar Center and Saturn Turbines	2	16	48	64	Gas Turbines	
6	Rolls-Royce Turbine and Power	3	32	48	80	Gas Turbines	
7	Machines Alignment	2	16	32	48		
8	Types and The Application of Pumps	2	16	48	64	Fluid Mechanics and Laboratory	
9	Types and The Application of Compressors	2	16	48	64	Thermodynamics	
10	Diesel Engines and Workshop	2	16	48	64	General Workshop of Mechanics	
11	Industrial Piping Workshop	1	-	48	48	General Workshop of Mechanics	
12	Specialized Map Reading	1	-	32	32	Technical Drawing	

	Total	23	192	480	672		

Non-Continuous Technical Associate's Degree in Mechanics - Pumps and Compressors

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of IT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48	Pre-University Mathematics	
2	General Physics	2	32	-	32	Pre-University Physics	
3	Technical Drawing	2	16	48	64		
4	General Workshop of Mechanics	1	-	48	48		
	Total	8	96	96	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Thermodynamics	2	32	-	32	Mathematics and General Physics	
2	Fluid Mechanics and Laboratory	3	32	32	64	Mathematics and General Physics	
3	Industrial Hydraulics and Laboratory	2	16	32	48	Fluid Mechanics and Laboratory	
4	Industrial Electricity and Workshop	2	16	48	64	General Physics	
5	English for Specific Purposes	2	32	-	32	General English	
6	Mechanical Vibrations and Laboratory	2	16	32	48		
7	Specialized Map Reading	1	-	32	32	Technical Drawing	
8	Statics and Strength of Materials	2	32	-	32		

9	Instrumentation Workshop	1	-	48	48	General Physics	
	Total	17	176	240	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Gas Turbines	2	16	48	64	Thermodynamics	
2	Maintenance Planning	2	32	-	32		
3	Bearings and Lubrication	2	32	-	32	Fluid Mechanics	
4	Pumps Troubleshooting	3	32	48	80	Types and The Application of Pumps	
5	Troubleshooting of Positive Displacement Compressors	2	16	48	64	Types and The Application of Compressors	
6	Machines Alignment	2	16	48	64	Types and The Application of Compressors	
7	Industrial Piping Workshop	1	-	48	48		
8	Types and the Application of Pumps	2	16	48	64	Fluid Mechanics and Laboratory	
9	Types and the Application of Compressors	2	16	48	64	Thermodynamics	
10	Diesel Engines and Workshop	2	16	48	64	General Workshop of Mechanics	
11	Troubleshooting of Centrifugal Compressors	2	16	48	64	Types and The Application of Compressors	
	Total	22	640				

Non-Continuous Technical Associate's Degree in Petroleum - Operation of Production and Processing

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of IT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48	Pre-university Mathematics	
2	General Physics	2	32	-	32	Pre-university Physics	
3	General Chemistry and Laboratory	3	32	32	64	Pre-university Chemistry	
4	Organic Chemistry	2	32	-	32	General Chemistry	
	Total	10	144	32	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Fluid Mechanics and Laboratory	3	32	32	64	Mathematics General Physics	
2	Principles of Thermodynamics	2	32	-	32	Mathematics General Physics	
3	Energy and Material Balance	2	32	-	32	Mathematics General Chemistry	
4	Heat Transfer and Laboratory	3	32	32	64	Mathematics General Physics	
5	Principles of Electricity and Workshop	2	16	48	64	General Physics	
6	Introduction to Oil and Gas Exploration and Extraction	1	16	-	16		
7	English for Specific Purposes	2	32	-	32	General English	
	Total	15	192	112	304		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Oil Processing	2	16	48	64	Introduction to Oil and Gas Exploration and Extraction	
2	Oil and Gas Pipelines	1	16	-	16	Fluid Mechanics	
3	Gas Well Installations (Production and Injection)	2	16	64	80		

4	Exploitation Operations	2	16	64	80	Oil Processing	
5	Desalination Operations	2	16	64	80	Oil Processing	
6	Downhole Operations	2	16	48	64	Introduction to Oil and Gas Exploration and Extraction	
7	Gas Processing	2	16	48	64	Introduction to Oil and Gas Exploration and Extraction – Principles of Thermodynamics	
8	Methods of Measurement and Control Systems and Workshops	2	16	64	80		
9	Processing Machinery and Workshop	2	16	64	80	Fluid Mechanics Principles of Thermodynamics	
10	Oil and Gas Chemistry Laboratory	1	-	48	48	Organic Chemistry	
11	Corrosion in Oil and Gas Industries	1	16	-	16	General Chemistry	
12	Industrial Water Treatment	1	16	-	16	General Chemistry	
13	Industrial Drawing and Map Reading	2	16	48	64		
	Total	22	192	560	752		

Non-Continuous Technical Associate's Degree in Petroleum - Oil and Gas Wells Drilling

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of IT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48	Pre-university Mathematics	
2	General Physics	2	32	-	32	Pre-university Physics	

3	General Chemistry and Laboratory	3	32	32	64	Pre-university Chemistry	
4	Mechanics Workshop	1	-	64	64	General Chemistry	
5	Electricity Workshop	1	-	48	48		
	Total	**10**	**112**	**144**	**256**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Precision Instrument Workshop	3	32	32	64	Mathematics and General Physics	
2	Industrial Hydraulics and Laboratory	2	32	-	32	Mathematics and General Physics	
3	Statics and Strength of Materials	2	32	-	32	Mathematics and General Chemistry	
4	Introduction to Petroleum Geology	3	32	32	64	Mathematics and General Physics	
5	Operations of Exploration, Extraction, and Production	2	16	48	64	Introduction to Petroleum Geology	
6	Safety in Drilling Industry	1	16	-	16		
7	English for Specific Purposes	2	32	-	32	General English	
8	Industrial Drawing and Map Reading	2	16	32	48		
	Total	**16**	**176**	**224**	**400**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Drilling Equipment and Machinery	2	16	48	64		Mechanics Workshop
2	Drilling Tools and Workshop	3	32	64	96	Drilling Equipment and Machinery	
3	Drilling Operations and Workshop	3	32	64	96	Industrial Hydraulics and Laboratory Drilling Tools and Workshop Drilling Technology and Workshop	
4	Drilling Technology and Workshop	3	32	64	96	Statics and Strength of Materials	
5	Drilling Fluids	3	48	-	48	Industrial Hydraulics and Laboratory	

						General Chemistry and Laboratory	
6	Drilling Fluids Laboratory	1	-	48	48	General Chemistry and Laboratory	
7	Equipment of Downhole and Wellheads	3	32	48	80	Drilling Tools and Workshop	
8	Repair and Completion of Wells	2	48	-	48	Equipment of Downhole and Wellheads	
	Total	**20**	**256**	**288**	**544**		

Non-Continuous Technical Associate's Degree in Mechanics - Fixed Equipment of Processing

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48	Pre-university Mathematics	
2	General Physics	2	32	-	32	Pre-university Physics	
3	Technical Drawing	2	16	48	64		
4	General Mechanics Workshop	1	-	48	48	General Chemistry	
	Total	8	96	96	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Specialized Map Reading	1	-	48	48	Technical Drawing	
2	English for Specific Purposes	2	32	-	32	General English	
3	Precision Instrument Workshop	1	-	48	48		
4	Introduction to Steel	2	32	-	32		

5	Non-destructive Testing (NDT)	1	-	48	48		
6	Corrosion in Oil Industry	1	16	-	16		
7	Statics and Strength of Materials	2	32	-	32	General Physics	
8	Welding Workshop	1	-	48	48	General Mechanic Workshop	
9	Fluid Mechanics and Laboratory	3	32	32	64	General Mathematics	
10	Industrial Electric Workshop	1	-	48	48	General Physics	
11	Industrial Piping Workshop	1	-	48	48	General Mechanic Workshop	
12	Industrial Hydraulics and Laboratory	2	16	32	48	Fluid Mechanics and Laboratory	
	Total	18	160	352	512		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Pipeline and Piping Systems	2	16	48	64	Piping Workshop	
2	Piping Map	2	16	48	64	Specialized Map Reading	
3	Industrial Valves and Workshop	2	16	48	64		
4	Troubleshooting and Evaluation of Pipelines	2	32	-	32	Industrial Piping Workshop	
5	Heat Exchangers, Towers, and Furnaces	3	32	48	80		
6	Storage Tanks and Pressure Vessels	2	32	-	32		
7	Repair and Reconstruction of Pipelines	2	32	-	32	Troubleshooting and Evaluation of Pipelines	
8	Specialized Welding and Workshop	3	32	48	80	Welding Workshop	
9	Principles of Working with Rotary Machinery	3	32	48	80	Fluid Mechanics and Laboratory Thermodynamics	
	Total	21	240	288	528		

Non-Continuous Technical Associate's Degree in Gas - Production Operations and Processing

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	

2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48	Pre-university Mathematics	
2	General Physics	2	32	-	32	Pre-university Physics	
3	Technical Drawing	2	16	48	64		
4	General Mechanics Workshop	1	-	48	48	General Chemistry	
	Total	8	96	96	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Fluid Mechanics and Laboratory	3	32	32	64	Mathematics and General Physics	
2	Principles of Thermodynamics	2	32	-	32	Mathematics and General Physics	
3	Energy and Materials Balance	2	32	-	32	General Chemistry	
4	Heat Transfer and Laboratory	3	32	32	64	General Physics	
5	Principles of Electricity and Workshop	2	16	48	64	General Physics	
6	Introduction to Oil and Gas Exploration and Extraction	1	16	-	16		
7	English for Specific Purposes	2	32	-	32	General English	
	Total	**15**	**224**	**112**	**288**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Oil Processing	2	16	48	64	Introduction to Oil and Gas Exploration and Extraction	
2	Oil and Gas Pipelines	1	16	-	16	Fluid Mechanics	

3	Gas Well Installations (Production and Injection)	2	16	64	80		
4	Gas and Liquid Gas Operations 1	2	16	64	80	Gas Processing	
5	Gas and Liquid Gas Operations 2	2	16	64	80	Gas and Liquid Gas Operations 1	
6	Operations of Boosting Pressure and Gas Injection	2	16	64	80	Gas Processing	
7	Gas Processing	2	16	48	64	Introduction to Oil and Gas Exploration and Extraction	
8	Workshop on Measurement and Control Systems	1	-	64	64		
9	Processing Machinery and Workshop	2	16	64	80	Fluid Mechanics and Thermodynamic	
10	Oil and Gas Chemistry Laboratory	1	-	48	48	Organic Chemistry	
11	Corrosion in Oil and Gas Industries	1	16	-	16	General Chemistry	
12	Gas Desalination and Sweetening Operations	1	16	-	16	General Chemistry	
13	Industrial Drawing and Map Reading	2	16	64	80	Energy and Material Balance	
	Total	22	192	592	784		

Non-Continuous Technical Associate's Degree in Civil Engineering - Pre-fabricated Structures

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Entrepreneurship	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	Building Materials	1	16	-	16		

4	Building Materials Laboratory	1	-	32	32		
	Total	**6**	**80**	**32**	**112**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	General Mathematics-General Physics	
2	Surveying and Workshop	2	16	48	64	General Mathematics - Technical Drawing	
3	Technical Drawing and Construction Drawing	2	-	96	96	General Mathematics	
4	The Application of Computer Software in Pre-fabricated Structures	2	16	48	64	Technical Drawing and Construction Drawing	
5	Mechanics of Soil and Foundations	2	32	-	32	Strength of Materials	
6	Laboratory of Soil and Foundation Mechanics	1	-	32	32	-	
7	Concrete Technology	2	32	-	32	Building Materials Building Materials Laboratory	
8	Concrete Technology Laboratory	1	-	32	32	-	
9	English for Specific Purposes	2	32	-	32	General English	
10	Building Details and their Implementation in Workshop	2	32	-	32	Building Materials - Technical Drawing	
11	Strength of Materials	2	32	-	32	Statics	
	Total	20	224	256	480		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Executive Drawing of Pre-fabricated Structures	2	16	48	64	The Application of Computer Software in Pre-fabricated Structures	
2	Electrical and Mechanical Installations	1	16	-	16	General Physics - Technical Drawing	
3	Workshop of Electrical and Mechanical Installations	1	-	48	48	Electrical and Mechanical Installations	
4	Technical Seminars	1	-	32	32	-	

5	Designing Pre-fabricated Steel Structures	2	32	-	32	Executive Drawing of Pre-fabricated Structures Strength of Materials	
6	Workshop on Welding, Metal Sheeting, and Welding Inspection	2	16	48	64	-	
7	Construction Methods of Metal Structures	2	16	48	64	Designing Pre-fabricated Steel Structures	
8	Construction Methods of Concrete Structures	2	16	48	64	Design of Pre-fabricated Concrete Structures	
9	Designing Pre-fabricated Concrete Structures	2	32	-	32	Construction Drawing of Prefabricated Structures Strength of Material	
10	Equipping and Managing Workshop Facilities	2	32	-	32		
11	Quantity Surveying and Estimate	2	16	48	64	Building Details and their Implementation in Workshop	
12	Workshop on Pre-fabricated Structures	2	-	96	96	Designing Pre-fabricated Concrete Structures Designing Prefabricated Steel Structures	
	Total	**21**	**192**	**416**	**608**		

Non-Continuous Technical Associate's Degree in Tobacco Industries

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Chemistry	2	32	-	32		
4	Basic Statistics	2	32	-	32		
	Total	8	128	-	128		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Introduction to Machinery	1	16	-	16		
2	Introduction to Machinery Workshop	1	-	48	48		
3	Hydraulics and Pneumatics	2	32	-	32		
4	Electromechanics	2	32	-	32		
5	Industrial Drawing	2	-	96	96		
6	English for Specific Purposes	1	16	-	16		
7	General Workshop	1	-	48	48		
8	Maintenance and Repairs	1	16	-	16		
9	Maintenance and Repairs Workshop	1	-	48	48		
10	Tobacco Raw Materials	1	16	-	16		
11	Workshop on Tobacco Raw Materials	1	-	48	48		
12	Non-Tobacco Raw Materials	2	32	-	32		
	Total	16	160	288	448		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Cigarette Manufacturing Machinery	2	32	-	32		
2	Workshop on Cigarette Manufacturing Machinery	1	-	64	64		
3	Packaging Machinery	2	32	-	32		
4	Packaging Machinery Workshop	1	-	64	64		
5	Filter Production Machinery	2	32	-	32		
6	Filter Production Machinery Workshop	1	-	48	48		

