

Department of Electronics and Telecommunication

Course Outcomes

MSBTE prescribed syllabus, as per the Scheme 'G'

Semester – I

Abbreviation	Subject	Code
ENG –	English	(17101)
	<ol style="list-style-type: none">1) Understand English - the language as a medium of expressing oneself and being global language, use it in all spheres of life – Personal, Professional and Social.2) Developing the vocabulary.3) Learn and apply rules of grammar.4) Comprehend the given unseen paragraph.	
EPH –	Basic Physics	(17102)
	<ol style="list-style-type: none">1) Understand the method of selection of material for intended purpose.2) Application of knowledge of heat conductors (good and bad conductors of heat) in various engineering concepts.3) Understand the effect of interference between the waves of light.4) Application of knowledge of wave motion and resonance in various engineering applications.5) Application of concept photoelectric effect for application like Photoelectric cell and Solar cell.	
ECH –	Basic Chemistry	(17103)
	<ol style="list-style-type: none">1) Understand the concept of valence electron and valency of elements.2) Application of knowledge of electrolysis in engineering applications.3) Understand the formation process/reactions of various molecules.4) Application of the properties of metals and alloys in engineering field.5) Understand the use of non-metallic material in engineering field.	
BMS –	Basic Mathematics	(17104)
	<ol style="list-style-type: none">1) Apply the Cramer's rule and Matrix method to solve simultaneous equations in three variables.2) Use concept of allied angle, compound angle, multiple and sub-multiple angles to solve engineering problems.3) Use factorization and de-factorization formulae to solve examples.4) Understand the relationship of two variables.	

EGG – Engineering Graphics (17001)

- 1) Draw different engineering curves and know their applications.
- 2) Draw orthographic projections of different objects.
- 3) Visualize three dimensional objects and draw Isometric Projections.
- 4) Draw simple geometrical figures using CAD package.

CMF – Computer Fundamentals (17002)

- 1) Use of Operating System.
- 2) Use MS-Word, MS-Excel, MS-Power Point, effectively for documentation.
- 3) Use browser for accessing the Internet
- 4) Handle Personal Computer System

WPI – Basic Workshop Practice (17005)

- 1) Read and interpret the drawing.
- 2) Draw sketch for given job.
- 3) Use specification tables.
- 4) Decide Sequence of procedure.
- 5) Recognize, identify and use of various tools used in soldering.
- 6) Use of soldering technique for efficient repair work.

Semester – II

Abbreviation Subject Code

CMS – Communication Skills (17201)

- 1) Utilize the skills necessary to be a competent communicator.
- 2) Select and apply the appropriate methods of communication in various situations.

APH – Applied Physics (17210)

- 1) Understand laws and principles of electrical circuits.
- 2) Classify solids on the basis of semiconductor band theory.
- 3) Understand principles of Laser and its applications in engineering fields.
- 4) Identify superconductor and its types.
- 5) Understands applications of nanoparticles in engineering field.

ACH – Applied Chemistry (17211)

- 1) Select proper type of cell based on the requirement in electronics and computer engineering.
- 2) Apply knowledge of extraction, properties of copper and aluminium in engineering applications.
- 3) Know various insulating or dielectric materials used in for electronic equipments and computers.
- 4) Generalize different factors which affect atmospheric as well as electrochemical corrosion.

- EMS – Engineering Mathematics (17216)**
- 1) Use complex numbers for representing different circuit component in complex form to determine performance of electrical circuit and machines.
 - 2) Apply rules and methods of differential calculus to solve problems.
 - 3) Apply various numerical methods to solve algebraic and simultaneous equations.

- DLS – Development of Life Skills (17010)**
- 1) Understand and appreciate importance of life skills.
 - 2) Use self-analysis and apply techniques to develop personality.
 - 3) Use different search techniques for gathering information and working effectively.
 - 4) Improve the presentation skills.

- EEX – Elements of Electronics (17215)**
- 1) Identify types of components and understand construction, working principle, specifications and applications.
 - 2) Realize the DC circuit applications by applying the fundamental electrical laws.
 - 3) Apply various electrical theorems for different circuit which are the foundations for electronics subject.

- EEW – Electronics workshop (17014)**
- 1) Read and interpret Circuit diagrams, Data sheets of components
 - 2) Improvement / Increases hands on skills by
 - i. Testing the circuit using software and bread board
 - ii. Drawing the circuit diagram and its PCB using software
 - iii. Troubleshooting of the electronic circuits.
 - 3) Analysis technique, testing and assembly of electronic circuit, build the skills to develop and test electronic circuits.

