

# DEPARTMENT OF TECHNOLOGIES

Technology can be a powerful tool for transforming learning. It can help affirm and advance relationships between educators and students, reinvent our approaches to learning and collaboration, shrink long-standing equity and accessibility gaps, and adapt learning experiences to meet the needs of all learners. The Department of Technologies focuses on students to prepare them as an efficient engineering technologist and to compose him/her professionally trained in certain aspects of development and implementation of a respective area of technology in order to boost industrialization, economic growth of society, and empower all students to be successful citizens of Pakistan.

Department of Technologies since its establishment is playing a vital role by providing outstanding graduates to the society and is acting as incubators of exploration and invention. The syllabus is continually under development and review as per HEC and NTC guidelines. We are collaborators in learning, seeking new knowledge and constantly acquiring new skills alongside our students. We have set a vision for creating learning experiences that provide the right tools and supports for all learners to thrive. We have state-of-the-art laboratories, library and other allied facilities where students can enhance their practical skills. Also, industrial/field visits are arranged on regular basis to boost and prepare the students for market.

## VISION

Striving for excellence in Engineering Technology programs boosting professionalism and sustainable development.

## MISSION

To produce graduates capable of applying their technical knowledge and skills to serve the society with professionalism and ethical norms.

## PROGRAMS OFFERED:

BSc Civil Engineering Technology

BSc Electrical Engineering Technology

BSc Mechanical Engineering Technology

BSc Electronics Engineering Technology

# FACULTY MEMBERS, DEPARTMENT OF TECHNOLOGIES

Dr. Wasal Khan	Director	Ph.D Education, Sarhad University, Peshawar, M.Sc Electronics, University of Peshawar
Engr. Muhammad Faisal Khan	Coordinator / Asst. Professor	MS Electrical Engineering (Power), UET Peshawar
Engr. Ali Ahmad Jibrani	Assistant Coordinator	MS Engineering Management, CECOS University, Peshawar
Mr. Hasnain Ali	Assistant Coordinator	MS Engineering Management, Sarhad University, Peshawar, B-Tech (Hon) Mechanical Sarhad University, Peshawar
Engr. Syed Zia Ud Din	Assistant Professor	MS Electrical Engineering, COMSATS, Abbottabad
Engr. Zahid Hussain	Assistant Professor	MS Engineering Management, Sarhad University, Peshawar
Engr. Fayaz Ahmad	Assistant Professor	MS Electrical Engineering, Sarhad University, Peshawar
Engr. Muhammad Daud Azam	Assistant Professor	MS Electrical Engineering, Sarhad University, Peshawar
Engr. Muhammad Siyab	Assistant Professor	MS Geotechnical Engineering, CECOS University Peshawar
Engr. Sardar Jafar Ali	Assistant Professor (on Leave)	MS Electrical Engineering, UET Taxila
Engr. Asad Khan	Assistant Professor	MSc Structural Engineering, UET Peshawar
Engr. Obaid ur Rehman	Assistant Professor	MS Structural Engineering, CECOS University, Peshawar
Mr. Muzamil Yaqoob	Lecturer / ILO	B.Sc Civil Engineering Technology, Sarhad University, Peshawar
Engr. Kashif Alam	Lecturer	MS Construction Engineering Management, Iqra National University Peshawar
Mr. Zabih Ullah	Lecturer	M-Tech Civil (Structural), CECOS University, Peshawar
Mr. Sajjad Hussain	Lecturer	MS Civil Engineering Technology, Sarhad University, Peshawar

# Bachelor of Science in Civil Engineering Technology

Program Code	149
Number of Courses	32 + Project + SIT
Credit Hours	136
Minimum Duration	8 Semesters, 4 Years
Maximum Duration	16 Semesters, 8 Years
Minimum CGPA Required To Earn Degree	2.00

## Eligibility :

3 Years Diploma of Associate Engineers from Technical Board in the relevant technology or F.Sc Pre-Engineering from any Intermediate Board with at-least 50% marks or equivalent qualification.