7	Recycling and Adjunct Machinery	2	32	-	32		
8	Workshop on Recycling and Adjunct Machinery	1	-	48	48		
9	Tobacco Curing Machinery	2	32	-	32		
10	Workshop on Tobacco Curing Machinery	1	-	64	64		
11	Tobacco Processing Machinery	2	32	-	32		
12	Tobacco Processing Machinery Workshop	1	-	64	64		
13	Quality Control of Tobacco Products	2	32	-	32		
14	Laboratory of Tobacco Products Quality Control	1	-	48	48		
	Total	21	224	400	624		

Non-Continuous Technical Associate's Degree in Telecommunications - Radio Transmission

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electricity Workshop	**1**	**-**	**64**	**64**		
2	Electric Circuits	**3**	**48**	**-**	**48**	Physics of Electricity and Magnetism	
3	Electric Circuits Laboratory	**1**	**-**	48	48		Electric Circuits
4	Applied Electronics	**3**	**48**	**-**	**48**	Electric Circuits	
5	Applied Electronics Laboratory	**1**	**-**	48	48		Applied Electronics
6	Logic Circuits	**2**	**32**	**-**	**32**		Applied Electronics
7	Logic Circuits Laboratory	**1**	**-**	**32**	**32**		Logic Circuits
8	Telecommunications Technology	**3**	**48**	**-**	**48**		Applied Electronics
9	Telecommunications Laboratory	**1**	**-**	**48**	**48**		Telecommunications Technology
	Total	**16**	**176**	**240**	**416**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Electromagnetism	2	32	-	32	Applied Mathematics and Statistics	
2	National Telecommunication Networks	1	16	-	16	-	
3	Transmission Systems	3	48	-	48	Telecommunications Technology	
4	Principles and Components of Radiomax and Microwave	2	32	-	32	-	
5	Workshop on Radiomax System Maintenance	1	-	64	64	Principles and Components of Radio Max and Microwave	
6	Principles of Radio Waves Transmission	2	32	-	32	Telecommunications Technology	
7	PDH and SDH Multiplex Systems	3	48	-	48	Transmission Systems	
8	SDH Multiplex Systems Workshop	1	-	64	64	PDH and SDH Multiplex Systems	
9	PDH Multiplex Systems Workshop	1	-	64	64	PDH and SDH Multiplex Systems	
10	Radio Transmission Systems Workshop	1	-	64	64	Radio Transmission Systems	
11	Principles of Optical Fiber	2	32	-	32		
12	Optical Fiber Workshop	1		64	64		Principles of Optical Fiber
13	The Application of Software Packages	1	-	64	64		
	Total	**21**	**240**	**384**	**624**		

Non-Continuous Technical Associate's Degree in Polymer - Plastic, Rubber, and Decorative Automobile Parts

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Professional Ethics	2	32	-	32	
3	Report Making and Documentation	2	32	-	32	
4	The Application of ICT	2	32	-	32	

	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
4	General Chemistry	3	48	-	48		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
6	General Mechanics Workshop	1	-	64	64		
	Total	10	112	128	240		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Polymer Chemistry	3	48	-	48	General Chemistry	
2	Polymer Chemistry Laboratory	1	-	48	48		Polymer Chemistry
3	Physical and Mechanical Properties of Polymers	2	32	-	32		Polymer Chemistry
4	Laboratory of Physical and Mechanical Properties of Polymers	1	-	48	48		Physical and Mechanical Properties of Polymers
5	Deformation and Flow of Polymeric Materials	3	48	-	48	General Physics	
6	Laboratory of Deformation and Flowof Polymeric Materials	1	-	48	48		Deformation and Flowof Polymeric Materials
7	Computer-Assisted Industrial Drawing (1)	2	-	64	64	General Mathematics	
8	Computer-Assisted Industrial Drawing (2)	3	-	96	96	Computer-assisted Industrial Drawing (1)	
	Total	16	128	304	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Raw Materials and Manufacture Processes of Plastic Parts	3	48	-	48	Physical and Mechanical Properties of Polymers	
2	Workshop on Raw Materials and Manufacture Processes of Plastic Parts	1	-	48	48		Raw Materials and Manufacture Processes of Plastic Parts
3	Raw Materials and Manufacture Processes of Rubber Parts	3	48	-	48	Physical and Mechanical Properties of Polymers	
4	Workshop on Raw Materials and Manufacture Processes of Rubber Parts	1	-	48	48		Raw Materials and Manufacture Processes of Rubber Parts
5	Complementary Processes for Plastic, Rubber, and Decorative Automobile Parts	2	32	-	32	Raw Materials and Manufacture Processes of Rubber Parts Raw Materials and Manufacture Processes of Plastic Parts	
6	Standards and Tests of Raw Materials,and Plastic, Rubber, and Decorative Automobile Products	2		64	64	Raw Materials and Manufacture Processes of Rubber Parts Raw Materials and Manufacture Processes of Plastic Parts	Complementary Processes for Plastic, Rubber, and Decorative Automobile Parts
7	Statistical Quality Control (Theoretical)	2	32	-	32	General Mathematics	
8	Statistical Quality Control (Applied)	1	-	32	32	General Mathematics	Statistical Quality Control (Theoretical)
9	Quality Assurance in Automotive Industry	2	32	-	32		Statistical Quality Control (Theoretical)
10	English for Specific Purposes	2	32	-	32	General English	
11	Health, Safety and Environment	2	32	-	32	Polymer Chemistry	

	Total	21	256	192	448		

Non-Continuous Technical Associate's Degree in Polymer - Composites and Foam Components

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Professional Ethics	2	32	-	32	
3	Report Making and Documentation	2	32	-	32	
4	The Application of ICT	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
4	General Chemistry	3	48	-	48		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
6	General Mechanics Workshop	1	-	64	64		
	Total	10	112	128	240		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Polymer Chemistry	3	48	-	48	General Chemistry	
2	Polymer Chemistry Laboratory	1	-	48	48		Polymer Chemistry
3	Physical and Mechanical Properties of Polymers	2	32	-	32		Polymer Chemistry
4	Laboratory of Physical and Mechanical Properties of Polymers	1	-	48	48		Physical and Mechanical Properties of Polymers
5	Deformation and Flow of Polymeric Materials	3	48	-	48	General Physics	

6	Laboratory of Deformation and Flow of Polymeric Materials	1	-	48	48		Deformation and Flow of Polymeric Materials
7	Computer-Assisted Industrial Drawing (1)	2	-	64	64	General Mathematics	
8	Computer-Assisted Industrial Drawing (2)	3	-	96	96	Computer-assisted Industrial Drawing (1)	
	Total	16	128	304	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	The Application of Industrial Foams	3	48	-	48	Physical and Mechanical Properties of Polymers	
2	Manufacturing Processes of Industrial Foams	1	-	48	48	Physical and Mechanical Properties of Polymers	
3	A Workshop on Manufacturing Processes of Industrial Foams	3	48	-	48		Manufacturing Processes of Industrial Foams
4	Raw Materials and Processes of Producing Polymer Composites	3	48	-	48	Physical and Mechanical Properties of Polymers	
5	Workshop on Raw Materials and Processes of Producing Polymer Composites	1	-	64	64		Raw Materials and Processes for Producing Polymer Composites
6	Industrial Resin Laboratory	1	-	32	32		Properties and The Application of Industrial Resin
7	Properties and the Application of Industrial Resin	2	32	-	32	Polymer Chemistry	
8	Statistical Quality Control (Theoretical)	2	32	-	32	General Mathematics	
9	Statistical Quality Control (Applied)	1	-	32	32		Statistical Quality Control (Theoretical)

10	Quality Asuurance in Automotive Industry	2	32	-	32		Statistical Quality Control
11	English for Specific Purposes	2	32	-	32	General English	
12	Health, Safety and Environment	2	32	-	32	Polymer Chemistry	
	Total	*21*	*272*	192	*464*		

Non-Continuous Technical Associate's Degree in Civil Engineering (Concrete)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Chemistry	2	32	-	32		
3	General Chemistry Laboratory	1	-	32	32		General Chemistry
4	Technical Drawing and Map Reading	1	-	48	48		
5	General Physics	2	32	-	32		
	Total	9	112	80	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics	2	32	-	32	General Mathematics	
2	Strength of Materials	2	32	-	32	General Mathematics	Statics
3	Building Materials	2	32	-	32		General Geology
4	Building Materials Laboratory	1	-	32	32		Building Materials
5	Surveying	2	32	-	32		General Mathematics

6	Surveying Operations	1	-	48	48		Surveying
7	General Geology	2	32	-	32	-	
8	Soil Mechanics	2	32	-	32	Strength of Materials	
	Total	14	192	80	272		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Aggregate Production Process	1	-	48	48	Building Materials	
2	Concrete Technology	2	32	-	32	Strength of Materials	
3	Concrete Technology Laboratory	1	-	48	48		
4	Cement Technology and Laboratory	2	16	32	48	Building Materials, Building Materials Laboratory	
5	The Application of Additives	2	32	-	32	Concrete Technology	
6	Behavior of Concrete Structures	3	32	32	64		Concrete Technology
7	Standards and the Application of Concrete	2	16	48	64	Concrete Technology, Concrete Technology Laboratory	
8	Concrete Mixing and Processing	2	32	-	32	Building Materials	
9	Concrete Mixing and Processing Laboratory	1	-	48	48	Concrete Technology, Concrete Technology Laboratory	
10	Types and the Application of Rebars	1	16	-	16		
11	Construction Machinery and Concrete Production	3	32	48	80		
12	Methods of Constructing Concrete Structures	2	16	64	80		Behavior of Concrete Structures
13	English for Specific Purposes	2	32	-	32		
	Total	24	256	368	624		

Non-Continuous Technical Associate's Degree in Steel Rolling

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Chemistry	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
	Total	9	112	80	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Physical Properties of Materials	2	32	-	32		
2	Metallographic Laboratory	1	-	48	48	Physical Properties of Materials	
3	Mechanical Properties of Materials	2	32	-	32	Physical Properties of Materials	
4	Laboratory of Mechanical Properties of Materials	1	-	32	32		Mechanical Properties of Materials
5	Welding Technology	1	16	-	16	Physical Properties of Materials	
6	Welding Technology Workshop	1	-	64	64		
7	The Application of Electricity	1	16	-	16		
8	Electricity Workshop	1	-	64	64		
9	English for Specific Purposes	2	32	-	32	General English	

10	Heat Treatment	2	32	-	32		
11	Heat Treatment Laboratory	1	-	32	32		
12	Quality Control	2	32	-	32		
13	Quality Control Laboratory	1	-	48	48		Quality Control
	Total	18	192	288	480		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Machining, Abrasion, and Lubrication	2	32	-	32		Hot Rolling Workshop 2 (Specifically for Rolling Steel Section)
2	Principles of Metal Forming	2	32	-	32		Mechanical Properties of Materials
3	Steel Standards	1	16	-	16	Physical Properties of Materials	
4	Technology and Workshop for Manufacturing and Maintaining Industrial Furnaces	2	32	-	32		
5	The Application of Computer	2	16	48	64		
6	Rolling Defects	2	32	-	32	Hot Rolling 1- Cold Rolling (Specifically for Steel Section Rolling)	Rolling Technology of Flat Steel Products (Specifically for Rolling Flat Steel Products
	Total	**11**	**160**	**48**	**208**		

Elective Courses Table 1 (For Steel Section Rolling)

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Rolls of Rolling Machines	2	32	-	32	Physical Properties of Materials	
2	Hot Rolling 1	2	32	-	32		
3	Hot Rolling Workshop 1	2	-	96	96		Hot Rolling 1
4	Hot Rolling 2	2	32	-	32	Hot Rolling 1	

5	Hot Rolling Workshop 2	2	-	96	96	Hot Rolling Workshop 1	Hot Rolling 2
6	Cold Rolling	2	32	-	32		
	Total	**12**	**128**	**192**	**320**		

Tablr of Elective Courses 2 (For Rolling Steel Flat Products)

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Manufacture Methods and Workshops	2	16	48	64		
2	Technology and Machining of Rolls	2	16	48	64	Manufacture Methods and Workshops	
3	Measurement Methods and Laboratory	2	16	48	64		
4	Workshop on Steel Flat Products Rolling	2	-	96	96		Technology of Steel Flat Rolling
5	Principles of Rolling	2	32	-	32	Principles of Metal Forming	
6	Technology of Rolling Steel Flat Products	2	32	-	32	Principles of Rolling	
	Total	**12**	**112**	**240**	**352**		

Non-Continuous Technical Associate's Degree in Subway Telecommunications

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		

3	Applied Mathematics	2	32	-	32	General Mathematics	
4	General Workshop on Electricity	1	-	48	48		
	Total	8	112	48	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electric Circuits (1)	3	48	-	48		
2	Electric Circuits Laboratory (1)	1		48	48		Electric Circuits 1)
3	Electronics (1)	3	48	-	48		Electric Circuits 1)
4	Electronics Laboratory (1)	1	-	48	48		Electronics (1)
5	Principles of Analog Communication	2	32	-	32		Electric Circuits 1)
6	Logic Circuits	2	32	-	32	Electronics (1)	-
7	Logic Circuits Laboratory	1	-	48	48		Logic Circuits
8	Principles of Digital Telecommunications	3	48	-	48	Principles of Analog Communications	Electric Circuits 1)
9	Telecommunications Laboratory	1	-	48	48		Principles of Analog Communication Principles of Digital Telecommunications
	Total	17	208	192	400		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Computer Networks	3	32	48	80		
2	Subway Wireless Systems 1	3	48	-	48	Principles of Digital Telecommunications	
3	Workshop on Subway Wireless Systems 1	1	-	48	48		Subway Wireless Systems 1
4	Subway Information and Time Systems 1	2	32	-	32		

