Future University

Faculty of Engineering & Technology

Postgraduate Programs Brochure

June 2022

I. Introduction

Future University in Egypt was founded in 2006 by the Presidential Decree 254/2006, according to law number 101/1992 and executive regulations 219/2002. The Bylaws of the postgraduate studies has been approved by the Supreme Council of Universities in July 2019.

II. Offered Postgraduate Programs

The Faculty of Engineering and Technology offers the following postgraduate programs:

Electrical Engineering Department
1. Postgraduate Diploma in Broadband Communication
2. Master of Engineering (M.Eng.) in Electronics and Communication Engineering
3. Master of Science (M.Sc.) in Electronics and Communication Engineering
4. Postgraduate Diploma in Renewable Energy Systems
5. Master of Engineering (M.Eng.) in Electrical Power Engineering
6. Master of Science (M.Sc.) in Electrical Power Engineering

Mechanical Engineering Department
7. Postgraduate Diploma in Mechatronics Engineering
8. Master of Engineering (M.Eng.) in Mechatronics Engineering
9. Master of Science (M.Sc.) in Mechatronics Engineering

Structural Engineering & Construction Management Department
10. Postgraduate Diploma in Structural Engineering
11. Master of Engineering (M.Eng.) in Structural Engineering
12. Master of Science (M.Sc.) in Structural Engineering
13. Postgraduate Diploma in Project Management
14. Master of Engineering (M.Eng.) in Project Management
15. Master of Science (M.Sc.) in Project Management

III. Admission Requirements

No.	Postgraduate Degree	Admission Requirements
1.	Postgraduate Diploma	Approved B.Sc. in Engineering
2.	Master of Engineering (M.Eng.)	Approved B.Sc. in Engineering with Grade at least Good (CGPA ≥ 2.3 out of 4)
3.	Master of Science (M.Sc.)	Approved B.Sc. in Engineering with Grade at least Good (CGPA ≥ 2.3 out of 4)

IV. Degree Requirements

No.	Postgraduate Degree	Total Credit Hours	Courses	Project/ Thesis	English Exam	Minimum Period for Completion
1.	Postgraduate Diploma	30 Cr. Hr.	30 Cr. Hr.	-	Not required	3 Semesters
2.	Master of Engineering (M.Eng.)	36 Cr. Hr.	30 Cr. Hr.	6 Cr. Hr. M.Eng. Applied Project	TOEFL/ IELTS	4 Semesters
3.	Master of Science (M.Sc.)	36 Cr. Hr.	18 Cr. Hr.	18 Cr. Hr. M.Sc. Thesis	TOEFL/ IELTS	4 Semesters

V. Tuition Fees*

No.	Postgraduate Degree	Annual Fees	
		Egyptian	Non-Egyptian
1.	Postgraduate Diploma	EGP 20,000	$1,800
2.	Master of Engineering (M.Eng.)	EGP 35,000	$3,500
3.	Master of Science (M.Sc.)	EGP 35,000	$3,500

** FUE Graduates are granted a discount of 25%*

VI. Merits

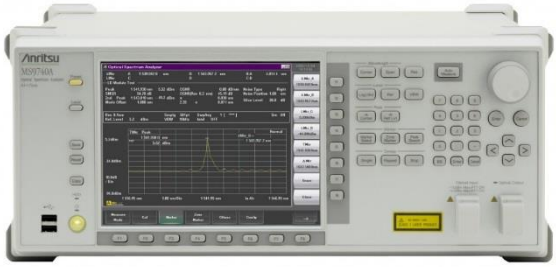
According to the QS World University Ranking 2023, FUE has been ranked 1001-1200 globally, 1st on Private Universities in Egypt, the fourth among all Egyptian universities and the 10th among African universities.