Semester – III

- | Abbreviation | Subject | Code |
|---------------------|---|----------------|
| AMS – | Applied Mathematics | (17301) |
| | <ol style="list-style-type: none">1. Apply derivatives to find slope, maxima, minima and radius of curvature.2. Apply integral calculus to solve different engineering problems.3. Apply the concept of integration for finding area.4. Apply differential equation for solving problems in different engineering fields.5. Apply the knowledge of probability to solve the examples related to the production process. | |

- EIM – Electronics and Measurements (17317)**
1. Understand the principle & operation of different measuring instruments.
 2. Select the instrument for the measurement of specific electrical parameter.
 3. Understand the procedure for fault finding in electronic systems.

- EEN – Electrical Engineering (17318)**
1. Understand single phase and three phase AC circuits.
 2. Realize concept of electromagnetic induction and apply it to static and rotating machines.
 3. Understand characteristics of rotating machines.
 4. Know the importance of safety and various safety methods in electrical engineering.
- EDC – Electronics and Devices (17319)**
1. Understand working principles of amplifiers, regulators and oscillators
 2. Compare and classify amplifiers, oscillator time base generator, and regulator
 3. Understand the use of these devices.
- PDT – Principle of Digital Techniques (17320)**
1. Understand basic digital circuits.
 2. Understand conversion of number systems.
 3. Implement combinational and sequential circuits.
 4. Understand logic families, data converters.
- PIC – Programming in C (17020)**
1. Learn programming concepts and methodology
 2. Learn standard, sequential, decision and iterative structures of programming language
 3. Write, debug, compile and execute the programs
 4. Write programs for hardware interfacing.
 5. Design graphics using standard geometrical shapes and graphic functions
 6. Handle text and binary files for real life applications.
- PPO – Professional Practices-I (17021)**
- To develop the following skills:
- Intellectual Skills:
1. Acquire information from different sources.
 2. Interpret the data acquired from different sources.
 3. Prepare reports for given topic.
- Motor Skills:
1. Present given topic in a seminar.
 2. Interact with peers to share thoughts.
 3. Prepare a report on industrial visit, expert lecture.

Semester – IV

Abbreviation	Subject	Code
EST –	Environmental Studies	(17401)
	<ol style="list-style-type: none">1. Understand importance of environment2. Know key issues about environment3. Understands the reasons for environment degradation4. Know aspects about improvement methods5. Know initiatives taken by the world bodies to restrict and reduce degradation.	
IME –	Industrial Measurements	(17434)
	<ol style="list-style-type: none">1. Understand the nature and working of instrumentation system used in industrial & general applications.2. Classify the physical parameters with their proper units3. Understand the concepts of different types of transducers.	
ACO –	Analog Communication	(17440)
	<ol style="list-style-type: none">1. Know different electronic communication systems.2. Understand concept of modulation and demodulation of AM / FM.3. Understand the operation of AM/ FM transmitter and receiver.4. Understand the concept of radio wave propagation.	
PEL –	Power Electronics	(17444)
	<ol style="list-style-type: none">1. Understand construction and operating principle of various power electronic devices.2. Study construction and operation of controlled rectifiers, choppers and inverter and industrial control circuits.	
LIC –	Linear Integrated Circuits	(17445)
	<ol style="list-style-type: none">1. Understand working principle of Op-Amp and IC5552. Develop electronics circuits using timer IC555 and Op-Amp3. Analyze the response of frequency selective circuits such as PLL with respect to the incoming signal.	
VBA –	Visual Basic	(17043)
	<ol style="list-style-type: none">1. Learn visual programming development environment, concepts and methodology.2. Use essential components (visual tools) of Visual software's3. Develop the skill of visual basic programming to build custom standalone applications.4. Develop applications with Multiple documents interface (MDI) using common dialog, menus and graphics.5. Use ADO for database connectivity with different databases.6. Create simple reports using data report, Seagate crystal reports and integrating it with visual basic.	

7. Develop applications using class modules.

PPT – Professional practices-II (17044)

Intellectual skills:

1. Analyze information from different sources.
2. Prepare reports.

Motor skills:

1. Present given topic in a seminar.
2. Interact with peers to share thoughts.
3. Prepare a report on industrial visit, expert lecture.