5	Workshop on Subway Information and Time Systems 1	1	-	48	48		Subway Information and Time Systems 1
6	Subway Video Surveillance 1	2	32	-	32		-
7	Subway Video Surveillance Workshop 1	1		48	48		Subway Surveillance Video 1
8	Subway Switching Systems and Call Centers 1	2	32	-	32		-
9	Workshop on Subway Switching Systems and Call Centers 1	1	-	48	48		Subway Switching Systems and Call Centers 1
10	Introduction to Subway Industry	2	32	-	32		
11	English for Specific Purposes	2	32	-	32		
	Total	20	240	240	480		

Non-Continuous Technical Associate's Degree in Signaling and Control Systems of Subway

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		
3	General Physics Laboratory	1	-	32	32		General Physics
4	Differential Equations	2	32	-	32	General Mathematics	
	Total	9	128	32	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Electric Circuits (1)	3	48	-	48		
2	General Workshop on Electricity	1	-	48	48	Electric Circuits 1	
3	Electronics 1	3	48	-	48	Electric Circuits 1	
4	Electronics Laboratory 1	1	-	48	48		Electronics 1
5	Electric Circuits 2	2	32	-	32	Electric Circuits 1	
6	Logic Circuits	3	48	-	48	Electric Circuits 1	Electronic 1
7	Logic Circuits Laboratory	1	-	48	48		Logic Circuits
8	Electrical Measurement	2	32	-	32		Electric Circuits 1
9	Laboratory of Electrical Measurement	1	-	48	48		Electrical Measurement
10	Introduction to Subway Industry	2	32	-	32		General Mathematics
	Total	19	240	192	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Subway Computer Networks	2	16	48	64	General Physics	
2	Control Systems and Command Centers	2	16	48	64	Logic Circuits	
3	Subway Telecommunication Systems	2	32		32	Electrical Circuits 1	
4	Subway Telecommunication Systems Laboratory	1		48	48		Subway Telecommunicatio n Systems
5	Introduction to Signaling Systems and Safe Operations	3	48	-	48		Control Systems and Command Centers
6	Signaling and Control Systems 1	2	32	-	32		Control Systems and Command Centers
7	Laboratory of Signaling and Control Systems 1	1		48	48		Signaling and Control Systems 1
8	English for Specific Purposes	2	32	-	32		
9	Workshop on Planning Control and Interface Systems of Subway	1		48	48		Signaling and Control Systems 1

	(Traffic, Electricity,Installations, and Lines)						
10	Planning Maintenance and Repair of Signaling and Control Systems 1	3	32	48	80		Signaling and Control Systems 1
	Total	19	208	288	496		

Non-Continuous Technical Associate's Degree in Mechanics - Manufacture of Shoes Sole Molds

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	Application of ICT / Business Skills and Rules	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	Mechanical Physics	2	32	-	32		
3	Industrial Mechanics	3	48	-	48		Mechanical Physics
4	Materials Science	2	32	-	32		
	Total	9	144	-	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Industrial Drawing 1	2	16	32	48		
2	Industrial Drawing 2	2	16	32	48	Industrial Drawing 1	
3	Computer-Assisted Drawing	2	16	32	48		Industrial Drawing 2
4	General Mechanics Technology	1	16	-	16		
5	General Mechanics Workshop	1	-	48	48		General Mechanics Technology

6	Welding Technology	1	16	-	16		
7	Welding Workshop	1	-	48	48		Welding Technology
8	Casting Technology	1	16	-	16	Materials Science	
9	Casting Workshop	1	-	48	48		Casting Technology
10	Machine Tools Technology	1	16	-	16	General Mechanics Workshop	
11	Machine Tools Workshop	1	-	64	64		Machine Tools Technology
12	CNC Machine Tools Technology	1	16	-	16	Machine Tools Workshop	
13	CNC Machine Tools Workshop	1	-	48	48		CNC Machine Tools Technology
14	Precision Measurement and Laboratory	2	16	48	64		
	Total	**20**	**144**	**400**	**544**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	-	32	General English	
2	Principles of Designing and Drawing Jigs and Fixture	2	16	32	48	Industrial Drawing 2	
3	Introduction to Metal Molds	2	32	-	32	Industrial Drawing 2	
4	Hydraulics, Pneumatics, and Laboratory	2	16	32	48		
5	Technology of Manual Modeling of Footwear Sole Molds	1	16	-	16	Designing and Drawing Footwear Sole Molds	
6	Workshop on Manual Modeling of Footwear Sole Molds	1	-	48	48		Technology of Manual Modeling of Footwear Sole Molds
7	Designing and Drawing Footwear Sole Molds 1	2	16	48	64	Industrial Drawing 2	
8	Workshop on Manufacturing Footwear Sole Molds 1	1	-	64	64	Machine Tools Technology	Designing and Drawing

							Footwear Sole Molds 1
9	Designing and Drawing Footwear Sole Molds 2	2	16	48	64	Designing and Drawing Footwear Sole Molds 1	
10	Workshop on Manufacturing Shoes Sole Molds 2	1	-	64	64		
11	Computer-assisted Drawing Shoes Sole Molds	2	16	48	64	Computer-assisted Drawing	Designing and Drawing Footwear Sole Molds 1
12	Press Machines, Test, and Repair of Shoes Sole Molds	2	16	32	48		Designing and Drawing Footwear Sole Molds 2
	Total	20	176	416	592		

Non-Continuous Technical Associate's Degree in Civil Engineering - Networks and Water Treatment Plant

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics and Laboratory	3	32	32	64		General Mathematics
3	General Chemistry and Laboratory	3	32	32	64		
4	Drawing and Map Reading	1	-	48	48		
	Total	**10**	**112**	**112**	**224**		

Table of Core Courses

			Hours		

#	Course Title	No. of Credits	Theoretical	Practical	Total	Prerequisite(s)	Corequisite(s)
1	Statics and Strength of Materials	3	48	-	48	General Mathematics	
2	General Hydraulics and Laboratory	3	32	32	64		Statics and Strength of Materials
3	General Workshop of Building	1	-	64	64		
4	Statistics and Probability	2	32	-	32		General Mathematics
5	Hydrology and Hydrogeology	2	32	-	32	General Hydraulics and Laboratory	
6	Construction Operations and Machinery	2	32	-	32		
7	Chemistry of Water, Wastewater, and Laboratory	3	32	32	64	General Chemistry and Laboratory	
	Total	**16**	**208**	**128**	**336**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Surveying and Operations	2	16	48	64	General Mathematics	
2	Industrial Electricity and Workshop	2	16	48	64	General Physics Laboratory	
3	The Application of Pumps	2	32	-	32		General Hydraulics and Laboratory
4	Pumps Workshop	1	-	64	64		Pumps Application
5	Process of Water Treatment, and Water Treatment Plants	2	32	-	32	Chemistry of Water, Wastewater and Laboratory	-
6	Corrosion and Sediment	2	32	-	32		Water, Wastewater and Laboratory Chemistry
7	Water Supply and Urban Distribution	2	32	-	32	General Hydraulics and Laboratory	

8	Measurement and Control Systems	2	32	-	32	Industrial Electricity and Workshop	
9	Operations and Maintenance of Water Networks and Installations	2	32	-	32		Process of Water Treatment, and Water Treatment Plants
10	Urban Water Equipment Workshop	1	-	64	64		Process of Water Treatment, and Water Treatment Plants
11	Water and Wastewater Microbiology	2	32	-	32		Process of Water Treatment, and Water Treatment Plants
12	Laboratory of Microbiology of Water and Wastewater	1	-	48	48		
	Total	**21**	**256**	**272**	**528**		

Non-Continuous Technical Associate's Degree in Manufacturing Wires and Cables

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Chemistry	2	32	-	32		
2	General Physics	2	32	-	32		
3	Physics Laboratory	1	-	32	32		General Physics
4	General Mathematics	2	32	-	32		
	Total	7	96	32	128		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Principles of Casting	3	32	48	64		General Chemistry General Physics
2	Types of Wires and Cables	2	32	-	32		
3	Physical Metallurgy	2	32	-	32	General Chemistry General Physics	
4	Physical Metallurgy Laboratory	1	-	32	32		Physical Metallurgy
5	Mechanical Metallurgy and Metals Forming	2	32	-	32	Physical Metallurgy	
6	Laboratory of Mechanical Metallurgy and Metals Forming	1	-	32	32	Mechanical Metallurgy and Molding	
7	Metallography Laboratory	1	-	32	32	Physical Metallurgy	
8	Principles of Electricity in Cable Industry	2	16	32	48	General Physics	
	Total	14	144	176	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Standards of Cables and Wires	2	16	32	48		
2	Sampling Tests of Wires and Cables	1	16	-	16	Standards of Cables and Wires	
3	Laboratory of Sampling Wire and Cable Tests	1	-	32	32	Standards of Cables and Wires	Sampling Tests of Wires and Cables
4	Heat Treatment in Wire and Cable Manufacture	1	16	-	16	Physical Metallurgy	
5	Laboratory of Heat Treatment in Wire and Cable Manufacturing	1	-	32	32	Physical Metallurgy	Heat Treatment in Wire and Cable Manufacturing
6	Casting Technology of Wires and Cables	1	16	-	16	Principles of Casting	
7	Operation of Casting Technology of Wires and Cables	2	-	96	96		Casting Technology of Wires and Cables

8	Stretch and Texture in Wires and Cables	1	16	-	16	Casting Technology of Wires and Cables	
9	Operations of Stretch and Texture in Wires and Cables	2	-	96	96	Casting Technology of Wires and Cables	Stretch and Texture In Wires and Cables
10	Coating Steel Wire Rope	1	16	-	16	Stretch and Texture in Wires and Cables	
11	Operation of Coating Steel Wire Rope	1	-	48	48	Stretch and Texture in Wires and Cables	Coating Steel Wire Rope
12	Defects of Wires and Cables	2	16	48	64	Stretch and Texture in Wires and Cables	
13	Quality Control of Wires and Cables Manufacturing Process	1	16	-	16	Quality Control Sampling Tests of Wires and Cables	
14	Laboratory of Quality Control of Wires and Cables Manufacturing Process	1	-	32	32	Quality Control Sampling Tests of Wires and Cables	Quality Control of Wires and Cables Manufacturing Process
15	Calibration of Laboratory Equipment	1	16	-	16	General Mathematics-General Physics-Principles of Electricity	
16	Laboratory of Calibration of Laboratory Equipment	1	-	32	32	General Mathematics-General Physics-Principles of Electricity	Calibration of Laboratory Equipment
17	English for Specific Purposes	2	32	-	32	General English	
	Total	22	176	448	624		

Non-Continuous Technical Associate's Degree in Port Machinery and Equipment

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	

1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	The Application of Computer	1	-	48	48		General Physics
4	General Chemistry	2	16	32	48		
	Total	**7**	**80**	**80**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Standards of Safety in Port Transportation	2	32	-	32	Loading Centers of Terminals, and Related Equipment – Packaging Systems of Unloading and Loading Goods	
2	Loading Centers of Terminals, and Related Equipment	2	32	-	32	Introduction to Port Transportation Equipment	
3	The Application of Computer in Transportation and Port Services	1	-	48	48	The Application of Computer	
4	Packaging Systems of Loading and Unloading Goods	2	16	32	48	-	
5	Introduction to Hazardous Substances and their Symptoms	2	16	48	64	Harmful Chemical Agents in Workplace	
6	Human Engineering Factors (Ergonomics)	2	16	48	64	Workplace Physical Factors	
7	An Introduction to Port Transportation Equipment	2	16	48	64		
8	Workplace Physical Factors	1	16	-	16		
9	English for Specific Purposes	2	16	32	48		
	Total	**16**	**160**	**256**	**416**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Fire Prevention and Control	1	-	48	48	Harmful Chemical Agents in Workplace	
2	Harmful Chemical Agents in Workplace	2	32	-	32	General Chemistry	
3	Introduction to Offshore Platforms	2	32	-	32		
4	Multimodal and Container Transportation and its Requirements	2	32	-	32	Loading Centers of Terminals and Related Equipment	
5	Principles of Sailing	2	16	48	64	General Physics	
6	Principles of Operations	1	16	-	16	Introduction to Port Transportation Equipment	
7	Laws and Regulations of Domestic and International Transportation	2	32	-	32		
8	Electrical Safety	1	16	-	16	General Physics	
9	Electricity Workshop	1	-	48	48		Electrical Safety
10	The Application of Mobile Crane	2	-	96	96	Introduction to Port Transportation Equipment	
11	The Application of Reach Stacker	2	-	96	96	Introduction to Port Transportation Equipment	
	Total	**18**	**176**	**336**	**512**		

Elective Courses Table

#	*Course Title*	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	The Application of Gantry Crane	2	-	96	96	Introduction to Port Transportation Equipment	
2	The Application of Transtainer	2	-	96	96	Introduction to Port Transportation Equipment	
3	The Application of Straddle Carrier	2	-	96	96	Introduction to Port Transportation Equipment	
	Total	**6**	**-**	**288**	**288**		