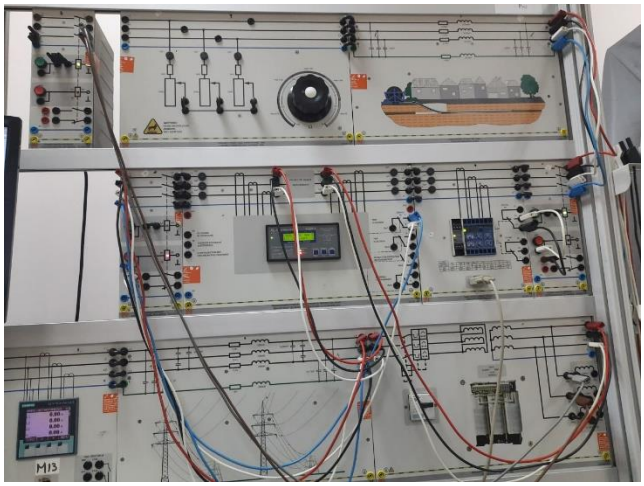
The Faculty of Engineering and Technology (FET) has earned the Institutional Accreditation of NAQAAE (the National Authority for Quality Assurance and Accreditation of Education) on December 7, 2020 for 5 years

Highly qualified academic staff from various scientific schools.

Outstanding research publication records (in average 160+ distinguished papers per year published by FET academic staff)

Research Facilities and labs established at the highest standards





VII. Important Links: https://www.fue.edu.eg/ ; https://fet.fue.edu.eg/

VIII. Detailed Description of Programs

The following sections summarize the contents of each postgraduate program

1. Postgraduate Diploma in Broadband Communication

(30 Credit Hours)

1A. Preliminary Courses *(12 Credit Hours)*

No.	Code	Course Name	CH
1	MTH 601	Statistics and Probability	3
2	MTH 602	Numerical Analysis	3
3	COM 602	Digital Communications	3
4	COM 607	Electronic Measurements	3

1B. Elective Courses *(15 Credit Hours)*

FIVE Courses are to be selected from this list

No.	Code	Course Title	CH
1	COM 603	Antennas and Propagation	3
2	COM 608	Mobile Communication	3
3	COM 609	Microprocessor Applications in Communications	3
4	COM 606	Optical fiber Communication Techniques	3

5	COM 610	Satellite Communication Fundamentals	3
6	COM615	Secure Communications	3
7	COM 612	Data Communication Techniques	3

1C. Project *(3 Credit Hours)*

No.	Code	Course Title	CH
1	COM 601	Graduation project	3

2. Master of Engineering in Electronics & Communication Engineering

(36 Credit Hours)

2A. Master Courses *(30 Credit Hours)*

TEN Courses are to be selected from this list, among them at least 4 courses COM 7xx

No	Code	Course Title	CH
1	COM 603	Antennas and Propagation	3
2	COM 604	Satellite Communication Systems	3
3	COM 605	Data Communication Principles	3
4	COM 606	Optical Fiber Communication Techniques	3
5	COM 608	Mobile Communications	3
6	COM 609	Microprocessor Applications in Communications	3
7	COM 610	Satellite Communication Fundamentals	3
8	COM 611	Computer Communications	3
9	COM 612	Data Communication Techniques	3
10	COM 613	Optical Fiber Communication Systems	3
11	COM 614	Data Communication Technology	3
12	COM 615	Secure Communications	3
13	COM 702	Optical Electronics	3
14	COM 703	Fiber and Waveguide Components for Communications and Sensors	3

15	COM 704	Passive Microwave Circuits	3
16	COM 705	Microwave Semiconductor Devices	3
17	COM 706	Antenna and Arrays	3
18	COM 707	Radar Systems	3
19	COM 708	Advanced Topics in Electromagnetics	3

2B. International English Language Exam

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

2C. Report *(6 Credit Hours)*

No.	Code	Course Title	CH
1	COM 798	M. Eng. Report	6

3. Master of Science in Electronics & Communication Engineering

(36 Credit Hours)