Candidates need to pass an aptitude Test / Interview conducted by the university.

## Program Educational Objectives (PEOs) :

- PEO-01:** Specialized Knowledge: The graduates will have the knowledge, skills, and abilities to solve issues with modern technologies in the field of Civil Engineering Technology.
- PEO-02:** Industrial Technology: The graduates will have an effective communication and management abilities in order to meet industry's technological needs.
- PEO-03:** Responsible Technologist: The graduates will exhibit professional integrity and commitment to social and ethical responsibilities.
- PEO-04:** Professional growth: The graduates will demonstrate professionalism and to nurture entrepreneurial and continuous professional development abilities.

## Outcome Based Education (OBE) System :

OBE is an educational process that focuses on what students can do or the qualities they should develop after they are taught. OBE involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than accumulation of course credits. It requires that the students demonstrate that they have learnt the required skills and contents.

The department has established an OBE committee to successfully implement OBE system. The committee is responsible for developing the CLOs (Course Learning Outcomes) for the courses and rubrics for Laboratories and Final Year Projects (FYP). Several training sessions and workshops were conducted to train the faculty members and lab engineers to be able to adopt OBE system.

## 1<sup>st</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.17
GH 101/102	Islamic Studies/Values, Ethics & Society (For Non Muslims)	2-0
MA 103	Applied Mathematics-I	3-0
CT 101	Surveying-I	2-2
CS 102	Introduction to Computer Fundamentals	2-1
CT 102	Civil Engineering Drawing	1-2
CT 103	Occupational Health & Safety Management	2-0

## 2<sup>nd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
GH 103	Pakistan Studies	2-0
MA 104	Applied Mathematics-II	3-0
CT 104	Concrete Technology	2-2
CT 105	Applied Mechanics	2-1
CT 106	Materials & Methods of Construction	2-2

# Bachelor of Science in Civil Engineering Technology

## 3<sup>rd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
CT 201	Architecture and Town Planning	2-0
CT 202	Quantity Surveying & Contract Documents	1-2
CT 203	Soil Mechanics	2-1
CT 204	Fluid Mechanics	2-1
CT 205	Mechanics of Solids	2-2
ENG 201	Communication Skills	3-0

## 4<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.17
CT 206	Transportation Engineering	2-2
CT 207	Water Supply & Waste Water Management	2-2
CT 209	Theory of Structures	2-1
CT 218	Surveying-II	2-1
ENG 212	Technical Report Writing	3-0

## 5<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
CT 301	Hydrology	2-1
CT 311	Reinforced Concrete Structure	2-1
CT 312	Construction Machinery	2-1
CT 313	Computer Aided Building Modeling and Design	1-2
CT 314	Foundation Engineering	2-1
MGT 302	Project Management	3-0

## 6<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.15
CT 315	Pre Stressed & Precast Concrete Technology	2-1
CT 316	Geology & Earthquake Engineering	2-1
CT 317	Irrigation and Hydraulic Structures	2-1
CT 318	Steel Structures	2-1
RES 391	Project Phase - I	0-3