Non-Continuous Technical Associate's Degree in Subway Mechanics

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	3	48	-	48		General Mathematics
3	Physics of Electricity and Magnetism	3	48	-	48		
4	Physics of Electricity Laboratory	1	-	32	32		Physics of Electricity and Magnetism
	Total	10	144	32	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Hydraulic Systems	3	48	-	48	Mechanical Physics Industrial Electricity	
2	Hydraulic Systems Workshop	1	-	64	64	Hydraulics Systems	
3	Pneumatic Systems	3	48	-	48	Mechanical Physics Industrial Electricity	
4	Pneumatic Systems Workshop	1	-	64	64	Pneumatic Systems	
5	Industrial Electricity	2	32	-	32	Physics of Electricity and Magnetism	
6	Industrial Electricity Workshop	1	-	64	64	Industrial Electricity	
7	Map Reading (Industrial)	2	32	-	32		
8	Welding Workshop	1	-	64	64		
9	Machine Tools Workshop	1	-	64	64		
	Total	15	160	320	480		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introduction to Subway Industry	2	32	-	32		
2	Electrical and Mechanical Equipment of AC and DC Subway Trains	2	32	-	32	Industrial Electricity Pneumatics Systems	
3	Workshop on Electrical and Mechanical Equipment of AC and DC Subway Trains	1	-	48	48		Electrical and Mechanical Equipment of AC and DC Subway Trains
4	Electrical and Mechanical Equipment of Electric Locomotives and Double Decker Wagons	2	32	-	32	Industrial Electricity Pneumatics Systems	
5	Workshop on Electrical and Mechanical Equipment of Electric Locomotives and Double Decker Wagons	1	-	48	48		Electrical and Mechanical Equipment of Electric Locomotives and Double Decker Wagons
6	Principles of Internal Combustion Engines Operation	3	48	-	48	Mechanical Physics- Industrial Electricity	
7	Auto Mechanic Workshop	1	-	64	64		Principles of Internal Combustion Engines Operation
8	Principles of Power Transmission Systems	2	32	-	32	Mechanical Physics	Principles of Internal Combustion Engines Operation
9	Introduction to Industrial Oil	2	32	-	32		
10	Special Railway Machines	3	32	32	64	Pneumatic Systems Hydraulic Systems	
11	English for Specific Purposes	2	32	-	32		
	Total	21	272	192	464		

Non-Continuous Technical Associate's Degree in Maintenance and Repair of Electrical Systems in Drilling Machines

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	Physics of Electricity and Magnetism	2	32	-	32		
	Total	6	96	-	96		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Applied Mathematics	2	32	-	32	General Mathematics	
2	Electric Circuits	3	48	-	48	General Mathematics and Physics of Electricity	Applied Mathematics
3	Electrical Measurement and Laboratory	2	16	32	48	Electrical Physics	Electric Circuits
4	Applied Electronics	2	32	-	32		Electric Circuits
5	Drilling Operations	2	32	-	32		-
6	Electrical Systems of Drilling Machines	2	32	-	32		Applied Electronics
7	Applied Electronics Laboratory	1	-	32	32		Applied Electronics
8	Electric Circuits Laboratory	1	-	32	32		Electric Circuits

9	Electricity Safety	2	32	-	32	Occupational Safety and Health	
	Total	17	224	96	320		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	AC Electric Drilling Machines	2	32	-	32	Electric Circuits	
2	AC Electric Drilling Machine Workshop	1	-	48	48		AC Electric Drilling Machines
3	DC Electric Drilling Machines	2	32	-	32	Physics of Electricity	Electric Circuits
4	DC Electric Drilling Machines Workshop	1	-	48	48		DC Electric Drilling Machines
5	Cabling	1	16	-	16		
6	Technical Lighting	1	16	-	16		
7	Electrical Precision Instrument and Control	2	32	-	32	General Physics	
8	PLC and Laboratory	2	16	32	48		Electrical Precision Instrument and Control
9	Relays and Electrical Protection	2	32	-	32	Electrical Precision Instrument and Control	
10	Air Conditioning	2	32	-	32		
11	English for Specific Purposes	2	32	-	32	General English	
12	Trigger Circuits and Workshop	2	16	48	64	Physics of Electricity	
13	Map Reading of Electric Drilling Machines	2	32	-	32	Electrical Systems of Drilling Machines	
14	Principles of Maintenance	1	16	-	16	-	
15	Top Drive Power Systems and Workshop	2	16	48	64	Electrical Systems of Drilling Machines	
16	Air Conditioning Workshop	1	-	48	48	-	Air Conditioning

17	Electronic Equipment of Drilling Machine	1	16	-	16	Applied Electronics	Electrical Systems of Drilling Machines
18	Workshop on Electronic Equipment of Drilling Machines	1	-	48	48		Electronic Equipment of Drilling Machines
	Total	28	336	320	656		

Workplace Training Table

No.	Courses	No. of Credits	Hours	Implementation Time
1	Job Survey	1	32	At the Beginning of the Course (Between Student registration, before the end of semester 1)
2	Internship 1	2	240	At The end of second semester
3	Internship 2	2	240	At the end of third semester
4	Internship 3	3	360	At the end of fourth semester
	Total	8	872	

Non-Continuous Technical Associate's Degree in Maintenance and Repair of Drilling Machine Mechanics

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	Occupational Safety and Health	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	Technical Drawing	2	16	48	64		
4	General Mechanics Workshop	1	-	64	64		
	Total	8	96	112	208		

Table of Core Courses

			Hours		

#	Course Title	No. of Credits	Theoretical	Practical	Total	Prerequisite(s)	Corequisite(s)
1	Fluid Mechanics	2	32	-	32	General Mathematics General Physics	
2	Statics and Strength of Materials	2	32	-	32	General Mathematics General Physics	
3	Industrial Hydraulics and Pneumatics	3	32	32	64		Fluid Mechanics
4	Machine Components	2	32	-	32		Statics and Strength of Materials
5	Bearings and Lubrication	2	32	-	32	Fluid Mechanics	
6	Couplings and Alignment	2	16	32	48	Machine Components	
7	Technical English for Mechanics	2	32	-	32	General English	
	Total	15	208	64	272		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Diesel Engines and Workshop	2	16	32	48	General Mechanics Workshop	
2	Pumps in Drilling Industry	2	32	-	32	Fluid Mechanics	
3	Air Compressors Workshop	2	16	32	48	Fluid Mechanics	
4	Draw-works and Brakes	2	32	-	32	Machine Components	
5	Top Drive Mechanics	2	32	-	32	Hydraulics and Pneumatics	
6	Caterpillar Engines and Troubleshooting	2	16	32	48	Diesel Engines	
7	Electrical Systems of Drilling Machines	2	32	-	32	General Physics	
8	Accessory Machines of Drilling	2	32	-	32		
9	Drilling Precision Instrument and Workshop	2	16	32	48		
10	Principles of Maintenance	2	32	-	32	Bearings and Lubrication	

11	Draw-works Hydraulics and HPU	2	32	-	32	Hydraulics and Pneumatics	
12	Drilling Equipment Workshop	1	-	64	64		
13	Drilling Machinery Workshop	1	-	64	64		
	Total	24	288	256	544		

Workplace Training Table

No.	Courses	No. of Credits	Hours	Implementation Time
1	Job Survey	1	32	At the beginning of the course (between student registration, before the end of semester 1)
2	Internship 1	2	240	At the end of second semester
3	Internship 2	2	240	At the end of third semester
4	Internship 3 (just for National Drilling)	3	360	At the end of fourth semester
	Total	8	872	

Non-Continuous Technical Associate's Degree in Drilling Operations

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	The Application of ICT	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	Map Reading	2	16	32	64		
4	Workshop of General Mechanics	1		64	64		
	Total	**8**	**96**	**96**	**208**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Fluid Mechanics of Drilling	2	32	-	32	General Mathematics General Physics	
2	Statics and Strength of Materials	2	32	-	32	General Mathematics General Physics	
3	Drilling Fluids and Laboratory	2	16	32	48		Fluid Mechanics of Drilling
4	Drilling Industry Safety	2	16	48	64		
5	Drilling Machinery	2	32	-	32	Statics and Strength of Materials	
6	Pumps and Compressors	2	32	-	32	Statics and Strength of Materials	
7	Principles of Diesel Engines and Workshop	2	16	48	64	Statics and Strength of Materials	
8	A Workshop on Pump and Compressor Machinery	2	-	96	96		Drilling Machinery Pumps and Compressors
9	Petroleum Geology	2	32	-	32		
	Total	**19**	**224**	**224**	**448**		

Table of Specialized Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	Drill Bit, Drilling Stem, and Workshop	3	32	48	80	Drilling Operations and Workshop	
2	Well Digging	2	32	-	32	Drill Stem (of Drilling)	
3	Drilling Operations and Workshop	3	32	48	80	-	
4	Eruption Control and Workshop	3	32	48	80	Well Digging	
5	Casing and Cementing, and Workshop	2	16	64	80	Well Digging	
6	Fishing and Workshop	2	16	64	80	Drill Stem (of Drilling)	
7	Principles of Drilling Machine Maintenance	1	16	-	16	Drilling Machines	

8	Testing and Completion of Wells, and Workshops	2	16	64	80	Fluid Mechanics of Drilling	
9	English for Specific Purposes	2	32	-	32	General English	
	Total	**20**	**224**	**336**	**560**		

Workplace Training Table

No.	Courses	No. of Credits	Hours	Implementation Time
1	Job Survey	1	32	At the beginning of the course(between student registration, before the end of semester 1)
2	Internship 1	2	240	At the end of semester 2
3	Internship 2	2	240	At the end of third semester
4	Internship 3	3	360	At the end of fourth semester
	Total	8	872	

Non-Continuous Technical Associate's Degree in Railway Operation

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Business Skills and Rules	2	32	-	32	
2	Professional Ethics	2	32	-	32	
3	Entrepreneurship	2	32	-	32	
4	Report Making	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	---	48		
2	General Physics	3	48	---	48		
3	Statistics and Probability	2	32	---	32	General Mathematics	
4	Business Rules	1	16	---	16		
	Total	9	144	---	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	English for Specific Purposes	2	32	---	32	General English	
2	The Application of Computer in Railway	2	16	48	64		
3	Telecommunications and Communication	1	-	48	48		
4	Regulations of Electrical Signs	3	32	48	80		General Operating Regulations
5	Railway Substructure and Superstructure	1	-	48	48		
6	Driving Force, Resistance, and Weight of Train (1)	2	16	48	64		
7	First Aid	1	16	---	16		
8	Introduction to Container Transport Systems	1	16	---	16		
9	Administrative Regulations	2	32	---	32		
10	Financial Regulations	2	32	---	32		
	Total	17	192	240	432		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	An Introduction to Wagons	3	32	48	80		
2	An Introduction to Brakes	2	16	48	64	General Physics	
3	General Operating Regulations	3	32	48	80		
4	Internal Tariff	2	32	---	32		Warehousing, Unloading, Loading, and Carriage
5	Railway Accident Prevention	2	16	48	64		
6	Warehousing, Unloading, Loading, and Carriage	1	---	64	64		
7	Trains Programs and Graphs	3	32	48	80	General Operating Regulations	
8	Regulations of Signs and Identification of Railway Switches	2	16	32	48		
9	Income and Securities	1	16	---	16		

10	Regulations of Dangerous Goods Carriage	2	32	---	32		
	Total	21	224	336	560		

Non-Continuous Technical Associate's Degree in Industrial Electronics

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Entrepreneurship	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics (Electricity and Magnetism)	3	48	-	48		
	Total	6	96	-	96		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Workshop	1	-	48	48		
2	General Electricity Workshop	1		48	48		
3	Map Reading and Electric Drawing	1	-	48	48		
4	Applied Mathematics	2	32	-	32	General Mathematics	
5	Workshop on Electricity and Control Circuits	1	-	64	64	Map Reading and Electric Drawing	
6	Electrical Measurement	2	32	-	32		
7	Electrical Measurement Laboratory	1	-	48	48		
8	Electric Circuits (1)	3	48	-	48	General Physics	
9	Electric Circuits Laboratory	1	-	48	48	Electric Circuits (1)	
10	General Electronics	3	48	-	48	General Mathematics General Physics	Electric Circuits (1)

11	General Electronics Laboratory	1	-	48	48	General Electronics	
12	Principles of Telecommunications	2	32	-	32	General Physics	
	Total	**19**	**192**	**352**	**544**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Logic Circuits	2	32	-	32		General Electronics
2	Logic Circuits Laboratory	1	-	48	48	Logic Circuits	
3	Workshop on Software Package and Printed Circuits	1	-	64	64	Electric Measuring Laboratory	
4	Electric Machines	3	48	-	48	Electric Circuits (1)	
5	Applied Electronics	3	48	-	48	General Electronics	
6	Applied Electronics Laboratory	1	-	48	48	Applied Electronics	
7	Pulse Circuits	2	32	-	32	Logic Circuits	Applied Electronics
8	Pulse Circuits Laboratory	1	-	48	48	Pulse Circuits	
9	English for Specific Purposes	2	32	-	32	General English	
10	Industrial Control	2	32	-	32		
11	Industrial Control Laboratory	1	-	48	48		Industrial Control
12	Microprocessors and Laboratory	2	16	48	64	Logic Circuits	
	Total	**21**	**240**	**304**	**544**		

Non-Continuous Technical Associate's Degree in Food Industries (Beverages)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	1	-	32	32		
3	General Physics Laboratory	2	32	-	32		General Physics
4	General Chemistry	3	48	-	48		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry
	Total	9	112	64	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	2	32	-	32	General Chemistry	
2	Organic Chemistry Laboratory	1	-	32	32		Organic Chemistry
3	Principles of Industrial Equipment and Installations	1	16	-	16		
4	Workshop on Principles of Industrial Equipment and Installations	1	-	48	48		Principles of Industrial Equipment and Installations
5	Marketing and Sales	2	32	-	32		
6	General Microbiology	1	16	-	16		
7	General Microbiology Laboratory	1	-	32	32		
8	Principles of Water and Wastewater Treatment	1	16	-	16	General Chemistry	
9	Laboratory of Principles of Water and Wastewater Treatment	1	-	48	48		
10	Food Chemistry	2	32	-	32	Organic Chemistry	
11	Food Chemistry Laboratory	1	-	32	32		Food Chemistry
	Total	14	144	192	336		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Raw Materials in Beverage Industry	2	32	-	32		
2	Principles of Packaging in Beverage Industry	2	32	-	32		