3A. Master Courses *(18 Credit Hours)*

SIX Courses are to be selected from this list

No	Code	Course Title	CH
1	COM 603	Antennas and Propagation	3
2	COM 604	Satellite Communication Systems	3
3	COM 605	Data Communication Principles	3
4	COM 606	Optical Fiber Communication Techniques	3
5	COM 608	Mobile Communications	3
6	COM 609	Microprocessor Applications in Communications	3
7	COM 610	Satellite Communication Fundamentals	3
8	COM 611	Computer Communications	3
9	COM 612	Data Communication Techniques	3
10	COM 613	Optical Fiber Communication Systems	3
11	COM 614	Data Communication Technology	3
12	COM 615	Secure Communications	3
13	COM 702	Optical Electronics	3
14	COM 703	Fiber and Waveguide Components for	3

15	COM 704	Passive Microwave Circuits	3
16	COM 705	Microwave Semiconductor Devices	3
17	COM 706	Antenna and Arrays	3
18	COM 707	Radar Systems	3
19	COM 708	Advanced Topics in Electromagnetics	3

3B. International English Language Exam

Should be passed before registering the thesis

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

3C. Thesis *(18 Credit Hours)*

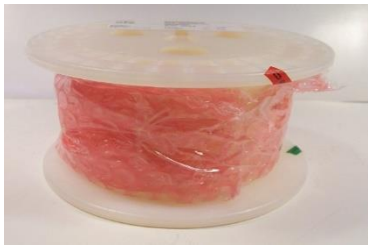
No.	Code	Course Title	CH
1	COM 799	Master of Science Thesis	18

Supporting Facilities/Equipment

Fujikura 70S Fusion Splicing Machine

Optical time-domain Reflectometer (MT9090A from Anritsu)

Tunable Laser Source (Thorlabs TL1300/TL1550A)



C-band Erbium Doped Fiber

Optical Spectrum Analyzer (OSA) MS9740A- Anritsu

1550 nm 2x2 Polarization-Maintaining Fiber Optic Couplers / Taps (Thorlabs)

R&S®ZVB Vector Network Analyzers

Spectrum Analyzer (HAMEG HMS3010)

1.2GHz RF Synthesizer (Rohde and Schwarz HM8134)

Hameg HM8150 Arbitrary Function Generator

MDO3000 Mixed Domain Oscilloscope | Tektronix

Rohde & Schwarz RTM 1054 4 Ch, 500 MHz, Digital Oscilloscope

4. Postgraduate Diploma in Renewable Energy Systems

(30 Credit Hours)

4A. Preliminary Courses *(12 Credit Hours)*

No.	Code	Course Title	CH
1	EPR 611	Theories of Electrical Machines	3
2	EPR 621	Power System Analysis and Control	3
3	EPR 631	Power Electronics	3
4	EPR 641	Renewable Energy Technologies	3

4B. Elective Courses *(12 Credit Hours)*

FOUR Courses are to be selected from this list

No.	Code	Course title	CH
1	EPR 622	Power System Protection	3
2	EPR 623	Distributed Generation	3
3	EPR 624	Power System Operation	3
4	EPR 625	Power Quality	3
5	EPR 642	Wind Energy Systems	3
6	EPR 643	Photovoltaic Energy Systems	3
7	EPR 644	Energy Storage Systems	3

4C. Applied Project *(6 Credit Hours)*

No.	Code	Course title	CH
1	EPR 698	Applied Project 1	3
2	EPR 699	Applied Project 2	3

5. Master of Engineering in Electrical Power Engineering

(36 Credit Hours)

5A. Compulsory courses *(9 Credit Hours)*

No.	Code	Course title	CH
1	EPR 611	Theories of Electrical Machines	3
2	EPR 621	Power System Analysis and Control	3
3	EPR 631	Power Electronics	3