## SUMMER SEMESTER

Course Code	Course Title	Cr. Hrs.3
RES 392	Project Phase II	0-3

## 7<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
CT 401	Supervised Industrial/ Field Training	0-16

## 8<sup>th</sup> SEMESTER

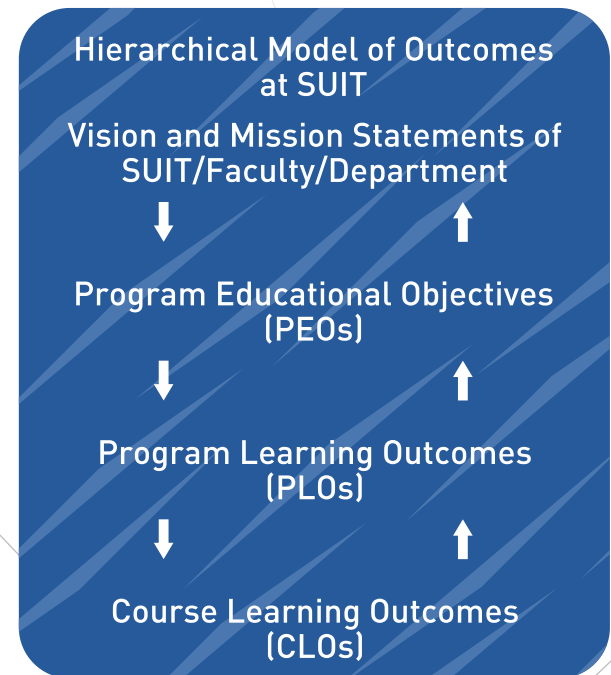
Course Code	Course Title	Cr. Hrs.16
CT 412	Supervised Industrial/ Field Training	0-16

## Program Learning Outcomes (PLOs):

- PLO-01: Engineering Technology Knowledge:** An ability to apply knowledge of mathematics, natural science, Engineering Technology fundamentals and Engineering Technology specialization to defined and applied Engineering Technology procedures, processes, systems or methodologies.
- PLO-02: Problem Analysis:** An ability to identify, formulate, research literature and analyses broadly-defined Engineering Technology problems reaching substantiated conclusions using analytical tools appropriate to the discipline or area of specialization.
- PLO-03: Design/Development of Solution:** An ability to design solutions for broadly- defined Engineering Technology problems and contribute to the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- PLO-04: Investigation:** An ability to conduct investigations of broadly-defined problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.

- PLO-05: Modern Tool Usage:** An ability to Select and apply appropriate techniques, resources, and modern technology and IT tools, including prediction and modeling, to broadly-defined Engineering Technology problems, with an understanding of the limitations.
- PLO-06: The Engineering Technologist and Society:** An ability to demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to Engineering Technology practice and solutions to broadly defined Engineering Technology problems.
- PLO-07: Environment and Sustainability:** An ability to understand and evaluate the sustainability and impact of Engineering Technology work in the solution of broadly defined Engineering Technology problems in societal and environmental contexts.
- PLO-08: Ethics:** Understand and commit to professional ethics and responsibilities and norms of Engineering Technology practice.
- PLO-09: Individual and Team Work:** An ability to Function effectively as an individual, and as a member or leader in diverse teams.
- PLO-10: Communication:** An ability to communicate effectively on broadly defined Engineering Technology activities with the Engineering Technologist community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PLO-11: Project Management:** An ability to demonstrate knowledge and understanding of Engineering Technology management principles and apply these to one's own work, as a member or leader in a team and to manage projects in multidisciplinary environments.

- PLO-12: Life-Long Learning:** An ability to recognize the need for, and have the ability to engage in independent and life-long learning in specialist Engineering Technologies.



SUIIT UNDERGRADUATE PROSPECTUS 2023-24

**NOTE:** Students are required to study The Holy Quran as per the directive of the Government of Pakistan. See section 5 (a) e (i and ii).

# Bachelor of Science in Electrical Engineering Technology

Program Code	146
Number of Courses	32 + Project + SIT
Credit Hours	135
Minimum Duration	8 Semesters, 4 Years
Maximum Duration	16 Semesters, 8 Years
Minimum CGPA Required To Earn Degree	2.00

## Eligibility :

3 Years Diploma of Associate Engineers from Technical Board in the relevant technology or F.Sc Pre-Engineering from any Intermediate Board with at-least 50% marks or equivalent qualification.

Candidates need to pass an aptitude Test/ Interview conducted by the university.

## Program Educational Objectives (PEOs) :

- PEO-01:** The graduates will have the knowledge, skills, and abilities to solve issues with modern technologies.
- PEO-02:** Technically qualified graduates with effective communication, management and entrepreneurial skills in order to meet industry's technology needs.
- PEO-03:** The graduates will exhibit professional integrity and commitment to social and responsibilities to make a positive contribution towards the society.