3	Production Lines Machinery in Beverage Industry	1	16	-	16	Principles of Industrial Equipment and Installations	
4	Workshop on Production Lines Machinery in Beverage Industry	2	-	96	96		Production Lines Machinery in Beverage Industry
5	Soda Production Process	2	32	-	32	Raw Materials in Beverage Industry	
6	Soda Production Operations	1	-	48	48		Process of Soda Production
7	Process of Concentrate and Juice Production	2	32	-	32	Raw Materials in Beverage Industry	
8	Operations of Concentrate and Juice Production	1	-	48	48		Process of Concentrate and Juice Production
9	Planning and Maintenance of Production Machinery	1	-	64	64	Production Lines Machinery in Beverage Industry	
10	Workshop on Planning and Maintenance of Production Machinery	2	32	-	32		Planning and Maintenance of Production Machinery
11	Specialized Microbiology	1	-	32	32	General Microbiology Laboratory	
12	Specialized Microbiology Laboratory	2	32	-	32		Specialized Microbiology
13	Specialized Quality Control	2	-	64	64	Principles of Quality Control	
14	Specialized Quality Control Laboratory	2	32	-	32		Specialized Quality Control
15	English for Specific Purposes						
	Total	24	256	352	608		

Non-Continuous Technical Associate's Degree in Gold and Jewelry (Chain Manufacturing from Precious Metals)

Table of Joint Skill-Based Courses

			Hours	

#	Course Title	No. of Credits	Theoretical	Practical	Total	Prerequisite(s)
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Precious Metals Chemistry						
2	Technical Computations						
3	Materials Science						General Physics
	Total						

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Precious Metals and Alloys						Materials Science
2	Jewelry Design Workshop						
3	Melting Precious Metals						
4	Melting Precious Metal Workshop						Melting Precious Metals
5	Rolling Precious Metals						
6	Precious Metals Rolling Workshop						Rolling Precious Metals
7	Metalworking						
8	Metalworking Workshop						Metalworking
9	Sawing Workshop						
10	Precious Metals Welding						
11	Precious Metals Welding Workshop						Precious Metals Welding
	Total	19	192	352	544		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Manual Chain Making					Precious Metals Welding	

2	Manual Chain Making Workshop					Precious Metals Welding	Manual Chain Making
3	Service and Maintenance of Chain Manufacturing Machinery						Chains Manufacturing Processes
4	Chain Manufacturing Processes					Manual Chain Making	
5	Workshop on Chains Manufacturing Processes						Manual Chain Making
6	Chain Turnery Workshop						Chains Manufacture Processes
	Finishing Operations					Chemistry of Precious Metals	The last semester
7	Methods of Reducing Shortage of Precious Metals					Metalworking	
8	English for Specific Purposes						
	Total	18	144	352	496		

Non-Continuous Technical Associate's Degree in Materials (Cement Production)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32	General Mathematics	
3	General Chemistry	2	32	-	32		
4	General Physics Laboratory	1	-	32	32	General Physics	

5	General Chemistry Laboratory	1	-	32	32	General Chemistry	
	Total	8	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Electricity	2	32	-	32		General Physics
2	Principles of Electricity Workshop	1	-	48	48		Principles of Electricity
3	Materials and Energy Balance	2	32	-	32	General Mathematics - General Chemistry	
4	Thermodynamics	2	32	-	32	General Physics	
5	Heat Transfer	2	32	-	32	Thermodynamics	
6	Heat Transfer Laboratory	1	-	32	32	-	Heat Transfer
7	Measurement and Precision Instrument	2	32	-	32	General Physics	
8	Laboratory of Measurement and Precision Instrument	1	-	48	48		Measurement and Precision Instrument
9	Principles of Hydraulic and Pneumatic Control	2	16	48	64	Thermodynamics	
10	English for Specific Purposes	2	32	-	32		
	Total	**17**	**208**	**176**	**384**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Refractory Materials and Refractory Operations in Cement Industry	2	16	48	64	Materials and Energy Balance	
2	Environment and Filtration	1	16	-	16		
3	Raw Materials and Cement	2	32	-	32	General Chemistry	
4	Clinker and Cement	3	48	-	48	Raw Materials and Cement	
5	Corrosion in Cement Industry	2	32	-	32	General Chemistry	

6	Standards of Cement and Concrete	2	32	-	32	Clinker and Cement	
7	Physical Chemistry of Cement Laboratory	1	-	64	64	General Chemistry	
8	Technology of Raw Materials	2	16	32	48	Materials and Energy Balance	
9	Clinker and Cement Technology	3	32	48	80	Technology of Raw Materials	
10	Energy in Cement Industry	2	16	32	48		Materials and Energy Balance
11	Concrete Workshop	1	-	32	32		Standards of Cement and Concrete
	Total	21	240	256	496		

Non-Continuous Technical Associate's Degree in Pulp and Paper Industries

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	-	32	
2	Principles of Supervision	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Occupational Safety and Health	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Chemistry	2	32	-	32		
3	General Chemistry Laboratory	2	32	-	32		General Chemistry
4	Thermal Physics	1	-	32	32		
5	Thermal Physics Laboratory	1	-	32	32		Thermal Physics
6	Organic Chemistry	2	32	-	32		
	Total	**10**	**128**	**64**	**192**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Cellulose Fibers	3	48	-	48	General Chemistry	
2	Wood and Wood Preparation	2	32	-	32	Cellulose Fibers	
3	Industrial Drawing and Map Reading	1	-	48	48	-	
4	Paper Industry Machinery	2	16	64	80	-	
5	Principles of Electricity	2	32	-	32	-	
6	English for Specific Purposes	2	32	-	32	General English	
7	Precision Instrument, and Operation of DCS-PLC Systems and Scanners	2	32	-	32	Principles of Electricity	
8	Hydraulic and Pneumatic Systems	2	32	-	32		Principles of Electricity
	Total	**17**	**272**	**112**	**384**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Pulp and Paper Processes	2	16	32	48	Cellulose Fibers	
2	Quality Control Laboratory in Paper Industry	2	16	48	64		
3	Recycling Chemicals, Steam, and Energy	2	32	-	32	General Chemistry	
4	Production Line of Recycling Materials	1	-	64	68		Recycling Chemicals, Steam and Energy
5	Pulp Production	2	32	-	32		
6	Pulp Production Line	1	-	64	64		Pulp Production
7	Preparation of Pulp and Additives	2	32	-	32		Pulp Production Line
8	Pulp Preparation Line	1	-	64	64		Preparation of Pulp and Additives
9	Paper Process	2	32	-	32	Principles of Pulp and Paper Processes	
10	Paper Production Line	1	-	64	64	-	Paper Process
11	Water and Wastewater Treatment in Paper Industry	2	32	-	32	General Chemistry	

12	Paper Machine Line	1	-	64	64	-	
13	Types of Pumps and Valves	2	32	-	32	Thermal Physics	Principles of Electricity
	Total	**21**	**224**	**400**	**624**		

Non-Continuous Technical Associate's Degree in Civil Engineering (Qanat)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Report Making	2	32	-	32	
4	The Application of ICT	2	32	-	32	
	Total	8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	General Chemistry	2	32	-	32		General Chemistry
4	General Chemistry Laboratory	1	-	32	32		
	Total	8	112	32	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Statics and Strength of Materials	2	32	-	32		General Mathematics
2	General Geology	2	32	-	32		-
3	Geological Operations	1	-	64	64		General Geology
4	Soil and Rock Mechanics	2	32	-	32	Statics and Strength of Materials	-
5	Soil Mechanics Laboratory	1	-	48	48		Soil and Rock Mechanics
6	Water Quality and Laboratory	2	16	32	48	General Chemistry	

7	Surveying	1	16	-	16	General Mathematics	
8	Surveying Operations	1	-	64	64	General Mathematics	Surveying
9	General Hydraulics	2	32	-	32	General Mathematics	
10	Meteorology and Hydrology	2	32	-	32	General Physics	
	Total	16	192	208	408		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Groundwater	2	22	-	32	General Geology	
2	Hydrometry	1	16	-	16	-	Groundwater Meteorology and Hydrology
3	Hydrometry Operations	1	-	64	64	-	Hydrometry
4	Introduction to Aqueducts	2	32	-	32	-	
5	Implementation of Aquatic Structures with Traditional Materials	2	32	-	32	General Hydraulics	
6	Technical Estimation of Influence Radius of Qanat	2	32	-	32	Groundwater	
7	Legal Estimation of Influence Radius of Qanat	1	16	-	16	Technical Estimation of Influence Radius of Qanat	Soil and Rock Mechanics
8	Qanat Drilling and Field Operations 1	2	16	64	80	Surveying Operation	
9	Qanat Drilling and Field Operations 2	2	16	64	80	Qanat Drilling and Field Operations 1	
10	The Application of Pumps Workshop	1	-	48	48		
11	The Application of Pumps	1	16	-	16	General Hydraulics	
12	Soil Retaining Structures	2	32	-	32	Soil and Rock Mechanics	
13	Dredging Methods of Qanat	2	16	64	80	Qanat Drilling and Field Operations 1	

14	Restoration, Maintenance, and Operation of Qanat	2	32	-	32		Dredging Methods of Qanat
	Total	23	288	304	592		

Non-Continuous Technical Associate's Degree in Electricity (Electricity of Armored Vehicles)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	0	32	
2	Entrepreneurship	2	32	0	32	
3	Report Making	2	32	0	32	
4	The Application of ICT	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	Physics of Electricity and Magnetism, and Laboratory	2	16	32	48		
2	General Mathematics and Principles of Statistics	2	32	0	32		
3	Applied Mathematics	2	32	0	32	General Mathematics and Principles of Statistics	
4	Computer Workshop	1	0	48	48		
5	General Workshop	1	0	48	48		
6	5S Methodology	1	16	0	16		
	Total	**9**	**96**	**128**	**224**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Electric Circuits and Laboratory	2	16	32	48	Physics of Electricity and Magnetism and Laboratory	
2	Electronics	2	32	0	32	Electric Circuits and Laboratory	

3	Electronics Laboratory	1	0	32	32	Electric Circuits and Laboratory	
4	Logic Circuits and Laboratory	2	16	32	48	Electric Circuits and Laboratory	
5	Electric Machines and Laboratory	2	16	32	48	Electric Circuits and Laboratory	
6	Control and Precision Instrument	2	32	0	32	Electric Circuits and Laboratory	
7	Electricity Workshop	1	0	48	48	Electric Circuits and Laboratory	
8	Principles of Equipment Readiness and Reliability	1	0	32	32		
9	Introduction to Order Estimation Systems and Spare Parts Supply	1	0	32	32		
10	Introduction to Maintenance Systems	1	16	0	16		
11	Introduction to CMMS Software (Computerized Maintenance Management Systems*)*	2	16	32	48	Computer Workshop	
	Total	**17**	**144**	**272**	**416**		

Table of Specialized Courses

#	**Course Title**	No. of Credits	Hours			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	0	32	General English	
2	Technical Drawing Workshop	2	16	48	64	Electronics	
3	Electrical and Electronic Circuits of Armored Vehicles	2	32	0	32	Electric Circuits and Laboratory Electronics and Laboratory	
4	Workshop on Electrical and Electronic Circuits of Armored Vehicles	1	0	48	48	Electric Circuits and Laboratory Electronics and Laboratory	
5	Electric Machines of Armored Vehicles	2	32	0	32	Electric Machines and Laboratory	
6	Workshop on Electric Machines of Armored Vehicles	1	0	48	48	Electrical Machines and Laboratory	
7	Armored Vehicle Control Systems	2	32	0	32	Control and Precision Instrument	

8	Workshop on Armored Vehicle Control Systems	1	0	48	48	Control and Precision Instrument	
9	Introduction to Armored Tanks and Ammunition (1)	2	16	48	64		
10	Introduction to Armored Tanks and Ammunition (2)	2	16	48	64	Introduction to Armored Tanks and Ammunition (1)	
11	Workshop on Telecommunication Systems in Armored Vehicles	1	0	48	48		
12	Condition Monitoring (CM) and Breakdown Analysis	2	16	32	48		
13	Long-term Conservation and Maintenance	1	0	32	32		
	Total	**21**	**192**	**400**	**592**		

Non-Continuous Technical Associate's Degree in Media – Sound Engineering Equipment

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	0	32	
2	Occupational Safety and Health	2	32	0	32	
3	Professional Ethics	2	32	0	32	
4	Report Making	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	General Electronics	3	48	-	48		
4	Electricity and Electronics Workshop	1	-	64	64		
	Total	9	128	64	192		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	An Introduction to Broadcasting Technology	2	32	-	32		

2	Electric Circuits	3	48	-	48	General Mathematics	
3	Electric Circuits Laboratory	1	-	48	48		Electric Circuits
4	Digital Circuits Workshop	1	-	64	64	Electric Circuits	
5	Computer Networking Workshop	1	-	64	64		
6	Principles of Digital Television	2	32	-	32	Introduction to Broadcasting Technology	
7	Computer Configuration Workshop	1	-	48	48	Digital Circuits Workshop	
8	Digital Processors Workshop	1	-	64	64		
9	English for Specific Purposes	2	32	-	32	General English	
	Total	14	-	-	-		

Table of Specialized Courses

#	Course Title	z	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Specialized Electronics	2	32	-	32	General Electronics	
2	Specialized Electronics Laboratory	1	-	48	48	-	Specialized Electronics
3	Principles of Telecommunications	2	32	-	32	Electric Circuits	
4	Principles of Production in Radio and Television	2	32	-	32		
5	Introduction to Performing Arts	2	32	-	32		
6	Acoustics 1	2	32	-	32	General Mathematics General Physics	
7	Acoustics 2	2	32	-	32	Acoustics 1	
8	Acoustic Laboratory	1	-	48	48	Acoustics 1	
9	Analog Sounds	2	32	-	32	General Electronics	
10	Digital Sounds	2	32	-	32		Analog Sound
11	Sound Laboratory	1	-	48	48		Digital Sound
12	Music Workshop 1	1	-	64	64		
13	Music Workshop 2	1	-	64	64	Music Workshop 1	
14	A Workshop on Sound Recording and Mixing in TV and Radio	1	-	64	64	Analog Sound	
15	A Workshop on Sound Recording and Mixing in Cinema	1	-	48	48	Analog Sound	

16	A Workshop on Sound and Music Recording	1	-	64	64	Analog Sound Music Workshop 1	
17	Computerized Sound Workshop	1	-	64	64		
	Total	25	256	576	832		