5B. Elective Courses *(18 Credit Hours)*

SIX Courses are to be selected from this list

No	Code	Course title	CH
1	EPR 711	Control Systems of Electrical Machines	3
2	EPR 721	Power System Control	3
3	EPR 722	Power System Operation	3
4	EPR 723	Power System Planning	3
5	EPR 724	Digital Relaying	3
6	EPR 725	Applications of Optimization Techniques to Power Systems	3
7	EPR 726	Applications of Artificial Intelligence to Power Systems	3
8	EPR 761	Power Quality	3
9	EPR 731	High Voltage DC Transmission Systems	3
10	EPR 732	Advanced Power Electronics Systems	3
11	EPR 741	Wind Energy Systems	3
12	EPR 742	Distributed Generation	3
13	EPR 781	Advanced Electrical Testing	3
14	EPR 790	Selected Topics in Electrical Power Systems & Machines	3

5C. Seminars *(3 Credit Hours)*

No.	Code	Course Title	CH
1	EPR 791	Seminar #1	1
2	EPR 792	Seminar #2	1
3	EPR 793	Seminar #3	1

5D. International English Language Exam

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

5E. M.Eng. Applied Project *(6 Credit Hours)*

No.	Code	Course title	CH
1	EPR 798	Master of Engineering Applied Project	6

6. Master of Science in Electrical Power Engineering

(36 Credit Hours)

6A. Compulsory courses *(9 Credit Hours)*

No.	Code	Course title	CH
1	EPR 611	Theories of Electrical Machines	3
2	EPR 621	Power System Analysis and Control	3
3	EPR 631	Power Electronics	3

6B. Elective Courses *(9 Credit Hours)*

THREE Courses are to be selected from this list

No	Code	Course title	CH
1	EPR 711	Control Systems of Electrical Machines	3
2	EPR 721	Power System Control	3
3	EPR 722	Power System Operation	3
4	EPR 723	Power System Planning	3
5	EPR 724	Digital Relaying	3
6	EPR 725	Applications of Optimization Techniques to Power Systems	3
7	EPR 726	Applications of Artificial Intelligence to Power Systems	3
8	EPR 731	High Voltage DC Transmission Systems	3
9	EPR 732	Advanced Power Electronics Systems	3
10	EPR 741	Wind Energy Systems	3
11	EPR 742	Distributed Generation	3
12	EPR 761	Power Quality	
13	EPR 781	Advanced Electrical Testing	3
14	EPR 790	Selected Topics in Electrical Power Systems & Machines	3

6C. International English Language Exam

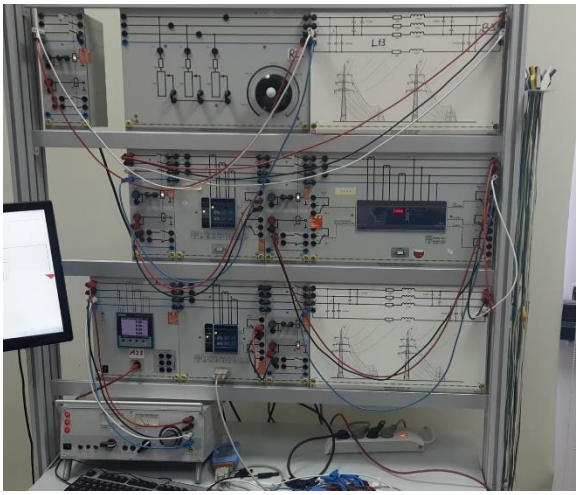
Should be passed before registering the thesis

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

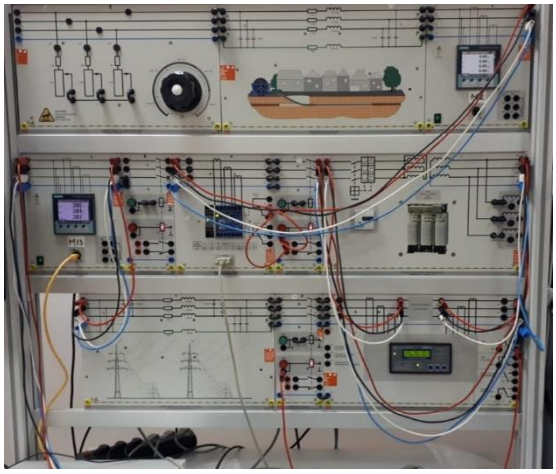
6D. M.Sc. Thesis *(18 Credit Hours)*

No.	Code	Course Title	CH
1	EPR 799	Master of Science Thesis	18

Supporting Facilities/Equipment



overcurrent protection of Radial distribution network simulation



Differential protection of transformers

Power System Simulator Lab.