## Outcome Based Education (OBE) System :

OBE is an educational process that focuses on what students can do or the qualities they should develop after they are taught. OBE involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than accumulation of course credits. It requires that the students demonstrate that they have learnt the required skills and contents. The department has established an OBE committee to successfully implement OBE system. The committee is responsible for developing the CLOs (Course

Learning Outcomes) for the courses and rubrics for Laboratories and Final Year Projects (FYP). Several training sessions and workshops were conducted to train the faculty members and lab engineers to be able to adopt OBE system.

## 1<sup>st</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.17
GH 101/102	Islamic Studies/Values, Ethics & Society (For Non Muslims)	2-0
MA 103	Applied Mathematics-I	3-0
GS 101	Applied Physics (Electricity and Magnetism)	2-1
CS 102	Introduction to Computer Fundamentals	2-1
ET 101	Engineering Drawing	1-2
ET 102	Linear Circuit Analysis	2-1

## 2<sup>nd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
GH 103	Pakistan Studies	2-0
MA 104	Applied Mathematics-II	3-0
ET 103	Electronics	2-1
ET 104	Basic Mechanical Technology	2-1
ET 105	Electrical Instrumentations & Measurements	2-2
ET 106	Electrical Machines-I	2-1

## 3<sup>rd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
ET 201	Power Generation Systems	2-0
ET 202	Digital Electronics	2-2
ET 211	AC Circuit Analysis	2-2
ET 212	Data & Computer Communication	2-1
ENG 201	Communication Skills	3-0

## 4<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.14
ET 203	Electric Power Transmission	2-1
ET 213	Micro-Processor Theory & Interfacing	2-1
ET 214	Electromagnetic Field Theory	2-0
ET 215	Power Electronics	2-1
ENG 212	Technical Report Writing	3-0

## 5<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.17
ET 216	Electrical Power Distribution & Utilization	2-1
ET 301	Switch Gear & Protective Devices	2-1
ET 302	Communication Technology	2-2
ET 311	Electrical Machines-II	2-2
MGT 302	Project Management	3-0

## 6<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
ET 312	High Voltage Technology	2-1
ET 313	Power System Analysis	2-0
ET 314	Control Technology	2-1
ET 315	Industrial Drive & PLC	2-2
MGT 303	Total Quality Management	3-0
RES 391	Project Phase - I	0-3

## SUMMER SEMESTER

Course Code	Course Title	Cr. Hrs.3
RES 392	Project Phase II	0-3

## 7<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
CT 401	Supervised Industrial/ Field Training	0-16

## 8<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
CT 412	Supervised Industrial/ Field Training	0-16

## Program Learning Outcomes (PLOs):

- PLO-01: Engineering Technology Knowledge:** An ability to apply knowledge of mathematics, natural science, Engineering Technology fundamentals and Engineering Technology specialization to defined and applied Engineering Technology procedures, processes, systems or methodologies.
- PLO-02: Problem Analysis:** An ability to Identify, formulate, research literature and analyses broadly-defined Engineering Technology problems reaching substantiated conclusions using analytical tools appropriate to the discipline or area of specialization.
- PLO-03: Design/Development of Solution:** An ability to design solutions for broadly- defined Engineering Technology problems and contribute to the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

- PLO-04:** Investigation: An ability to conduct investigations of broadly-defined problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.
- PLO-05: Modern Tool Usage:** An ability to Select and apply appropriate techniques, resources, and modern technology and IT tools, including prediction and modeling, to broadly-defined Engineering Technology problems, with an understanding of the limitations.
- PLO-06: The Engineering Technologist and Society:** An ability to demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to Engineering Technology practice and solutions to broadly defined Engineering Technology problems.
- PLO-07: Environment and Sustainability:** An ability to understand and evaluate the sustainability and impact of Engineering Technology work in the solution of broadly defined Engineering Technology problems in societal and environmental contexts.
- PLO-08: Ethics:** Understand and commit to professional ethics and responsibilities and norms of Engineering Technology practice.
- PLO-09: Individual and Team Work:** An ability to Function effectively as an individual, and as a member or leader in diverse teams.
- PLO-10: Communication:** An ability to communicate effectively on broadly defined Engineering Technology activities with the Engineering Technologist community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PLO-11: Project Management:** An ability to demonstrate knowledge and understanding of Engineering Technology management principles and apply these to one's own work, as a member or leader in a team and to manage projects in multidisciplinary environments.