Non-Continuous Technical Associate's Degree in Gilsonite (Natural Bitumen) Extraction and Processing

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	0	32	
2	Entrepreneurship	2	32	0	32	
3	Occupational Safety and Health	2	32	0	32	
4	Principles of Quality Control	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32		
	Total	**8**	**96**	**96**	**192**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Geology	3	48	-	48		
2	General Geology Laboratory	2	-	64	64		General Geology
3	General Geology Field Operations	1	-	32	32		General Geology
4	Analysis of Minerals and Laboratory	2	16	32	48	General Chemistry Laboratory	
5	Chemistry of Petroleum Compounds and Laboratory	2	16	32	48	General Chemistry	
6	Gilsonite Specification	2	32	-	32		

7	Technical Services in Gilsonite Mines	2	16	32	48		
	Total	**14**	**128**	**192**	**320**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Gilsonite Processing	2	32	-	32	Analysis of Minerals and Laboratory	Gilsonite Specification
2	Gilsonite Processing Laboratory	2	-	64	64		Gilsonite Processing
3	The Application of Gilsonite	3	32	32	64	Gilsonite Specification	Gilsonite Processing
4	Gilsonite Processing Machinery	3	16	64	80	Technical Services in Gilsonite Mines	
5	English for Specific Purposes	2	32	-	32	General English	
6	Economic Geology of Gilsonite Deposits	2	32	-	32	General Geology	
7	Gilsonite Mines Extraction	2	16	32	48	Gilsonite Reserves Assessment	
8	The Application of Specialized Software in Gilsonite Mines	2	-	96	96	General Mathematics	
9	Gilsonite Reserves Assessment	2	32	-	32	General Geology	
10	Gilsonite Standards	2	32	-	32	The Application of Gilsonite	
11	Gilsonite Economics	2	32	-	32	The Application of Gilsonite	
	Total	**24**	**256**	**288**	**544**		

Non-Continuous Technical Associate's Degree in Food Industries (Storage of Agricultural Products)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	0	32	
2	Principles of Supervision	2	32	0	32	
3	The Application of ICT	2	32	0	32	
4	Report Making	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Analytical Chemistry and Laboratory	3	32	32	64		
2	General Physics and Laboratory	3	32	32	64		
3	General Chemistry and Laboratory	2	16	48	64		
4	General Mathematics	2	32	-	32		
	Total	**10**	**112**	**112**	**224**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry and Laboratory	2	16	48	64		
2	Food Chemistry	2	32	-	32	Organic Chemistry and Laboratory	
3	Herbal Biochemistry	2	32	-	32	Organic Chemistry and Laboratory	
4	Food Microbiology	2	32	-	32		
5	Food Microbiology Laboratory	2	-	64	64		Food Microbiology
6	Safety and Health in Refrigerators and Warehouses	1	16	-	16		
7	Food Analysis Laboratory	2	-	64	64	Food Chemistry	
8	English for Specific Purposes	2	32	-	32		
	Total	**15**	**160**	**176**	**336**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Post-Harvest Physiology and Laboratory	3	32	48	80	Herbal Biochemistry	
2	Farm Management	2	32	-	32	Herbal Biochemistry	
3	Technology of Maintenance Seeds in Silos	2	32	-	32	Postharvest Physiology and Laboratory	
4	Technology of Maintenance Fruits, Vegetables in Warehouse	2	32	-	32	Postharvest Physiology and Laboratory	
5	Warehouses and Cold Storage Rooms and Equipment	3	48	-	48		

6	Workshop on Warehouses and Cold Storage Rooms and Equipment	1	-	48	48		Warehouses and Cold Storage Rooms, and Equipment
7	Disinfection of Warehouses and Laboratory	3	32	48	80		
8	Packaging and Transportation of Agricultural Products	2	32	-	32	Post-harvest Physiology and Laboratory	
9	Quality Control					Post-harvest Physiology and Laboratory	
10	Seeds and Laboratory	2	16	32	48		
11	Quality Control of Fruits and Vegetables and Laboratory	2	16	32	48	Post-harvest Physiology and Laboratory	
	Total	**22**	**272**	**208**	**480**		

Non-Continuous Technical Associate's Degree in Water and Wastewater Treatment in Food Industries

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	0	32	
2	Principles of Supervision	2	32	0	32	
3	The Application of ICT	2	32	0	32	
4	Report Making	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Chemistry and Laboratory	3	32	32	64		
2	Analytical Chemistry and Laboratory	3	32	48	80		
3	General Mathematics	2	32	-	32		
	Total	**8**	**96**	**80**	**176**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Organic Chemistry and Laboratory	3	32	32	64		
2	Food Chemistry	2	32	-	32	Organic Chemistry and Laboratory	
3	Food Analysis Laboratory	2	-	64	64	Analytical Chemistry and Laboratory	
4	General Microbiology and Laboratory	3	32	48	80		
5	Introduction to Water Resources	1	16	-	16		
6	Reading Map of Water and Wastewater Treatment Structures	1	-	48	48		
7	Principles of Health in Food Factories	1	16	-	16		
8	Food Processing	2	32	-	32	Food Chemistry	
9	Food Processing Operations	1	-	64	64		Food Processing
10	English for Specific Purposes	2	32	-	32	General English	
	Total	**18**	**192**	**256**	**448**		

Table of Specialized Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	Water and Wastewater Chemistry in Food Industries	2	32	-	32	Organic Chemistry and Laboratory	
2	Laboratory of Water and Wastewater Chemistry in Food Industries	2	-	96	96	-	Water and Wastewater Chemistry in Food Industries
3	Physical and Chemical Processes of Water and Wastewater Treatment	2	32	-	32	Water and Wastewater Chemistry in Food Industries - Food Processing	
4	Biological Processes of Wastewater in Food Industries	2	32	-	32	General Microbiology and Laboratory Food Processing	
5	Microbiology of Water and Wastewater in Food Industries	2	32	-	32	General Microbiology and Laboratory	

6	Laboratory of Water and Wastewater Microbiology in Food Industries	2	-	96	96		Microbiology of Water and Wastewater in Food Industries
7	Wastewater Treatment in Food Industries	3	48	-	48	Food Processing	
8	Laboratory of Wastewater Treatment in Food Industries	2	-	96	96		Wastewater Treatment in Food Industries
9	Water Treatment in Food Industries	2	32	-	32	Introduction to Water Resources	
10	Machinery and Equipment in Water Treatment Plants	2	32	-	32	Food Processing	
	Total	21	240	288	528		

Non-Continuous Technical Associate's Degree in Drilling Fluid

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	0	32	
2	Principles of Supervision	2	32	0	32	
3	The Application of ICT	2	32	0	32	
4	Technical Report Making	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	Applied Chemistry	3	48	-	48		
4	Technical Drawing and Map Reading	2	16	32	48		
	Total	**10**	**144**	**32**	**176**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	Fluid Mechanics	3	48		48	Mathematics and General Physics	
2	Drilling Fluid Operations	3	48		48	Applied Chemistry	
3	Safety in Drilling Industry	2	16	48	64		
4	Rheology of Drilling Fluid	2	32		32	Fluid Mechanics	
5	Laboratory of Drilling Fluid Operations	1		48	48		Drilling Fluid Operation
6	Primary Oil Geology	2	32		32		
7	Principles of Drilling Fluid Computations	2	32		32	Drilling Fluid Operation	
	Total	**15**	**208**	**96**	**304**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Drilling Operations and Workshop	3	32	48	80	-	
2	Blowout Control and Workshop	3	32	48	80	Drilling Operations and Workshop	
3	Controlling Solids of Drilling Fluid and Workshop	2	16	48	64	Drilling Fluid Operation	
4	Pollutants of Drilling Fluid and Laboratory	3	32	48	80	Drilling Fluid Operation	
5	Casing and Cementing and Workshop	2	16	48	64	Drilling and Workshop Operations	
6	Shale Control	2	16	32	48	Drilling Fluid Operation	
7	Drilling Fluid Loss in Formation	2	16	32	48	Drilling Fluid Operation	
8	English for Specific Purposes	2	32		32		
9	Drilling Fluid Logging	2	16	32	48	Drilling Operations and Workshop	
10	Project (Case Study)	1		48	48		
	Total	**22**	**208**	**384**	**592**		

Non-Continuous Technical Associate's Degree in Compressed Natural Gas (CNG)

Table of Joint Skill-Based Courses

			Hours	

#	Course Title	No. of Credits	Theoretical	Practical	Total	Prerequisite(s)
1	Professional Ethics	2	32	0	32	
2	Occupational Safety and Health	2	32	0	32	
3	The Application of ICT	2	32	0	32	
4	Technical Report Making	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	General Mechanics Workshop	1	-	48	48		
	Total	5	64	48	112		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Electricity and Electric Motors	2	32	-	32	General Physics	
2	Electricity and Electric Motors Workshop	1	-	48	48	-	Principles of Electricity and Electric Motors
3	Statics and Strength of Materials	2	32	-	32	Mathematics and General Physics	
4	Applied Thermodynamics	2	32	-	32	Mathematics and General Physics	
5	Fluid Mechanics	2	32	-	32	Mathematics and General Physics	
6	Industrial Drawing	2	-	96	96		
7	Bearings and Lubrication	2	32	-	32		Fluid Mechanics
8	Materials Science;, Corrosion, Insulation, and Cathodic Protection	2	32	-	32		
9	Machines Alignment	2	16	48	64	General Mechanic Workshop	
	Total	**17**	**208**	**192**	**400**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	An Introduction to and the Application of Dispensers and Dryers	2	16	48	64		
2	Consumables in CNG Stations and Identification of Repair Types (PDM, PM)	2	16	48	64	Introduction to and The Application of Dispensers and Dryers	
3	Standards and Inspection of CNG Stations	2	16	48	64		
4	Damages to Tanks in CNG Stations and Automobiles	2	16	48	64	Consumables in CNG Stations and Identification of Repair Types (PDM, PM)	
5	CNG Reciprocating Compressors	2	32	-	32	Introduction to and The Application of Dispensers and Dryers,	
6	CNG Compressors Workshop	1	-	48	48		CNG Reciprocating Compressors
7	Control Systems of CNG, SCADA PLC Stations and Soft Drivers	2	16	48	64	Consumables in CNG Stations and Identification of Repair Types (PDM, PM)	
8	Methods of Calibration and Precision Instrument of CNG Equipment	2	16	48	64	Consumables in CNG Stations and Identification of Repair Types (PDM, PM)	
9	Principles of HSE in CNG Industry	2	16	48	64	Control Systems of CNG, SCADA PLC Stations, and Soft Drivers	
10	Bi-Fuel Vehicles and Maintenance	2	16	48	64		
11	Welding Methods and Inspection	2	16	48	64		

12	Map Reading of CNG Stations, and PLD and PFD Equipment Layout	2	16	48	64		
13	Principles of Planning and SupervisingCNG Stations	2	16	48	64		
	Total	**25**	**208**	**576**	**784**		

Non-Continuous Technical Associate's Degree in Pharmaceutical Industries (Drug Quality Control)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	0	32	
2	Occupational Safety and Health	2	32	0	32	
3	Professional Ethics	2	32	0	32	
4	Principles of Supervision	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32		
	Total	**8**	**96**	**64**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	2	32	---	32	General Chemistry	
2	Organizational Culture in Pharmaceutical Companies	1	16	---	16		
3	Mineral Chemistry	2	32	---	32	General Chemistry	
4	Waste Management	2	32	---	32		
5	Physical Chemistry	2	32	---	32	General Physics and General Chemistry	

6	Principles of Standards and GMP	2	32	---	32		
7	Principles of Quality Control and Production	2	32		32		
8	English for Specific Purposes	2	32	---	32		
9	Standard-Based Report Making and Documentation	1	16	---	16		
10	Introduction to Production Control Systems (DCS)	2	32	---	32	The Application of ICT	
	Total	**18**	**286**	**---**	**286**		

Table of Specialized Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	Active and Excipients Substances in Medicine Production	3	48	-	48	Organic Chemistry	
2	Laboratory of Active and Excipients Substances in Medicine Production	1	-	32	32		Active and Excipients Substances in Medicine Production
3	Pharmaceutical Equipment and Machinery	3	48	-	48	Production Control (DCS)	
4	Workshop on Pharmaceutical Equipment and Machinery	1	-	48	48		Pharmaceutical Equipment and Machinery
5	Medicinal Forms	3	32	32	64	Active and Excipients Substances in Medicine Production	
6	Monitoring Accurate Performance of Pharmaceutical Production Equipment	2	32	-	32	Pharmaceutical Equipment and Machinery	
7	Workshop on Monitoring Accurate Performance of Pharmaceutical Production Equipment	1	-	48	48	Monitoring Accurate Performance of Pharmaceutical Production Equipment	
8	Packaging Pharmaceutical Products	2	32	-	32		Medicinal Forms
9	Packaging of Pharmaceutical Products Workshop	1	-	48	48		Packaging Pharmaceutical Products

10	Principles of Warehousing in Production	1	16	-	16	Standard Principles and GMP	
11	WFI Production and Treatment of Pharmaceutical Effluent	2	32	-	32	Mineral Chemistry	
12	Principles of Validating Production Process	1	16	-	16	Standard-based Report Making and Documentation	
	Total	**21**	**256**	**208**	**464**		

Non-Continuous Technical Associate's Degree in Pharmaceutical Industries (Quality Control (QC)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	0	32	
2	Occupational Safety and Health	2	32	0	32	
3	Professional Ethics	2	32	0	32	
4	Principles of Supervision	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32		
	Total	**8**	**96**	**64**	**160**		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Organic Chemistry	2	32	---	32	General Chemistry	
2	Organic Chemistry Laboratory	1	---	32	32		Organic Chemistry