Power Electronics Lab

7. Postgraduate Diploma in Mechatronics Engineering

(30 Credit Hours)

7A. Preliminary Courses *(12 Credit Hours)*

No.	Code	Course Title	CH
1	MTH 662	Statistics in Engineering	3
2	MKT 607	Project Management	3
3	MKT 614	Alternative and Renewable Energy	3
4	SCM 642	Engineering Contracts	3

7B. Compulsory Courses *(12 Credit Hours)*

No.	Code	Course Title	CH
1	MKT 601	Hydraulics and Pneumatics in Mechatronics Systems	3
2	MKT 602	Microcontroller Programming	3
3	MKT 603	Programmable Logic Controllers, PLC	3
4	MKT 604	Design of Mechatronics Systems *(Project based course)*	3

7C. Elective Courses *(6 CH)*

TWO Courses are to be selected from this list

No.	Code	Course Title	CH
1	MKT 605	Linear Control Systems	3
2	MKT 606	Critical Thinking	3
3	MKT 610	Automotive Engineering.	3
4	MKT 613	Bio-mechatronics.	3

8. Master of Engineering in Mechatronics Engineering

(36 Credit Hours)

8A. Compulsory Courses *(21 CH)*

No.	Code	Course Title	CH
1	MTH 662	Statistics in Engineering	3
2	MKT 601	Hydraulics and Pneumatics in Mechatronics Systems.	3
3	MKT 608	Operations Management and Simulation	3
4	MKT 609	Business Planning & Strategic Management:	3
5	MKT 701	Advanced Manufacturing and Manufacturing Systems.	3
6	MKT 702	Advanced Sensors	3
7	MKT 781	Seminar 1	1
8	MKT 782	Seminar 2	1
9	MKT 783	Seminar 3	1

8B. Elective Courses *(9 CH)*

THREE Courses are to be selected from this list

No.	Code	Course Title	CH
1	MKT 602	Microcontroller Programming	3
2	MKT 603	Programmable Logic Controllers (PLC)	3
3	MKT 604	Design of Mechatronics Systems *(Project based course)*	3
4	MKT 605	Linear Control Systems	3
5	MKT 610	Automotive Engineering	3
6	MKT 611	Business Economics	
7	MKT 703	Mechatronics Applications in Automotive Engineering	3
8	MKT 704	Alternative and Renewable Energy	3
9	MKT 790	Selected Topics in Mechatronics	3

8C. International English Language Exam

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

8D. Mechatronics Project *(6 Credit Hours)*

No.	Code	Course Title	CH
1	MKT 791	Mechatronics Project	6

9. Master of Science in Mechatronics Engineering

(36 Credit Hours)

9A. Compulsory Courses *(9 CH)*

No.	Code	Course Title	CH
1	MTH 661	Advanced mathematics and Statistics.	3
2	MKT 705	Nonlinear Control Systems.	3
3	MKT 706	Advanced Mechatronic systems design and simulation.	3

9B. Elective Courses *(9 CH)*

THREE Courses are to be selected from this list

No.	Code	Course Title	CH
1	MTH 663	Advanced Computer Programming	3
2	MKT 612	Machine Vision	3
3	MKT 613	Bio-mechatronics	3
4	MKT 702	Advanced Sensors	3
5	MKT 704	Alternative and Renewable Energy	3
6	MKT 707	Real Time Embedded Systems & Programming	3
7	MKT 708	Advanced Robotics	3
8	MKT 703	Mechatronics Applications in Automotive industry	3
9	MKT 709	Adaptive Control Systems	3
10	MKT 710	Multivariable Control Systems	3
11	MKT 790	Selected Topics in Mechatronics	3

