

CURRICULUM

Bachelor of Engineering Technology Honours (BET Hons)

Faculty of Technology Sabaragamuwa University of Sri Lanka P.O. Box 02, 70140, Belihuloya

January, 2019

DEPARTMENT OF ENGINEERING TECHNOLOGY

Program Learning Outcomes (PLO)

On successful completion of this program student should be able to,

- 1. Apply knowledge of basic Sciences, Mathematics, Engineering fundamentals and Mechanical Technology procedures, processes and systems.
- 2. Select, apply and adapt modern Engineering and IT techniques, resources and tools to broadly-defined Mechanical and Electrical Technology activities with an understanding of the associated limitations.
- 3. Undertake problem identification, formulation and solution of Mechanical and Electrical Technology problems using methods that involve appropriate experiments, analysis and interpretation of data and synthesis of information to reach valid conclusions.
- 4. Utilize a system approach to design and operational performance.
- 5. Effectively function as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as effective team member.
- 6. Acquire the understanding of the social, cultural, global and environmental responsibilities of the professional Engineer and the need for sustainable development.
- 7. Acquire the understanding of the principles of sustainable design and development.
- 8. Acquire the understanding of the understanding of professional and ethical responsibilities and commitment to them.
- 9. Communicate effectively on Engineering Technology activities with the Engineering community and with society at large.

GENERAL INFORMATION OF THE PROGRAMME

- 1. Title of the Degree : Bachelor of Engineering Technology Honours (BET Hons)
- 2. Time duration : 4-years
- 3. Number of Credits : 120
- 4. SLQF Level: 6
- 5. Medium of Instruction : English
- 6. **Student Intake :** $75 \times 4 \text{ years} = 300$

- 7. Department : Department of Engineering Technology
- 8. Name of the Faculty : Faculty of Technology
- 9. Name of the University : Sabaragamuwa University of Sri Lanka
- 10. **Qualifications to Follow Degree Programme:** Candidates who have passed G.C.E Advanced Level (A/L) following subjects Science for Technology and Engineering Technology are eligible to follow the degree programme.
- 11. Salient Features of the Degree Programme: It is intended to deliver a globally recognized, objective-based, student-centered, industry-oriented degree programme that will produce professionals with abilities for creativity, innovation, product development and with entrepreneurial skills suited for careers in the industrial market in Engineering technology. The areas covered in the core programme include Basic science modules, Mathematics and Computing modules, Communication modules, Technology modules, Design and Manufacturing modules and Management and other disciplinary areas.



Structure of the Degree Programme :

COURSE AND CREDIT DISTRIBUTION

Department of Engineering Technology

| Course Code Abbreviation | : ET – Engineering Technology |
|--------------------------|---------------------------------------|
| Fist Digit | : Year |
| Second Digit | : Semester |
| Third and fourth Digit | : Course Number of the Given Semester |
| Last Digit | : Number of Credit of the Course |

All the courses offered in Year I and Year II are compulsory

Prerequisites: Students who have 80% attendance in taught classes are eligible for final written examination of the course.

Continuous Assessment: There should be at least 2 evaluation components such as assignment, in-class, quiz, midterm examination, presentation, etc as specified in the curricular for each course as appropriate.

COURSE DESCRIPTION – Bachelor of Engineering Technology Honours (BET (Hons))

| Year | Semester I | Semester II | Total |
|----------|------------|-------------|-------|
| Year I | 18 | 18 | 36 |
| Year II | 18 | 18 | 36 |
| Year III | 17 | 06 | 23 |
| Year IV | 10 | 15 | 25 |
| Total | | | 120 |