**PLO-12: Life-Long Learning:** An ability to recognize the need for, and have the ability to engage in independent and life-long learning in specialist Engineering Technologies.

### Hierarchical Model of Outcomes at SUIIT

Vision and Mission Statements of SUIIT/Faculty/Department



Program Educational Objectives (PEOs)



Program Learning Outcomes (PLOs)



Course Learning Outcomes (CLOs)

**NOTE:** Students are required to study The Holy Quran as per the directive of the Government of Pakistan. See section 5 (a) e (i and ii).



# Bachelor of Science in Mechanical Engineering Technology

Program Code	148
Number of Courses	32 + Project + SIT
Credit Hours	136
Minimum Duration	8 Semesters, 4 Years
Maximum Duration	16 Semesters, 8 Years
Minimum CGPA Required To Earn Degree	2.00

## Eligibility :

3 Years Diploma of Associate Engineers from Technical Board in the relevant technology or F.Sc Pre-Engineering from any Intermediate Board with at-least 50% marks or equivalent qualification.

Candidates need to pass an aptitude Test/ Interview conducted by the university.

## Program Educational Objectives (PEOs) :

- PEO-01:** The graduates will have knowledge, skills, and abilities to solve issues with modern technologies.
- PEO-02:** Technically qualified growth with effective communication, management abilities, and entrepreneur skills in order to meet industry's technological needs.
- PEO-03:** The graduates will exhibit professional integrity and commitment to social and ethical responsibilities to make a positive contribution towards the society.

## Outcome Based Education (OBE) System :

OBE is an educational process that focuses on what students can do or the qualities they should develop after they are taught. OBE involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than accumulation of course credits. It requires that the students demonstrate that they have learnt the required skills and contents. The department has established an OBE committee to successfully implement OBE system. The

committee is responsible for developing the CLOs (Course Learning Outcomes) for the courses and rubrics for Laboratories and Final Year Projects (FYP). Several training sessions and workshops were conducted to train the faculty members and lab engineers to be able to adopt OBE system.

## 1<sup>st</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.17
GH 101/102	Islamic Studies/Values, Ethics & Society (For Non Muslims)	2-0
MA 103	Applied Mathematics - I	3-0
GS 102	Applied Physics (Mechanics)	2-1
CS 102	Introduction to Computer Fundamentals	2-1
MT 101	Applied Chemistry	2-1
MT 102	Engineering Statics	2-1

## 2<sup>nd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
GH 103	Pakistan Studies	2-0
MA 104	Applied Mathematics - II	3-0
MT 103	Technical Drawing and CAD - I	2-2
MT 104	Applied Thermodynamics-I	2-2
MT 105	Workshop Technology	1-2

# Bachelor of Science in Mechanical Engineering Technology

## 3<sup>rd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
MT 201	Mechanics of Materials	2-1
MT 202	Basic Electrical and Electronics	2-2
MT 211	Engineering Dynamics	2-1
MA 203	Probability and Statistics	3-0
ENG 201	Communication Skills	3-0

## 4<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
MT 203	Machine Design	3-0
MT 204	Fluid Mechanics	2-1
MT 205	Industrial Material	2-1
MT 206	Manufacturing Processes	2-1
MT 212	Applied Thermodynamics-II	2-1
ENG 212	Technical Report Writing	3-0

## 5<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
MT 301	Heat Transfer	2-1
MT 302	Mechanical Vibration	2-1
MT 303	Material Handling and Safety	3-1
MT 304	Engineering Economics	2-0
MT 311	CAD-II	0-3
MGT 302	Project Management	3-0