9C. International English Language Exam

Should be passed before registering the thesis

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

9D. M.Sc. Thesis *(18 Credit Hours)*

No.	Code	Course Title	CH
1	MKT 799	Master of Science Thesis	18

Supporting Facilities/Equipment

AMATROL Complete Training System (7 modules)

PNEUMATICS – Electro-pneumatics training system

(Mechanisms)

Universal Testing Machine for Tensile 10 Ton

Fatigue Testing Machine

Digital Torsion Testing Machine

Centrifugal Compressor

Flow Visualization Apparatus

Air Conditioning Kit

10. Postgraduate Diploma in Structural Engineering

(30 Credit Hours)

10A. Preliminary Courses *(12 CH)*

No.	Code	Course Title	CH
1	SCM 601	Behavior and Design of Buildings Structural Systems	3
2	SCM 602	Structural Dynamics	3
3	SCM 603	Theory of Structural Stability	3
4	SCM 604	Engineering Statistics and Probabilities	3

10B. Compulsory Courses *(12 CH)*

No.	Code	Course Title	CH
1	SCM 605	Buildings Structural Performance and Failures	3
2	SCM 606	Finite Element Method	3
3	SCM 607	Behavior and Design of Tall Buildings	3
4	SCM 608	Design of structural Systems (Project based course)	3

10C. Elective Courses *(6 CH)*

TWO Courses are to be selected from this list

No.	Code	Course Title	CH
1	SCM 615	Behavior of Steel Structures	3
2	SCM 616	Advanced Soil Mechanics	3
3	SCM 617	Structural Materials Testing and Simulation	3
4	SCM 618	Design for Durability, Assessment and Repair	3

11. Master of Engineering (M.Eng.) in Structural Engineering

(36 Credit Hours)

11A. Compulsory Courses *(18 CH)*

No.	Code	Course Title	CH
1	SCM 602	Structural Dynamics	3
2	SCM 604	Engineering Statistics and Probabilities	3
3	SCM 606	Finite Element Method	3
4	SCM 607	Behavior and Design of Tall Buildings	3
5	SCM 615	Behavior of Steel Structures	3
6	SCM 616	Advanced Soil Mechanics	3

11B. Elective Courses *(12 CH)*

FOUR Courses are to be selected from this list

No.	Code	Course Title	CH
1	SCM 701	Behavior and Design of Masonry Structures	3
2	SCM 702	Advanced Reinforced Concrete	3
3	SCM 703	Design of Concrete Bridges	3
4	SCM 704	Advanced Foundation Engineering.	3
5	SCM 705	Special Steel Structures	3
6	SCM 706	Properties and Technology of Advanced Composite Materials	3
7	SCM 707	Wind and Earthquake Engineering	3

11C. International English Language Exam

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

11D. M.Eng. Project *(6 CH)*

No.	Code	Course Title	CH
1	SCM 730	Master of Engineering Project	6

12. Master of Science (M.Sc.) in Structural Engineering

(36 Credit Hours)

12A. Compulsory Courses *(9 CH)*

No.	Code	Course Title	CH
1	SCM 604	Engineering Statistics and Probabilities	3
2	SCM 606	Finite Element Method	3
3	SCM 607	Behavior and Design of Tall Buildings	3

12B. Elective Courses *(9 CH)*

THREE Courses are to be selected from this list

No.	Code	Course Title	CH
1	SCM 602	Structural Dynamics	3
2	SCM 615	Behavior of Steel Structures	3
3	SCM 616	Advanced Soil Mechanics	3
4	SCM 701	Behavior and Design of Masonry Structures	3
5	SCM 703	Design of Concrete Bridges	3
6	SCM 704	Advanced Foundation Engineering.	3
7	SCM 706	Properties and Technology of Advanced Composite Materials	3
8	SCM 707	Wind and Earthquake Engineering	3
9	SCM 711	Advanced Quality Control Approach for Concrete Structures	3