Numbers of Credits of the BET (Hons) Degree

| Year I | | | |
|-----------------|---|----------------|-------------------------------|
| Semester I – | - A student must earn a minimum of 18 credits | | |
| Course | Course Title | No. of | Compulsory/Optional |
| Code | | Credits | |
| ET 11013 | Engineering drawing and Computer | 3 | Compulsory |
| | Aided Drafting | | |
| | This introductory module aims to provide th | e necessary | knowledge about, drawing |
| | standards, and symbols, and the ability to rea | d and interp | oret mechanical engineering |
| | drawings and to develop skills in preparing | ng engineer | ing drawings adhering to |
| | international standards including the use of Co | omputer Aide | ed Drafting software for the |
| | preparation of drawings. | | |
| ET 11023 | Workshop Technology and Practice | 3 | Compulsory |
| | This module provide the necessary knowledge f | or identifyin | g the applications of various |
| | workshop tools, machinery and operations, ar | nd their appl | lications, limitations and to |
| | acquire the skills in carrying out basic ma | chining proc | cesses and other workshop |
| | operations including welding while following sa | afety practice | vs. |
| ET 11032 | Mathematics I | 2 | Compulsory |
| | This course targets to provide an understanding | g of fundame | entals of mathematics and to |
| | develop skills in mathematical problem solvi | ing needed | in the field of engineering |
| | technology by developing an understanding | of the appli | cations of the methods of |
| DT 11040 | matrices and determinants, differentiation and in | ntegration | |
| ET 11043 | Physics for Technology | 3 | Compulsory |
| | This is an introductory module to introduce fur | idamentals o | t physics for modelling and |
| | analysis of physical systems in terms of their me | echanical and | thermal behaviour |
| ET 11053 | Chemistry for Technology | 3 | Compulsory |
| | The aim is to introduce basic chemistry a | is applied i | n industrial processes for |
| | understanding, interpreting and optimizing ind | ustrial proce | esses and systems involving |
| | chemical phenomena. | • | |
| ЕТ 11062 | Computer Fundamentals and PC | 2 | Compulsory |
| | Applications | | |