3	Analytical Chemistry	2	32	---	32	General Chemistry	
4	Analytical Chemistry Laboratory	1	---	32	32		Analytical Chemistry
5	Physical Chemistry	2	32	---	32	General Physics and General Chemistry	
6	Organizational Culture in Pharmaceutical Companies	1	16	---	16		
7	Principles of Standards and GMP	2	32		32		
8	Principles of QC and Production	2	32	---	32		
9	English for Specific Purposes	2	32	---	32		
9	Standard-Based Report Making and Documentations	1	16	---	16		
10	Introduction to Production Control Systems (DCS)	2	32	---	32	The Application of ICT	
	Total	**18**	**256**	**64**	**320**		

Table of Specialized Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	Instrumental Analysis	2	32	-	32	Analytical Chemistry	
2	Instrumental Analysis Laboratory	1	-	32	32		Instrumental Analysis
3	Evaluation of Laboratory Results	1	16	-	16	Instrumental Analysis	
4	References of Pharmaceutical Quality Control	2	32	-	32	English for Specific Purposes	
5	QC of Medicinal Forms	2	32	-	32	QC of Active and Excipients Substance in Medicine Production	
6	Laboratory of QC of Medicinal Forms	1	-	32	32		QC of Medicinal Forms
7	Principles of GLP and Sampling	2	32	-	32	Standard Principles and GMP	

8	Principles of of Analytical Method Validation	1	16	-	16	Instrumental Analysis	
9	QC of Active and Excipients Substance in Medicine Production	2	32	-	32	Organic Chemistry Laboratory	
10	Laboratory of QC of Active and Excipients Substance in Medicine Production	1	-	32	32		QC of Active and Excipients Substance in Medicine Production
11	In Process Quality Control (IPQC)	3	48	-	48	Principles of Quality Control and Production	
12	IPQC Laboratory	1	-	32	32		In Process Quality Control (IPQC)
13	QC of Water and Pharmaceutical Effluents	2	32	-	32	General Chemistry	
14	Laboratory ofQC of Water and Pharmaceutical Effluents	1	-	32	32		Qc of Water and Pharmaceutical Effluents
	Total	**22**	**272**	**160**	**432**		

Non-Continuous Technical Associate's Degree in Chemical Industry (Chloralkali Production Line)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	The Application of ICT	2	32	0	32	
2	Occupational Safety and Health	2	32	0	32	
3	Report Making	2	32	0	32	
4	Principles of Supervision	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32		32		
2	General Physics	2	32		32		
3	General Chemistry	2	32		32		
4	General Chemistry Laboratory	1		32	32		General Chemistry

5	General Physics Laboratory	1		32	32		General Physics
6	General Workshop	1		64	64		
	Total	9	96	128	224		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Thermodynamics	2	32		32	General Physics	Material and Energy Balances
2	Principles and Processing Equipment Function	3	48		48		Thermodynamics
3	Processing Equipment Laboratory	1		32	32		Principles and Processing Equipment Function
4	The Application of Computer in Chemical Industries	1		48	48		
5	Materials and Energy Balances	2	32		32	General Chemistry, General Mathematics	
6	Workshop on Electricity and Precision Instrument	1		64	64	General Physics	
7	Operation and Maintenance of Industrial Installations	2	32		32	Thermodynamics	Principles and Function of Processing Equipment
8	Industrial Installations Workshop	1		48	48		Operation and Maintenance of Industrial Installations
	Total	13	144	192	336		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Production Control in Chloralkali Industries	2	32		32	Material and Energy Balances	
2	Chlorine Alkali Chemistry	2	32		32	General Chemistry	
3	Chloralkaline Chemistry Laboratory	2		64	64		Chlorine Alkali Chemistry

4	Safety of Chlorine and Sodium Hydroxide	3	48		48	Occupational Safety and Health	
5	Maintenance and Repair in Chloralkaline Industries	2	16	48	64	Operation and Maintenance of Industrial Installations	
6	Chloroalkaline Processes	3	48		48	Alkaline Chemistry	Operation and Maintenance of Industrial Installations
7	Production Process Operations	1		64	64		Chloroalkaline Processes
8	English for Specific Purposes and Catalogue Reading	2	32		32		
9	Electrolyzers	3	48		48	Workshop on Electricity and Precision Instrument	Chloroalkaline Processes
10	Electrolyzers Workshop	1		48	48		Electrolyzers
	Total	21	256	224	480		

Non-Continuous Technical Associate's Degree in Blood Transfusion (Storage and Transportation of Products)

Table of Joint Skill-Based Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Professional Ethics	2	32	0	32	
2	Report Making	2	32	0	32	
3	Occupational Safety and Health	2	32	0	32	
4	The Application of ICT	2	32	0	32	
	Total	**8**	**128**	**0**	**128**	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Physics	2	32	-	32		
2	General Physics Laboratory	1	-	32	32		
3	Biostatistics	2	16	32	48		
4	General Biology	2	32	-	32		
	Total	7	80	64	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Basic Hematology	1	16	-	16		
2	Basic Hematology Laboratory	1	-	48	48		
3	Storage and Transportation of Blood Cell Products	2	32	-	32	Basic Hematology	
4	Laboratory of Storage and Transportation of Blood Cell Products	1	-	32	32		
5	Electrical and Electronic Measurement	1	16	-	16	General Physics	
6	Electrical and Electronic Measurement Workshop	1	-	48	48		
7	Storage and Transportation of Plasma Products	*2*	*32*	-	*32*		
8	Laboratory of Storage and Transportation of Plasma Products	1	-	32	32		
9	Storage and Handling of Equipment of Products	1	16	-	16		
10	Laboratory of Storage and Handling of Equipment of Products	1	-	32	32		
11	Immunohematology and Blood Transfusion (1)	2	32	-	32	Basic Hematology	
12	Laboratory of Immunohematology and Blood Transfusion (1)	1	-	32	32	Immunohematology and Blood Transfusion (1)	
13	Immunohematology and Blood Transfusion (2)	2	32	-	32		
14	Laboratory of Immunohematology and Blood Transfusion (2)	1	-	32	32		
	Total	18	176	272	448		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Calibration and Validation of Handling, and Transport Equipment of Products	2	32	-	32	Electrical and Electronic Measurement	
2	Workshop on Calibration and Validation of Handling, and Transport Equipment of Products	1	-	48	48		
3	Quality Assurance	2	32	-	32		

4	GMP in Preparation of Blood Products	2	32	-	32	Basic Hematology	
5	Laboratory of GMP in Preparation of Blood Products	1	-	32	32		
6	GMP in Transportation of Blood Products	2	32	-	32	Storage and Transportation of Plasma Products	
7	Laboratory of GMP in Transportation of Blood Products	1	-	32	32		
8	GMP in Storage and Preservation of Blood Products	2	32	-	32	GMP in Preparation of Blood Products	
9	Laboratory of GMP in Storage and Preservation of Products	1	-	32	32		
10	Blood Bank Management	2	32	-	32	Immunology and Blood Transfusion (2)	
11	Blood Cold Chain	2	32	-	32	Basic Hematology	
12	Blood Cold Chain Laboratory	1	-	32	32		
13	Plasma Heresis	2	32	-	32	GMP in Storage and Preservation of Products	
14	Plasma Heresis Laboratory	1	-	32	32		
	Total	22	256	208	464		

Non-Continuous Technical Associate's Degree in Flight Dispatching

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General English 1	2	16	48	64		
2	General English 2	2	16	48	64	General English 1	
3	General English 3	2	16	48	64	General English 2	
4	General English 4	2	16	48	64	General English 3	
	Mathematics	2	32	—	32		
	Total	7	80	64	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Aviation 1	2	16	48	64		General English 4
2	English for Aviation 2	2	16	64	80	English for Aviation 1	
3	Physics	2	32	—	32		
4	Flight Theory	3	48	—	48	English for Aviation 1	
5	Aviation Meteorology	2	16	32	48	English for Aviation 1	
6	Aviation Laws	2	16	48	64	English for Aviation 1	
7	Aircraft Engines	2	16	32	48	English for Aviation 1	
8	Aircraft Systems	2	16	32	48	Flight Theory	
9	Air Traffic Management 1	2	16	32	48	Aviation Laws	
	Total	**19**	**192**	**288**	**480**		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Air Traffic Management 2	2	16	32	48	Air Traffic Management 1	
2	Human Factors and Dispatch Resource Management (DRM)	2	32	—	32	English for Aviation 2	
3	Flight Documentation	2	32	—	32	Aviation Laws	
4	Weighing and Balance	2	16	32	48	Flight Theory	
5	Aircraft Performance	2	32	—	32	Flight Theory	
6	Air Navigation	3	32	32	64	English for Aviation 2	
7	Navigation Assist Systems	3	32	32	64	Air Navigation	
8	Flight Plan	2	16	32	48	Aircraft Performance Air Traffic Management 1	
9	Flight Monitoring	3	32	32	64	Last Semester	
10	Radio Communication	2	16	32	48	Last Semester	
11	Dangerous Goods	2	32	—	32	Last Semester	
	Total	**25**	**288**	**224**	**512**		

Non-Continuous Technical Associate's Degree in Flat Pack Furniture

Table of Joint Skill-Based Courses

	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Professional Ethics	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
		8	128	-	128	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Chemistry	2	32	-	32		
4	Technical Drawing	2	16	32	48		
	Total	8	112	32	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Raw Materials of Flat Pack Furniture	2	32	-	32		General Chemistry
2	Human Ergonomics	2	32	-	32		General Physics
3	General Workshop on Flat Pack Furniture	1	-	48	48		
4	English for Specific Purposes	2	32	-	32		
5	Standards of Flat Pack Furniture Industry	2	16	32	48	Principles of Quality Control	
6	Principles of Designing Flat Pack Furniture Industry	2	16	32	48		
7	Sketching and Rendering	2	16	32	48		
8	Sketch-up Software	2	16	32	48	Technical Drawing	
9	Workplace Safety and Security	2	16	32	48		
10	5S (Methodology)	2	32	-	32		
	Total	19	208	208	416		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Designing and Drawing Flat Pack Furniture	2	16	48	64	Technical Drawing	
2	Manufacturing Technology of Flat Pack Furniture	2	32	-	32		
3	Workshop on Manufacturing Flat Pack Furniture	1	-	48	48		
4	Machinery and Tools in Flat Pack Furniture	1	-	64	64		
5	Workshop on Assembling and Installing Flat Pack Furniture	2	16	64	80		
6	3D Max	2	16	48	64	Sketching and Rendering	
7	Workshop on Layout Design of Flat Pack Furniture	2	32	-	32		
8	Maintenance and Repair of Flat Pack Furniture Machinery	2	16	64	80		
9	Estimation of Materials in Flat Pack Furniture	2	32	-	32		
10	Packaging and Shipping Services of Flat Pack Furniture	2	32	-	32		
11	After-sales Services	2	32	-	32		
	Total	20	224	336	520		

Non-Continuous Technical Associate's Degree in Metrology of Physical and Mechanical Quantities

Table of Joint Skill-Based Courses

	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Professional Ethics	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Mechanical Physics	2	32	0	32		

2	Mechanical Physics Laboratory	1	0	48	48		
3	General Mathematics	2	32	.	32		
4	Metrology Chemistry	2	32	0	32		
5	Statistics	2	32	0	32		
	Total	9	128	48	176		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Physics of Electricity	2	32	0	32	Mechanical Physics	
2	Physics of Electricity Laboratory	1	0	48	48		Physics of Electricity
3	International Systems of Units SI	2	32	0	32		Mechanical Physics
4	Principles of Metrology	3	48	0	48		International Systems of Units SI
5	Forensic Metrology	3	32	32	64		Principles of Metrology
6	Scientific Metrology	3	32	32	64	Principles of Metrology	
7	Uncertainty of Measurement	3	32	32	64	Principles of Metrology	
	Total	17	208	144	352		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	English for Specific Purposes	2	32	0	32	General English	Principles of Metrology
2	Equipment and Methods for Measuring Physical Quantities	3	48	0	48	Principles of Metrology	
3	Laboratory of Equipment and Methods for Measuring Physical Quantities	1	0	48	48		Equipment and Methods for Measuring Physical Quantities
4	Equipment and Methods for Measuring Mechanical Quantities	3	48	0	48	Principles of Metrology	

5	Laboratory of Equipment and Methods for Measuring Mechanical Quantities	1	0	48	48		Equipment and Methods for Measuring Mechanical Quantities
6	Methods of Test and Calibration of Physical Quantities Group	3	48	0	48	Principles of Metrology	
7	Laboratory of Methods of Test and Calibration of Physical Quantities	1	0	48	48		Equipment and Methods for Measuring Mechanical Quantities
8	Methods of Test and Calibration of Mechanical Quantities	3	48	0	48		
9	Laboratory of Methods of Test and Calibration of Mechanical Quantities	1	0	48	48		Equipment and Methods for Measuring Mechanical Quantities
10	Project	2	0	96	96		
	Total	20	224	288	512		

Non-Continuous Technical Associate's Degree in Pyrotechnics

Table of Joint Skill-Based Courses

	Course Title	**No. of Credits**	**Hours**			**Prerequisite(s)**
			Theoretical	**Practical**	**Total**	
1	Professional Ethics	2	32	-	32	
2	Principles of Quality Control	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	The Application of ICT	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	General Mathematics	2	32	-	32		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		General Physics
4	General Chemistry	2	32	-	32		
5	General Chemistry Laboratory	1	-	32	32		General Chemistry