## 6<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
MT 312	Instrumentation & Control	2-1
MT 313	Internal Combustion (IC) Engine	2-2
MT 314	Refrigeration & Air Conditioning	2-1
MGT 303	Total Quality Management	3-0
RES 391	Project Phase - I	0-3

## SUMMER SEMESTER

Course Code	Course Title	Cr. Hrs.3
RES 392	Project Phase II	0-3

## 7<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
MT 401	Supervised Industrial/ Field Training	0-16

## 8<sup>th</sup> SEMESTER

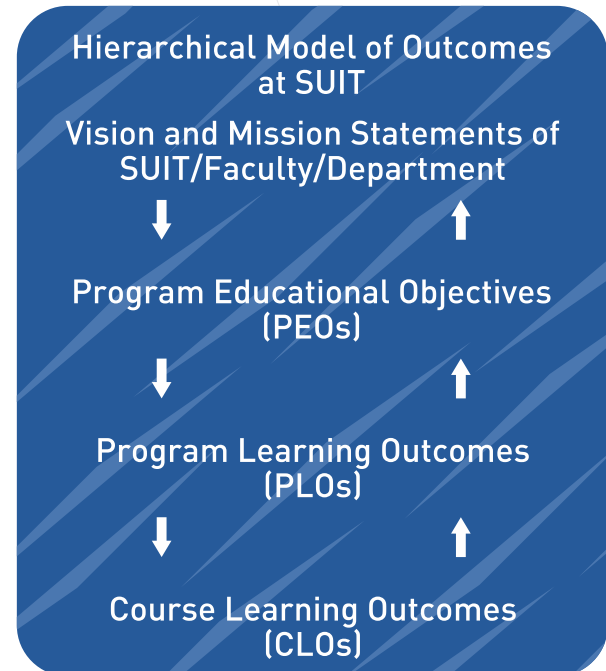
Course Code	Course Title	Cr. Hrs.16
MT 412	Supervised Industrial/ Field Training	0-16

## Program Learning Outcomes (PLOs):

- PLO-01: Engineering Technology Knowledge:** An ability to apply knowledge of mathematics, natural science, Engineering Technology fundamentals and Engineering Technology specialization to defined and applied Engineering Technology procedures, processes, systems or methodologies.
- PLO-02: Problem Analysis:** An ability to Identify, formulate, research literature and analyses broadly-defined Engineering Technology problems reaching substantiated conclusions using analytical tools appropriate to the discipline or area of specialization.
- PLO-03: Design/Development of Solution:** An ability to design solutions for broadly- defined Engineering Technology problems and contribute to the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

- PLO-04: Investigation:** An ability to conduct investigations of broadly-defined problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.
- PLO-05: Modern Tool Usage:** An ability to Select and apply appropriate techniques, resources, and modern technology and IT tools, including prediction and modeling, to broadly-defined Engineering Technology problems, with an understanding of the limitations.
- PLO-06: The Engineering Technologist and Society:** An ability to demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to Engineering Technology practice and solutions to broadly defined Engineering Technology problems.
- PLO-07: Environment and Sustainability:** An ability to understand and evaluate the sustainability and impact of Engineering Technology work in the solution of broadly defined Engineering Technology problems in societal and environmental contexts.
- PLO-08: Ethics:** Understand and commit to professional ethics and responsibilities and norms of Engineering Technology practice.
- PLO-09: Individual and Team Work:** An ability to Function effectively as an individual, and as a member or leader in diverse teams.
- PLO-10: Communication:** An ability to communicate effectively on broadly defined Engineering Technology activities with the Engineering Technologist community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- PLO-11: Project Management:** An ability to demonstrate knowledge and understanding of Engineering Technology management principles and apply these to one's own work, as a member or leader in a team and to manage projects in multidisciplinary environments.
- PLO-12: Life-Long Learning:** An ability to recognize the need for, and have the ability to engage in independent and life-long learning in specialist Engineering Technologies.



**NOTE:** Students are required to study The Holy Quran as per the directive of the Government of Pakistan. See section 5 (a) e (i and ii).