| Systems, networks, application software and develop skills for the use of compulers. ET 11072 English 2 Compulsory The module aim is to facilitate the undergraduates in their academic work, by making the students confident in using the language appropriately, accurately and fluently in any given situation. 0 Compulsory ET 11080 Creative Mini-project 0 Compulsory This module develop the necessary knowledge and skills in analysing problems and situations and providing solutions by making decisions based on technological, scientific and logical approaches. 18 Semester II - A student must earn a minimum of 18 credits 18 FT 12013 Fundamentals of Thermodynamics 3 Compulsory This module provides an understanding of fundamental laws governing the feavior of mechanica systems, the relevant mathematical relationships and ability to apply them to simple thermodynamics, stems and covers system definition, the first and second laws of thermodynamics, heat engine cycles, the measurement of engine performance and the combustion analysis of fuel. ET 12023 Applied Mechanics 3 Compulsory This module gives an understanding of fundamental laws governing the helavior of mechanical systems, the relevant mathematical relationships and ability to apply them to simple mechanical systems. 3 Compulsory ET 12023 Applied Mechanics 3 Compulsory | | This module aims is to provide basic know | wledge of computer | architecture, operating |
|--|---------------|---|--------------------------|---------------------------------------|
| E1 110/2 English 2 Compulsory The module aim is to facilitate the undergraduates in their academic work, by making the students confident in using the language appropriately, accurately and fluently in any given situation. ET 11080 Creative Mini-project 0 Compulsory This module develop the necessary knowledge and skills in analysing problems and situations and providing solutions by making decisions based on technological, scientific and logical approaches. 18 Semester II - A student must earn a minimum of 18 credits 18 ET 12013 Fundamentals of Thermodynamics 3 Compulsory This module provides an understanding of fundamental laws governing the 6ehavior of thermodynamic systems, the relevant mathematical relationships and ability to apply them to simple thermodynamic systems. 3 Compulsory This module gives an understanding of fundamental laws governing the behavior of mechanical systems, the relevant mathematical relationships and ability to apply them to simple mechanical systems. 3 Compulsory ET 1203 Applied Mechanics 3 Compulsory This module targets to provide an understanding of fundamental laws governing the behavior of mechanical systems. ET 1203 Applied Mechanics 3 Compulsory This module targets to provide an understanding of fundamental laws governing electrical systems. ET 1203 Compulsory | EE 11050 | Systems, networks, application software a | ind develop skills to | or the use of computers. |
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| ET 12043 Properties and Strength of Materials 3 Compulsory This module will provide knowledge about physical properties of common materials and their applications in engineering and to broaden and deepen the learner's knowledge of the principles and techniques used in stress analysis and be able to determine the stresses and strains induced in simple shaped components when subjected to loads in various forms. ET 12052 Mathematics 2 2 Compulsory This module aims to provide an understanding of fundamentals of mathematics and to develop skills in mathematical problem solving needed in the field of engineering technology by developing an understanding of basic concepts, methods and techniques of complex numbers and ordinary differential equations, and trigonometry with the ability to apply them for solving simple problems in Engineering Technology. ET 12062 Computer Programming Techniques 2 Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. 18 Year II Semester I – A student must earn a minimum of 18 credits 2 Compulsory | | electrical systems, and the ability to app | ply them to solve | problems involving simple |
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| and their applications in engineering and to broaden and deepen the learner's knowledge of the principles and techniques used in stress analysis and be able to determine the stresses and strains induced in simple shaped components when subjected to loads in various forms. ET 12052 Mathematics 2 2 Compulsory This module aims to provide an understanding of fundamentals of mathematics and to develop skills in mathematical problem solving needed in the field of engineering technology by developing an understanding of basic concepts, methods and techniques of complex numbers and ordinary differential equations, and trigonometry with the ability to apply them for solving simple problems in Engineering Technology. ET 12062 Computer Programming Techniques 2 Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. 18 Year II Semester I – A student must earn a minimum of 18 credits 2 Compulsory | E1 12045 | This module will provide knowledge al | bout physical prope | erties of common materials |
| and and approximation in the instruction of the principles and techniques used in stress analysis and be able to determine the stresses and strains induced in simple shaped components when subjected to loads in various forms. ET 12052 Mathematics 2 2 Compulsory This module aims to provide an understanding of fundamentals of mathematics and to develop skills in mathematical problem solving needed in the field of engineering technology by developing an understanding of basic concepts, methods and techniques of complex numbers and ordinary differential equations, and trigonometry with the ability to apply them for solving simple problems in Engineering Technology. ET 12062 Computer Programming Techniques 2 Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. 18 Year II Semester I – A student must earn a minimum of 18 credits 2 Compulsory | | and their applications in engineering | ng and to broaden | and deepen the learner's |