	Total	8	96	64	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Pyrotechnics	2	32	-	32		General Chemistry
2	Physical and Chemical Properties of Pyrotechnics	2	32	-	32	Principles of Pyrotechnics	
3	Identifying and Designing Pyrotechnics	2	32	-	32	Principles of Pyrotechnics	
4	English for Specific Purposes	2	32	-	32		
5	Principles of Energetic Materials	2	32	-	32		General Chemistry
6	Safety, Health, and Environmental Protection (HSE)	3	32	16	48		
7	Pyrotechnic Compounds Workshop	2	-	48	48	Principles of Pyrotechnics	
	Total	15	192	64	256		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Smoky and Flame Pyrotechnics	2	32	-	32	Physical and Chemical Properties of Pyrotechnics	
2	Delay-composition and Thermal Pyrotechnics	2	32	-	32	Physical and Chemical Properties of Pyrotechnics	
3	Concussion, Gas-pressure Blasting, and Noise Pyrotechnics	2	32	-	32	Physical and Chemical Properties of Pyrotechnics	
4	Pyrotechnic Ammunition Workshop	2	-	48	48	Pyrotechnic Compounds Workshop	Smoky and Flame Pyrotechnics Airburst, and Thermal Pyrotechnics Concussion , Gas-pressure Blasting,

							and Noise Pyrotechnics
5	Pyrotechnic Devices	2	32	-	32		
6	Pyrotechnic Devices Workshop	1	-	48	48		Pyrotechnic Devices
7	on Energetic Materials Workshop	1	-	48	48	Principles of Pyrotechnics	
8	Quality Control of Pyrotechnics	2	32	-	32		
9	Workshop on Compressed Energetic Materials	1	-	48	48	Principles of Pyrotechnics	
10	Principles of Thermite, Igniters, and Detonators	2	32	-	32	Principles of Pyrotechnics	
11	Workshop on Thermite, Igniters, and Detonators	2	-	48	48		Principles of Thermite, Igniters, and Detonators
12	The Application of Pyrotechnics Laboratory	1	-	32	32	Principles of Pyrotechnics	
13	Laboratory of Sensitivity Determination, and Quality Control	1	-	32	32	Principles of Pyrotechnics	
	Total	21	192	304	496		

Non-Continuous Technical Associate's Degree in Machine Lubrication

Table of Joint Skill-Based Courses

	Course Title	**No. of Credits**	**Hours**			**Prerequisite(s)**
			Theoretical	**Practical**	**Total**	
1	Occupational Safety and Health	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Principles of Quality Control	2	32	-	32	
4	Principles of Supervision	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	General Mathematics	32	-	32	2		
2	General Physics	48	-	48	3		General Mathematics
3	General Physics Laboratory	32	32	-	1		General Physics

4	General Chemistry	32	-	32	2		
5	General Chemistry Laboratory	32	32	-	1		General Chemistry
6	General Workshop on Electricity and Mechanics	48	48	-	1		General Physics
	Total	224	112	112	10		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s) /Corequisite(s)
			Theoretical	Practical	Total	
1	Bearings	32	-	32	2	General Physics
2	Bearings Workshop	48	48	-	1	Bearings
3	Types of Oils and Applicable Standards	32	-	32	2	General Chemistry
4	Types of Grease and Applicable Standards	32	-	32	2	General Chemistry
5	Fluid Mechanics of Lubricants	32	-	32	2	Types of Oils and Applicable Standards
6	Machine Components	32	-	32	2	Bearings / Bearings Workshop
7	Machine Components Workshop	48	48	-	1	Machine Components
8	Precision Instrument Workshop	48	48	-	1	General Workshop on Electricity and Mechanics
9	Principles of Lubrication	32	-	32	2	Types of Oils and Applicable Standards Types of Grease and Applicable Standards
10	Lubrication Workshop	48	48	-	1	Principles of Lubrication
11	Technical Drawing	48	48	-	1	
	Total	432	240	192	17	

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s) /Corequisite(s)
			Theoretical	Practical	Total	
1	Lubrication of Equipment	80	48	32	3	Machine Components Fluid Mechanics of Lubricants
2	English for Specific Purposes	32	-	32	2	General English
3	Condition Based Monitoring (C.B.M)	80	48	32	3	Types of Oils and Applicable Standards Types of Grease and Applicable Standards

						Maintenance and Repair of Machinery Laboratory of Lubricants Performance Control	
4	Hydraulic Circuits	80	48	32	3	Principles of Lubrication Lubrication of Equipment	
5	Classification, Safety, and Packaging of Lubricant	32	-	32	2	Types of Oils and Applicable Standards Types of Grease and Applicable Standards	
6	Laboratory of Lubricants Performance Control	48	48	-	1	Types of Oils and Applicable Standards Types of Grease and Applicable Standards	
7	The Application of Lubrication in Power Transmission	80	48	32	3	Machine Components	
8	Machinery Maintenance and Repair	48	-	48	3		
	Total	480	240	240	20		

Non-Continuous Technical Associate's Degree in Workshop Surveying

Table of Joint Skill-Based Courses

	Course Title	**No. of Credits**	**Hours**			**Prerequisite(s)**
			Theoretical	**Practical**	**Total**	
1	Occupational Health and Safety	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Principles of Supervision	2	32	-	32	
4	The Application of ICT	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	General Mathematics	2	32	-	32		Pre-Uni Mathematics
2	Principles of Computer Programming	2	16	48	64	ICT The Application	
3	Applied Physics	2	32	-	32		Pre-Uni Physics
	Total	7	96	48	144		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Surveying	2	32	-	32		General Mathematics
2	General Surveying Operations	2	-	96	96		General Surveying
3	Statics	2	32	-	32	General Mathematics	Applied Physics
4	Software and Devices of Workshop Surveying	2	32	-	32		General Surveying Principles of Computer Programming
5	Operation of Software and Devices of Workshop Surveying	2	-	96	96		Software and Devices of Workshop Surveying
6	Photogrammetry Workshop	2	32	-	32	Applied Physics	
7	Photogrammetry Laboratory	2	-	96	96		Photogrammetry Workshop
8	General Geodesy	2	32	-	32	Applied Physics	
9	General Geodesy Workshop	1	-	64	64		General Geodesy
	Total	17	160	352	512		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Site Surveying	2	32	-	32	General Surveying, Software and Devices of Workshop Surveying	
2	Site Surveying Workshop	2	-	96	96		Site Surveying
3	Remote Sensing	2	32	-	32	Photogrammetry Workshop, General Geodesy	
4	Remote Sensing Workshop	2	-	96	96		Remote Sensing
5	Workshop on Mine Surveying and Operations	3	32	48	80	General Surveying,	

						Software and Devices of Workshop Surveying	
6	English for Specific Purposes	2	32	-	32	General English	
7	Cartography and Workshop	3	32	48	80	Software and Devices of Workshop Surveying	
8	Estimation Workshop	3	32	48	80	Site Surveying	
9	Global Positioning System (GPS)	2	32	-	32	Site Surveying, General Geodesy	
10	Global Positioning System Operation (GPS)	1	-	48	48		Global Positioning System (GPS)
	Total	22	*224*	*384*	*608*		

Non-Continuous Technical Associate's Degree in Printing – Machinery

Table of Joint Skill-Based Courses

	Course Title	**No. of Credits**	**Hours**			**Prerequisite(s)**
			Theoretical	**Practical**	**Total**	
1	Principles of Supervision	2	32	-	32	
2	Entrepreneurship	2	32	-	32	
3	Business Skills and Rules	2	32	-	32	
4	Principles of Quality Control	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	General Mathematics	3	48	-	48		
2	General Physics	2	32	-	32		
3	General Physics Laboratory	1	-	32	32		
4	Mechanical Physics	2	32	-	32		
5	General Workshop	1	-	48	48		
	Total	7	96	48	144		

Table of Core Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	Machine Components	2	16	48	80		

2	Electric Circuits	3	16	64	96		
3	Electronics	2	16	32	48	Electric Circuits	
4	Industrial Electricity	2	32	-	32		
5	Pneumatics	2	16	32	48		
6	Materialology of Machinery	2	32	-	32		
7	Industrial Drawing	1	-	48	48		
8	Electricity Workshop	1	-	48	64		
9	Industrial Health and Safety	2	32	-	32		
	Total	17					

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Roll Printing Machinery and Technology	3	16	64	80		
2	Offset Printing Machinery and Technology	3	16	64	80	Roll Printing Machinery and Technology	
3	Electricity and Electronics of Printing Machinery	3	16	64	80	Electronics	
4	Binding Machinery	2	16	32	80		
5	Services and Maintenance of Printing Machinery	2	16	48	64	Roll Printing Machinery and Technology	
6	Installation of Printing Machinery	2	16	48	96	Service and Maintenance of Printing Machinery	
7	Planning for Services and Maintenance	2	32	48	112	Roll Printing Machinery and Technology	
8	Troubleshooting Methods in Printing Machinery	2	16	48	96		
9	English for Specific Purposes	2	32	-	32		
	Total	21	176	416	720		

Non-Continuous Technical Associate's Degree in Communication and Air Navigation Systems of Helicopters

Table of Joint Skill-Based Courses

	Course Title	No. of Credits	Hours			Prerequisite(s)
			Theoretical	Practical	Total	

1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles of Electronics and Laboratory	2	16	48	64		
2	Principles of Electricity and Laboratory	2	16	48	64		
3	Safety and First Aid Workshop	3	16	96	112		
4	Map Reading and Tracking Circuits	2	16	48	64		Principles of Electronics and Laboratory
	Total	9	64	240	304		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Principles and the Application of Digital Systems in Helicopters	3	32	48	80	Principles of Electronics and Laboratory	
2	The Application of Electronic Tools and Equipment	2	16	48	64	Principles of Electronics and Laboratory	
3	Logistics of Electronic Parts	2	16	48	64		
4	Methods of Verifying Communication and Navigation Systems of Helicopter	3	16	64	80		
5	Introduction to Helicopters	2	16	32	48		
6	Methods of Soldering Electronic Components	2	16	48	64	Map Reading and Tracking Circuits	
7	English for Specific Purposes	3	32	32	64		
	Total	17	144	320	464		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		

1	The Application of Automatic Systems and Flight Stability Maintenance	2	16	48	64	Introduction to Helicopters	
2	Automatic Flight of Helicopters	3	32	48	80	Introduction to Helicopters	
3	Troubleshooting of Communication and Navigation Systems in Helicopters	3	32	48	80	Map Reading and Tracking Circuits	
4	Air Communication Systems in Helicopters	3	16	64	80		
5	Air Navigation Systems in Helicopters	3	16	64	80		
6	Flight Instruments	2	16	48	64		
7	Electrical Systems of Helicopters	3	32	48	80		
8	New Radio Systems of Helicopters	2	16	48	64	Principles and the Application of Digital Systems in Helicopter	
	Total	21	176	416	592		

Non-Continuous Technical Associate's Degree in Helicopter Maintenance

Table of Joint Skill-Based Courses

	Course Title	**No. of Credits**	**Hours**			**Prerequisite(s)**
			Theoretical	**Practical**	**Total**	
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	**Course Title**	**No. of Credits**	**Hours**			**Prerequisite(s)**	**Corequisite(s)**
			Theoretical	**Practical**	**Total**		
1	General Mathematics	2	32	-	48		
2	Flight Theory	2	32	-	32		
3	General Physics	2	32	-	32		
4	Aviation Laws	3	48	-	48		
	Total	9	160	-	160		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Technical Journals on Helicopters	3	32	32	64		
2	Workshop on General Safety and Flight Line	2	32	-	32		
3	English for Specific Purposes	3	32	32	64		
4	Forms, Records, and IDs of Helicopters	2	32	-	32		
5	Aerodynamics 1	2	16	48	64	General Mathematics General Physics	
6	Aeronautical Structures	15	176	144	320		
	Total	3	32	32	64		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Maintenance of Turbine Engines	3	32	48	80		
2	Maintenance of Power Transmission in Helicopters	2	16	48	64		
3	Helicopter Electricity	2	16	48	64	General Physics	
4	Hydraulics of Helicopter	2	16	48	64		
5	Helicopter Weighing and Balance	2	16	48	64		
6	Helicopter Oil and Fuel	2	16	48	64		
7	Maintenance and Control of Parts and Tools of Helicopter	2	16	48	64	Technical Journals on Helicopter	
8	Helicopter Ground Movement	2	16	48	64	Workshop on General Safety and Flight Line	
9	Ground Control of Flights and Flight Schedules	2	32	-	32		
10	Internal and External Loading	2	16	48	64		
11	Helicopter Inspection and Flight Crew Duties	2	16	48	64	Forms, Records, and ID of Helicopters	
	Total	23	208	480	688		

Non-Continuous Technical Associate's Degree in Flight and Ground Safety of Helicopters

Table of Joint Skill-Based Courses

			Hours	

	Course Title	No. of Credits	Theoretical	Practical	Total	Prerequisite(s)
1	Principles of Supervision	2	32	-	32	
2	The Application of ICT	2	32	-	32	
3	Occupational Safety and Health	2	32	-	32	
4	Report Making	2	32	-	32	
		2	32	-	32	

Table of Basic Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	General Physics	2	32	-	32		
2	English for Specific Purposes	2	32	-	32		
3	Aviation Laws	2	32	-	32		
4	Fire Detection	2	32	-	32		
	Total	8	128	-	128		

Table of Core Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Introduction to Helicopters	2	16	48	64		
2	Workshop on General Safety and Flight Lines	2	16	32	48		
3	Technical Journals on Helicopters	3	32	32	64	Introduction to Helicopters	
4	Forms, Records, and IDs of Helicopters	2	16	32	48	Technical Journals on Helicopters	
5	Helicopter Accident Prevention	2	16	32	48		
6	Helicopter Airport Facilities	3	32	32	64		
	Total	14	128	208	336		

Table of Specialized Courses

#	Course Title	No. of Credits	Hours			Prerequisite(s)	Corequisite(s)
			Theoretical	Practical	Total		
1	Fire Extinguishing	3	32	48	80		Introduction to Helicopters
2	Oil, Fuel, and Associated Systems of Helicopters	2	16	32	48		
3	Search and Rescue of Helicopters	2	16	32	48		
4	Helicopter Recovery	2	16	32	48		

5	Air Communication and Air Traffic Controls	2	16	32	48	Introduction to Helicopters	
6	Safety of Engine Components	1	16	-	16		
7	Investigation of Ground and Air Accidents of Helicopters	2	16	32	48	Helicopter Accident Prevention	
8	Helicopter Fire	1	-	64	64	Fire Extinguishing	
9	Passive Defense	2	16	32	48		
10	Acquiring Power Skills in Firefighting Operations	2	-	96	96		
11	Helicopter Refueling	2	16	32	48	Helicopters Airport Facilities	
12	Helicopter Ground Movement	2	16	48	64		
	Total	23	176	480	656		