12C. International English Language Exam

Should be passed before registering the thesis

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

12D. M.Sc. Thesis *(18 CH)*

No.	Code	Course Title	CH
1	SCM 731	Master of Science Thesis	18

Supporting Facilities/Equipment

Loading Frame and Accessories

Machine for Measurement of Direct Shear for Soil

Machine for Measurement of Unconfined Pressure for Soil

Machine for Measurement of Compressive strength of R.C. Cubes

Machine for measurement of Cement Hardening

Concrete Mixer

Drying Oven for concrete specimens

13. Postgraduate Diploma in Project Management

(30 Credit Hours)

13A. Preliminary Courses *(12 CH)*

No.	Code	Course Title	CH
1	SCM 604	Engineering Statistics and Probabilities	3
2	SCM 609	Fundamentals of Project Management	3
3	SCM 610	Construction Engineering Contracts	3
4	SCM 611	Advanced Topics in Project Management	3

13B. Compulsory Courses *(12 CH)*

No.	Code	Course Title	CH
1	SCM 612	Construction Project Risk Management (Project Based Course)	3
2	SCM 613	Construction Project Productivity	3
3	SCM 614	Advanced Planning Techniques	3
4	SCM 619	Value Engineering in construction Projects	3

13C. Elective Courses *(6 CH)*

TWO Courses are to be selected from this list

No.	Code	Course Title	CH
1	SCM 620	Project & Enterprise Management	3
2	SCM 621	Managing the Construction Process	3
3	SCM 622	Supply Chain in Construction	3
4	SCM 623	Project Change Management	3

14. Master of Engineering (M.Eng.) in Project Management

(36 Credit Hours)

14A. Compulsory Courses *(18 CH)*

No.	Code	Course Title	CH
1	SCM 604	Engineering Statistics and Probabilities	3
2	SCM 610	Construction Engineering Contracts	3
3	SCM 611	Advanced Topics in Project Management	3
4	SCM 612	Construction Project Risk Management (Project Based Course)	3
5	SCM 613	Construction Project Productivity	3
6	SCM 614	Advanced Planning Techniques	3

14B. Elective Courses *(12 CH)*

No.	Code	Course Title	CH
1	SCM 619	Value Engineering in Construction Projects	3
2	SCM 623	Project Change Management	3
3	SCM 708	Building Information Modeling (BIM)	3
4	SCM 709	Sustainability in Construction Projects	3
5	SCM 710	Green Building Management	3
6	SCM 711	Advanced Quality Control Approach for Concrete Structures	3

14C. International English Language Exam

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

14D. M.Eng. Project *(6 CH)*

No.	Code	Course Title	CH
1	SCM 740	Master of Engineering Project	3

15. Master of Science (M.Sc.) in Project Management

(36 Credit Hours)

15A. Compulsory Courses *(18 CH)*

No.	Code	Course Title	CH
1	SCM 604	Engineering Statistics and Probabilities	3
2	SCM 610	Construction Engineering Contracts	3
3	SCM 612	Construction Project Risk Management (Project Based Course)	3

15B. Elective Courses *(12 CH)*

No.	Code	Course Title	CH
1	SCM 611	Advanced Topics in Project Management	3
2	SCM 613	Construction Project Productivity	3
3	SCM 614	Advanced Planning Techniques	3
4	SCM 619	Value Engineering in Construction Projects	3
5	SCM 623	Project Change Management	3
3	SCM 708	Building Information Modeling (BIM)	3
6	SCM 709	Sustainability in Construction Projects	3
7	SCM 710	Green Building Management	3
8	SCM 711	Advanced Quality Control Approach for Concrete Structures	3

15C. International English Language Exam

Should be passed before registering the thesis

Exam Type	TOEFL (paper-based)	TOEFL (internet-based)	IELTS
Minimum Score	500	61	6

15D. M.Sc. Thesis *(18 CH)*

No.	Code	Course Title	CH
1	SCM 741	Master of Science Thesis	18