| determine the stresses and strains induced in simple shaped components when subjected to loads in various forms. ET 12052 Mathematics 2 Mathematics 2 Compulsory This module aims to provide an understanding of fundamentals of mathematics and to develop skills in mathematical problem solving needed in the field of engineering technology by developing an understanding of basic concepts, methods and techniques of complex numbers and ordinary differential equations, and trigonometry with the ability to apply them for solving simple problems in Engineering Technology. ET 12062 Computer Programming Techniques Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills Total credits Total credits Total credits Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. Total credits 18 | | knowledge of the principles and techni | aues used in stres | s analysis and be able to |
| to loads in various forms. ET 12052 Mathematics 2 2 Compulsory This module aims to provide an understanding of fundamentals of mathematics and to develop skills in mathematical problem solving needed in the field of engineering technology by developing an understanding of basic concepts, methods and techniques of complex numbers and ordinary differential equations, and trigonometry with the ability to apply them for solving simple problems in Engineering Technology. ET 12062 Computer Programming Techniques 2 Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. Total credits Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. Total credits Total credits < | | determine the stresses and strains induced | l in simple shaped c | components when subjected |
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| This module aims to provide an understanding of fundamentals of mathematics and to develop skills in mathematical problem solving needed in the field of engineering technology by developing an understanding of basic concepts, methods and techniques of complex numbers and ordinary differential equations, and trigonometry with the ability to apply them for solving simple problems in Engineering Technology.ET 12062Computer Programming Techniques 22CompulsoryThe module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling.2CompulsoryET 12072Communication Skills2CompulsoryThe course also aims to address the academic communication needs of students studying in the technology discipline.18Year IISemester I – A student must earn a minimum of 18 credits2CompulsoryET 21012Automobile Technology2Compulsory | ET 12052 | Mathematics 2 | 2 | Compulsory |
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| of complex numbers and ordinary differential equations, and trigonometry with the ability to apply them for solving simple problems in Engineering Technology. ET 12062 Computer Programming Techniques 2 Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. Total credits 18 Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | | technology by developing an understandi | ing of basic concep | ts, methods and techniques |
| ET 12062 Computer Programming Techniques 2 Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. 18 Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | | of complex numbers and ordinary diffe | erential equations, a | and trigonometry with the |
| ET 12062 Computer Programming Techniques 2 Compulsory The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. 18 Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | ET 120/2 | ability to apply them for solving simple pr | roblems in Engineer | ing Technology. |
| The module aim is to develop basic practical skills in computer programming including control Structures, functions, pointers and arrays and file handling. ET 12072 Communication Skills 2 Compulsory The course also aims to address the academic communication needs of students studying in the technology discipline. Total credits Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | EI 12062 | Computer Programming Techniques | <u> </u> | Compulsory |
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| ET 12072 Computation Skins 2 Computation The course also aims to address the academic communication needs of students studying in the technology discipline. Total credits 18 Year II Semester I – A student must earn a minimum of 18 credits Z Compulsory ET 21012 Automobile Technology 2 Compulsory | FT 12072 | Communication Skills | | Compulsory |
| Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | E1 12072 | The course also aims to address the acade | <u>mic communication</u> | needs of students studying |
| In the technology discipline. Total credits 18 Year II Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | | in the technology discipline | | Theeds of students studying |
| Year II Year a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | | Total credits | 18 | |
| Year IISemester I – A student must earn a minimum of 18 creditsET 21012Automobile Technology2Compulsory | | | 10 | |
| Semester I – A student must earn a minimum of 18 credits ET 21012 Automobile Technology 2 Compulsory | Year II | | | |
| ET 21012 Automobile Technology 2 Compulsory | Semester I – | - A student must earn a minimum of 18 cr | edits | |
| | ET 21012 | Automobile Technology | 2 | Compulsory |