Semester – V

Abbreviation Subject Code
CHN – Computer Hardware and Networking (17533)

1. Understand principle, construction, working of computer peripherals.
2. Select cost effective, good quality reliable peripherals and equipment
3. Identify the problem as hardware or software related.
4. Identify and repair the simple faults in computer systems.
5. Plan, analyze, design, install, configure, test, implement and maintain networking systems

MIC – Microcontroller (17534)

1. Understand concepts of microcomputer, microprocessor and microcontroller.
2. Interface peripherals to microcontroller.
3. Develop logic for assembly language programming.
4. Understand the principles of working of present day microcontroller systems in various fields.

DCO – Digital Communication (17535)

1. Understand principles and Concept of various digital modulation techniques.
2. Understand various coding, error detection and error correction methods.
3. Understand various multiplexing technique and multiple Access Scheme.
4. Understand spread spectrum modulation and their different methods.

CSP – Control system and PLC (17536)

1. Understand classifications of control system.
2. Understand Steady state, time response, and frequency response analysis.
3. Analyze the Stability of control system using RH criteria.
4. Understand the fundamentals and diff. Hardware parts of PLC.
5. Draw ladder diagrams to program PLC.

AVE – Audio Video Engineering (17537)

1. Understand operation of audio amplifiers.
2. Analyze quality of reception of various sound systems and graphic equalizer
3. Understand CD player mechanism.
4. Understand the principle of operation of various advanced TV systems.

BSC – Behavioural Science (17075)

1. Develop him/her as Team leader.
2. Use self-motivation and motivate others.
3. Build a team and develop team spirit among the team members.
4. Improve the interpersonal relationship skills.
5. Learn Problem solving and decision making skills.
6. Discuss a particular topic in a group and face the interview

EDP – EDP & Project (17066)

1. Appreciate the concept of Entrepreneurship
2. Identify entrepreneurship opportunity.
3. Develop entrepreneurial values and attitude.
4. Collect and use the information to prepare project report for business venture.
5. Develop awareness about enterprise management.

PPT – Professional Practices - III (17067)

Intellectual Skills:

1. Analyze the information received from different sources.
2. Prepare report for given topic.

Motor Skills:

1. Present given topic in a seminar.
2. Interact with peers to share thoughts.
3. Prepare a report on industrial visit, expert lecture.

Semester – VI

Abbreviation	Subject	Code
MAN –	Management	(17601)

1. Get familiarized with environment related to business processes.
2. Know the management aspects of the organisations.
3. Understand Role & Responsibilities of a Diploma engineer.
4. Understand importance of quality improvement techniques.
5. Appreciate need and importance of safety in industries.
6. Understand process of Industrial finance and its management.
7. Know the latest trends in industrial management.

ACS – Advanced communication system (17656)

1. Understand concepts and applications of microwave and optical spectrum.
2. Understand construction and working of microwave components and devices.
3. Understand basic principle & operation of radar systems.
4. Understand the construction, working and uses of optical communication system components
5. Know the concept, working and application of satellite communication system.

MCO – Mobile Communication (17657)

1. Describe cellular concept such as frequency reuse, hand off available in various mobile standards.
2. Understand GSM system, CDMA (IS-95), SS7 architecture and call processing in this system.
3. Understand 3 G Mobile Communication systems.

ESY – Embedded systems (17658)

1. Differentiate and decide the architectures of processors for application.
2. Define communication media.
3. Design and development of small Embedded Systems.
4. Development of software.
5. Understand architecture of RTOS.

Elective:

VLS – Very Large Scale Integration (17659)

1. Develop the state diagram, state table and built Moore and Mealy models
2. Implement logical equations using CMOS technology
3. Develop program to implement combinational and sequential logic circuit using VHDL and synthesize and optimum coding style.
4. Act as industry logic designers for imparting standard ICs, ASIC libraries.

MEC – Mechatronics (17660)

1. Understand the elements of Mechatronics systems.
2. Understand the significance of sensors & transducers in Mechatronics.
3. Understand the different types of controllers used in Mechatronics.
4. Understand the fundamentals of Robotics & micro electro mechanical systems.
5. Develop the skills to integrate the Mechatronics system with the help of case studies.

SSO – Simulation Software (17807)

1. Learn the use of various library functions available in the software.
2. Construct given circuit diagram using these library functions.
3. Study the working of the circuit for various inputs.

PRO – Industrial Project (17808)

1. Work in Groups, Plan the work, and Coordinate the work.
2. Develop leadership qualities.
3. Analyse the different types of Case studies.
4. Develop Innovative ideas.
5. Develop basic technical Skills by hands on experience.
6. Write project report.
7. Develop skills to use latest technology in Electronics field.