# Bachelor of Science in Electronics Engineering Technology

Program Code	147
Number of Courses	32 + Project + SIT
Credit Hours	139
Minimum Duration	8 Semesters, 4 Years
Maximum Duration	16 Semesters, 8 Years
Minimum CGPA Required To Earn Degree	2.00

## Eligibility :

3 Years Diploma of Associate Engineers from Technical Board in the relevant technology or F.Sc Pre-Engineering from any Intermediate Board with at-least 50% marks or equivalent qualification.

Candidates need to pass an aptitude Test/ Interview conducted by the university.

## Program Educational Objectives (PEOs) :

- PEO-1:** To be successful Electronics Engineering Technologist and serve the community competently by the application of professional knowledge and skills.
- PEO-2:** To be professional, fulfilling the academic and industrial requirements by applying modern tools, using communication skills and effective management as an individual and a team member.
- PEO-3:** To understand needs of the society, follow ethical practices in a technology environment and seek continuous technological developments.

## Outcome Based Education (OBE) System :

OBE is an educational process that focuses on what students can do or the qualities they should develop after they are taught. OBE involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than accumulation of course credits. It requires that the students demonstrate that they have learnt the required skills and contents. The department has established an OBE committee to successfully implement OBE system. The

committee is responsible for developing the CLOs (Course Learning Outcomes) for the courses and rubrics for Laboratories and Final Year Projects (FYP). Several training sessions and workshops were conducted to train the faculty members and lab engineers to be able to adopt OBE system.

## 1<sup>st</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
GH 101/102	Islamic Studies/Values, Ethics & Society (For Non Muslims)	2-0
MA 103	Applied Mathematics-I	3-0
GS 101	Applied Physics (Electricity and Magnetism)	2-1
CS 102	Introduction to Computer Fundamentals	2-1
ELT 101	Electronic Workshop Practice	0-1
ELT 102	Electrical Circuit Analysis	3-1

## 2<sup>nd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.17
GH 103	Pakistan Studies	2-0
MA 104	Applied Mathematics-II	3-0
ELT 103	Electrical Technology-I	3-1
ELT 104	Digital Logic Technology	3-1
CS 112	Computer Programming	2-1
ELT 105	PCB Design and Fabrication Workshop	0-1

### 3<sup>rd</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
ELT 211	Electrical Technology-II	3-1
ELT 201	Electronics Devices & Technology	3-1
ENG 201	Communication Skills	3-0
ELT 212	Data & Computer Communication	2-1
ELT 202	Instrumentation & Measurements	3-1

### 4<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
ENG 212	Technical Report Writing	3-0
ELT 203	Communication Systems & Techniques	3-1
ELT 213	Microprocessor Architecture and Assembly Language	2-1
ELT 214	Electromagnetic Field Theory	2-0
ELT 215	Power Electronics	2-1
ELT 216	Amplifier & Oscillators	2-1

### 5<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.18
ELT 301	Renewable Energy Technology	2-1
ELT 302	Industrial Drives	3-1
ELT 311	VLSI Technology	3-1
MGT 302	Project Management	3-0
ELT 312	Applied Antenna & Wave Propagation	3-1

### 6<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.17
ELT 313	Industrial Automation and Robotics	3-1
ELT 314	Control Technology	2-1
ELT 315	FPGA Based Systems	3-1
ELT 316	Industrial Electronics Application	2-1
RES 391	Project Phase - I	0-3

### SUMMER SEMESTER

Course Code	Course Title	Cr. Hrs.3
RES 392	Project Phase II	0-3

### 7<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
ELT 401	Supervised Industrial/ Field Training	0-16

### 8<sup>th</sup> SEMESTER

Course Code	Course Title	Cr. Hrs.16
ELT 412	Supervised Industrial/ Field Training	0-16

### Program Learning Outcomes (PLOs):

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### Hierarchical Model of Outcomes at SUI

Vision and Mission Statements of SUI/Faculty/Department



Program Educational Objectives (PEOs)



Program Learning Outcomes (PLOs)



Course Learning Outcomes (CLOs)