| | This module aims to analyse motor vehicle | le as a collection of integrated systems and construction methods and performance |
|---|---|---|
| | characteristics of its sub systems including e | electrical and electronic systems. |
| ET 21023 | Design of Machine elements | 3 Compulsory |
| - | This module will introduce standard design | gn procedure of common machine elements |
| | including selection of material, standard | components and other aspects needed for |
| | design and manufacture. | * * |
| ET 21033 | Manufacturing Processes 1 | 3 Compulsory |
| | The module aim is to identify and assess the | e capability of basic manufacturing processes |
| | for meeting product specifications, selec | ct and sequence machinery, tooling and |
| | accessories required for manufacturing simpl | ble products. |
| ET 21043 | Probability and Statistics | 3 Compulsory |
| | The module target to provide a broad knowl | ledge of the fundamentals of probability and |
| | statistics and develop skills in the applica | ation of statistical techniques and analyses |
| | required in the field of engineering tec | chnology such as parameter estimations. |
| | hypothesis testing, design of statistical exper | riments, analysis of variance, and analysis of |
| ET 21052 | Count data using statistical software. | 2 Compulsowy |
| EI 21055 | This module will provide the pacessary k | 5 Computery |
| | concepts of Electronics for the design analy | knowledge and skins in the application of electronic instruments |
| | and systems including applications for data a | acquisition and storage |
| ET 21062 | Professional Communication | 2 Compulsory |
| <u>L1 21002</u> | The course also aims to address the academi | nic and professional communication needs of |
| | technologists in industry. | ne and professional communication needs of |
| ET 21072 | Industrial Metrology | 2 Compulsory |
| | The module aim is to introduce fundamental | lls, instruments and methods of measurement |
| | and calibration used for industrial metrology | <i>V</i> |
| | and canoration used for medistrial metrology | 7 |
| | Total Credits | 18 |
| | Total Credits | 18 |
| Semester II - | - A student must earn a minimum of 18 cred | 18 edits |
| Semester II - ET 22011 | - A student must earn a minimum of 18 cree Field Studies | 18 edits 1 Compulsory |
| Semester II - ET 22011 | A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary e | 18 2dits 1 Compulsory exposure to the student to the world of work |
| Semester II - ET 22011 | A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse | 18 2dits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale |
| Semester II - ET 22011 | Total Credits Total Credits A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applic which emergence of an early store will equip | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management ord invirue the student to diligently encoded |
| Semester II - ET 22011 | A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management and inspire the student to diligently engage |
| Semester II - ET 22011 | Total Credits Total Credits A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies. Computer Aided Design | 18 2dits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management and inspire the student to diligently engage 3 Compulsory |
| Semester II - ET 22011 ET 22023 | Total Credits A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management o and inspire the student to diligently engage 3 Compulsory lents to the basic concepts mathematical |
| Semester II - ET 22011 ET 22023 | Total Credits Total Credits Total Credits The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applied which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude formulation and general procedure of the formulation and general procedure of t | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to |
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| Semester II - ET 22011 ET 22023 | Total Credits A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude formulation and general procedure of the f solving engineering problems involving soli design. | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to id modelling using commercial software for |
| Semester II - ET 22011 ET 22023 ET 22023 | - A student must earn a minimum of 18 cree - A student must earn a minimum of 18 cree - Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies. - Computer Aided Design This module aims to introduce the stude formulation and general procedure of the formulation and general procedure of the formulation and general procedure of the formulation and general procedure studies. - Manufacturing Processes 2 | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to 'id modelling using commercial software for 3 Compulsory |
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| Semester II - ET 22011 ET 22023 ET 22033 | Total Credits A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude formulation and general procedure of the f solving engineering problems involving solid design. Manufacturing Processes 2 The module aim is to identify and assess the for meeting product specifications, selection | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to id modelling using commercial software for 3 Compulsory e capability of basic manufacturing processes ct and sequence machinery, tooling and |
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| Semester II - ET 22011 ET 22023 ET 22033 ET 22043 | A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude formulation and general procedure of the f solving engineering problems involving soli design. Manufacturing Processes 2 The module aim is to identify and assess the for meeting product specifications, select accessories required for manufacturing simple Mechanical Power Transmission | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to id modelling using commercial software for 3 Compulsory e capability of basic manufacturing processes ct and sequence machinery, tooling and e products. 3 Compulsory |
| Semester II - ET 22011 ET 22023 ET 22033 ET 22043 | Total Credits A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applie which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude formulation and general procedure of the f solving engineering problems involving solid design. Manufacturing Processes 2 The module aim is to identify and assess the for meeting product specifications, select accessories required for manufacturing simplification of the module aim is to identify and assess the for meeting product specifications, select accessories required for manufacturing simplification of the module will introduce design procedure of the formulation and general for manufacturing simplification of the formulation and general procedure of the formulation and genera | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management o and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to id modelling using commercial software for 3 Compulsory e capability of basic manufacturing processes ct and sequence machinery, tooling and ole products. 3 Compulsory of common components used in mechanical |
| Semester II - ET 22011 ET 22023 ET 22033 ET 22043 | Total Credits A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applid which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude formulation and general procedure of the f solving engineering problems involving solid design. Manufacturing Processes 2 The module aim is to identify and assess the for meeting product specifications, select accessories required for manufacturing simpl Mechanical Power Transmission To module will introduce design procedure of power transmission including selection of | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management o and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to id modelling using commercial software for 3 Compulsory e capability of basic manufacturing processes ct and sequence machinery, tooling and ole products. 3 Compulsory of common components used in mechanical f material, kinematics and kinetic aspects |
| Semester II - ET 22011 ET 22023 ET 22033 ET 22043 | A student must earn a minimum of 18 cree Field Studies The module aim is to provide a preliminary of in order to create an opportunity to analyse work place based on its technology applid which exposure at an early stage will equip in related studies. Computer Aided Design This module aims to introduce the stude formulation and general procedure of the formulation and general processes 2 The module aim is to identify and assess the for meeting product specifications, select accessories required for manufacturing simple Mechanical Power Transmission To module will introduce design procedure of needed for selection and design. | 18 edits 1 Compulsory exposure to the student to the world of work e the operations of a small or medium scale ications, entrepreneurship and management o and inspire the student to diligently engage 3 Compulsory lents to the basic concepts, mathematical finite element method (FEM) as related to id modelling using commercial software for 3 Compulsory e capability of basic manufacturing processes ct and sequence machinery, tooling and ole products. 3 Compulsory of common components used in mechanical f material, kinematics and kinetic aspects |

| | The module will provide necessary knowledge needed for thermodynamic analysis and |
|--|--|
| | the design of thermodynamic machinery and systems and skills required for their |
| | operation and maintenance. |
| ET 22063 | Fluid Mechanics3Compulsory |
| | The module aims to provide the necessary knowledge on principles of fluid mechanics |
| | and their applications in fluid power engineering including knowledge about |
| | construction, operation and performance of hydraulic and turbo machinery and ability |
| | to design and construct industrial hydraulic systems following relevant standards and to |
| | maintain fluid machinery and systems. |
| ET 22072 | Computational and Numerical2Compulsory |
| | Mathematics |
| | The aim of this module is to enable the student to use mathematical software as a |
| | convenient tool for solving a range of problems in engineering technology by the |
| | application of numerical methods of mathematics. |
| | Total credits 18 |
| | |
| Year III | |
| Semester I – | A student must earn a minimum of 17 credits |
| ET 31013 | Electrical Machines 3 Optional |
| | The module aims to provide the necessary knowledge and skill to maintain electrical |
| ET 31034 | equipment, machinery and systems in an industrial environment. |
| ET 31024 | Machine Design 4 Compulsory |
| | The aim is to provide the student with competencies required for converting a product |
| | requirement to a design specification for developing a prototype and testing it as an |
| | industrial design. |
| ET 21022 | Automotive Floatnonies 2 Compulsion |
| ET 31033 | Automotive Electronics 3 Compulsory This module terrent to provide personant knowledge and skills for troublesheeting and set of the |
| ET 31033 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vahicles utilizing appropriate equipment. It covers the technical |
| ET 31033 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vehicles utilising appropriate equipment. It covers the technical needs for today's motor vehicle repair industry including the diagnosis of complex |
| ET 31033 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vehicles utilising appropriate equipment. It covers the technical needs for today's motor vehicle repair industry, including the diagnosis of complex system faults. It includes Faults and Symptoms in Engine Management Systems: |
| ET 31033 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vehicles utilising appropriate equipment. It covers the technical needs for today's motor vehicle repair industry, including the diagnosis of complex system faults. It includes Faults and Symptoms in Engine Management Systems; Diagnosis of Faults in Electronic Ignition Petrol and Diesel Injection and Engine |
| ET 31033 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vehicles utilising appropriate equipment. It covers the technical needs for today's motor vehicle repair industry, including the diagnosis of complex system faults. It includes Faults and Symptoms in Engine Management Systems; Diagnosis of Faults in Electronic Ignition, Petrol and Diesel Injection and Engine Management Systems; Diagnosis of Faults in Vehicle Comfort Systems, Emission |
| ET 31033 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vehicles utilising appropriate equipment. It covers the technical needs for today's motor vehicle repair industry, including the diagnosis of complex system faults. It includes Faults and Symptoms in Engine Management Systems; Diagnosis of Faults in Electronic Ignition, Petrol and Diesel Injection and Engine Management Systems; Diagnosis of Faults in Vehicle Comfort Systems, Emission testing and regulations. |
| ET 31033 ET 31042 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vehicles utilising appropriate equipment. It covers the technical needs for today's motor vehicle repair industry, including the diagnosis of complex system faults. It includes Faults and Symptoms in Engine Management Systems; |
| ET 31033 ET 31042 | Automotive Electronics3CompulsoryThis module target to provide necessary knowledge and skills for troubleshooting and maintenance of modern vehicles utilising appropriate equipment. It covers the technical needs for today's motor vehicle repair industry, including the diagnosis of complex system faults. It includes Faults and Symptoms in Engine Management Systems; |
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| Semester II - | - A student must earn a minimum of 6 credits | | |
|-----------------|--|----------------|--|
| ET 32016 | Industrial training | 6 | Compulsory |
| | | | |
| | Total credits | 6 | |
| | | | |
| Year IV | | | |
| Semester I – | A student must earn a minimum of 10 credits | | |
| ET 41016 | Integrative Product Design and Research | 6 | Compulsory |
| | Project | | |
| | The module aim is to develop competencie | es for perf | orming design, fabrication, |
| | installation and testing of simple but industry | scale integra | ated prototypes/systems of a |
| | mechanical nature for commercialisation. | | ~ . |
| ET 41023 | Control systems | 3 | Compulsory |
| | The module will provide the competence require | ed to design | and develop control systems |
| | for industry requirements following standard p | ractices utili | sing commercially available |
| | components and to conduct maintenance of such | n control sys | tems. |
| DT 41033 | | 2 | |
| ET 41033 | Computer-integrated Manufacturing | 3 | Optional |
| | The module aim is to introduce fundamentals of | t computer 1 | ntegration in industry for the |
| | selection, integration, implementation and | use of c | omputer-aided design and |
| DT 41140 | manufacturing methods in industry. | | |
| E141143 | Building Services | 3 | Optional |
| | The module is to provide the competence req | uired to op | erate and maintain essential |
| | services for buildings that employ latest techno | ologies and | ensure efficient operation of |
| | such buildings. | | |
| ET41152 | Production Management | 2 | Optional |
| | The module aim is to provide the student with | the compete | ncies required for managing |
| | operations in a production system by enabling to | o manage th | e activities of system design, |
| | planning, operation and performance improvem | ent. | |
| ET41161 | Environment Management | 1 | Optional |
| | This module aims to create an awareness of \Box s | sources and | impacts of the physical and |
| | chemical pollution involved, make environment | tal assessme | nts and develop strategies to |
| | prevent & minimize the pollution and waste | in industry | y based on regulations and |
| | standards. | | |
| ET41172 | Modern Automobile Technology | 2 | Elective |
| | The module is provide an in depth understa | inding of c | urrent technology of motor |
| | vehicles and skills to trouble shoot and mainta | in them wh | ile providing an insight into |
| | the latest and future technology of motor vehicle | es | |
| ET41181 | Humanities Module 1 | 1 | Optional |
| | The module is to provide the competence real | uired to op | erate and maintain essential |
| | services for buildings that employ latest technologies | ologies and | ensure efficient operation of |
| | such buildings. | 5108105 und | one of the ofference of the ofference of |
| | Total credits | 10 | |
| | | | |
| Somester II | - A student must earn a minimum of 15 avadits | | |
| Semester II - | - A student must earn a minimum of 15 credits | | |
| ET 41016 | Integrative Product Design and Research | 6 | Compulsory |

| | Project (cond.) | | |
|---------|---|--|---|
| | The module aim is to develop competencies installation and testing of simple but industry sca mechanical nature for commercialisation. | for perfor le integrat | rming design, fabrication, ed prototypes/systems of a |
| ET42011 | Professional Practices | 1 | Optional |
| | The module aim is to provide the student with the managerial, ethical, legal, and professional obligat in a contemporary business environment while dea culturally diverse environments. | e competer ions neces aling with | ncies required for fulfilling sary to function effectively socially, economically and |
| ET42022 | Industrial Management | 2 | Optional |
| | The aim is to equip the student with a knowledge resource, marketing and technology in a business o | of the prin | nciples of managing human |
| ET42031 | Entrepreneurship Development | 2 | Optional |
| | The aim is to create entrepreneurial interest and them with skills for developing, evaluating and pre- | attitudes senting bu | in the student and provide siness plans. |
| ET42042 | Industrial Installations | 3 | Optional |
| | The module aim is to provide the competence requestion of the ability to design and improvements to existing systems in an industrial s | ired to op carryout etting. | erate and maintain services allowable modifications / |
| ET42053 | Industrial Automation and Robotics | 3 | Optional |
| | The module aim is to introduce the scope, techniq systems and robots in industry | ues of ana | lysis and use of automated |
| ET42062 | Project Management | 2 | Optional |
| | The aim is to provide necessary competencies for industrial project proposals and managing projects | planning. | , organising and evaluating natic and gainful manner. |
| ET42071 | Humanities Module 2 | 1 | Optional |
| | Total credits | 15 | |