



G.S. Mandal's

# MAHARASHTRA INSTITUTE OF TECHNOLOGY AURANGABAD

(An Autonomous Institute)

Accredited with "Grade A" by NAAC

(Formerly Known as College of Applied Science)

Approved by All India Council for Technical Education (AICTE), New Delhi

Permanently Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

DTE Code -2113

Ref: MIT/B. Tech./Acad/AC/2022/17

Date: 20-01-2022

## Notice

### **Mandatory Non-Credit Course (Audit Course)**

All the students of Second Year B. Tech (All Branches) are hereby informed that the list of Mandatory Non-Credit Course (Audit Course) offered for Second Year B. Tech Semester IV of Academic Year 2021-22 Part-II by various departments is as follows:

| Sr. No. | Offered by Department             | Name of course       | Course code |
|---------|-----------------------------------|----------------------|-------------|
| 1.      | First Year                        | Employability Skills | BSH803      |
| 2.      | First Year                        | Emotional Quotient   | BSH804      |
| 3.      | Mechanical Engineering Department | Energy Audit         | BSH805      |
| 4.      | Computer Science and Engineering  | Cyber Security       | BSH806      |

The syllabus of the course is attached herewith for your ready reference. The students are hereby instructed to meticulously check the syllabus before selecting the Mandatory Non-Credit Course (Audit Course).

Students must do online registration on provided link or by scanning the QR Code as given below. The link for registration will be available from 21-01-2022 (7.00 pm) to 22-01-2022 (7.00 pm).

MIT<sup>™</sup>  
Quest for Excellence

<https://forms.gle/D1dUCnR7mKv3WmF69>





G.S. Mandal's

# MAHARASHTRA INSTITUTE OF TECHNOLOGY AURANGABAD

(An Autonomous Institute)

**Accredited with "Grade A" by NAAC**

(Formerly Known as College of Applied Science)

Approved by All India Council for Technical Education (AICTE), New Delhi

Permanently Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

DTE Code -2113

## Note:

1. Allocation of Mandatory Non-Credit Course (Audit Course) shall be purely based on first come first served basis.
2. No changes in the preferences shall be entertained once the students have opted for their Mandatory Non-Credit Course (Audit Course)
3. Student shall be allocated the Mandatory Non-Credit Course (Audit Course) as per the choice and preference given and the available number of seats for the respective Mandatory Non-Credit Course (Audit Course) .
4. If the student does not complete the registration process, the courses shall be allocated as per the availability and no student will be entertained for any queries related to the same.

  
Dean Academics and Quality Assurance

## Copy to:

- 1) Director for information
- 2) Registrar for information and n.a.
- 3) Dean (Examinations and Evaluations) for information and n.a.
- 4) All other Deans for information
- 5) HOD's for information and n.a.
- 6) SY Class Teachers for information and n.a. through HOD

|  |  |
|--|--|
| <p align="center"><b>Dr. Babasaheb Ambedkar Marathwada University, Aurangabad</b><br/> (Faculty of Science &amp; Technology)<br/> Syllabus of T. Y. B. Tech. Semester-IV</p> |  |
| Course Code:<br>Course: Employability Skills<br><b>Teaching Scheme:</b><br>Theory: 2 Hrs/week  | Credits: 0-0-0<br>Mid Semester Examination-I: __ Marks<br>Mid Semester Examination-II: __ Marks<br>Teacher Assessment: __ Marks<br>Term Work: __ Marks<br>End Semester Examination: __ Marks<br>End Semester Examination (Duration): Hrs   |
| <b>Prerequisite</b>  | The students are aware about Employability Skills.   |
| <b>Objectives</b>  | <ol style="list-style-type: none"> <li>1. Develop good communication skills – both oral as well as written.</li> <li>2. Encourage creative and critical thinking among students.</li> <li>3. Nurture collaborative behaviour to work efficiently in groups.</li> </ol>   |
| <b>Unit-I</b>  | <b>Understanding Self and Soft Skills</b><br>Introduction to introspective methods SWOC Analysis, Understanding the importance of soft skills, soft skills vs hard skills, interdisciplinary relevance, emotional quotient and emotional intelligence, personal and career goal setting, aligning aspirations with individual's skill sets, understanding self-esteem and critically evaluating oneself.<br><p align="right">( 4 Hrs)</p>  |
| <b>Unit-II</b>   | <b>Communication Skills</b><br>Essentiality of good communication skills, Importance of feedback, Different types of communication, Barriers in communication and how to overcome these barriers, Significance of non-verbal messages as augmentation to verbal communication, Group Discussion, Listening Vs Hearing, Reading to comprehend, Learning to skim and scan to extract relevant information, Effective digital communication.<br><p align="right">( 4 Hrs)</p>   |
| <b>Unit-III</b>  | <b>Language &amp; Writing Skills</b><br>Fundamentals of English Grammar, improve Lexical resource, essential steps to improve spoken and written English, Business vocabulary, Writing - Email, Resume, Formal letter, Official Communication, Essay, Presentation – Planning, Organizing, Preparing and Delivering Professional presentation, Resume writing: Resume content, identification of carrier objective, characteristics of good resume, different formats of resume-chronological, Functional , Hybrid Effective letter and cover letter writing, Application writing, Report writing.<br><p align="right">(4 Hrs)</p> |
| <b>Unit-IV</b>   | <b>Leadership Skills and Group Dynamics</b><br>Understanding Corporate Culture and Leadership skills, difference between a leader and  |

|                   |  |  |  |                            |                       |
|-------------------|--|--|--|----------------------------|-----------------------|
|                   | a manager, Importance of resilience in a professional surrounding, Developing empathy and emotional intelligence, being assertive and confident, 4-Ds of decision making, Creative and solution-centric thinking, Resolving conflicts, Working cohesively as a team to achieve success, 5 Qualities of an Effective team - Positivity, respect for others, trust, goal-focused, supportiveness.<br>( 4 Hrs)  |  |  |                            |                       |
| <b>Unit-V</b>     | <b>Professionalism &amp; Ethics</b><br>Understanding ethics and morals, Importance of Professional Ethics, hindrances due to absence of Work ethics, Professional etiquette – Introductions, with colleagues, attire, events, dinning, telephone, travelling, netiquette, social media, writing.<br>Stress as integral part of life, Identifying signs and sources of stress, Steps to cope with stress – open communication, positive thinking, Belief in oneself, ability to handle failure, Retrospective thinking for future learning, Organizing skills to enhance time management, Focusing on goals, smart work vs hard work, Prioritizing activities, Perils of procrastination, Daily evaluation of “to-do” list.<br>( 4 Hrs) |  |  |                            |                       |
| <b>Unit-VI</b>    | <b>Quantitative Ability &amp; Logical Reasoning</b><br>Numbers, HCF and LCM, Time and distance, Time and work, Clock, Simple interest and compound interest, Boats and steams, Number series, Ratio and proportion, probability, profit and loss, odd man out series, permutations, height and distance, square and cube root matching, selection, verbal reasoning, logical games, logical deductions, logical problems, cause and effect.<br>( 4 Hrs)  |  |  |                            |                       |
| <b>References</b> | <b>Sr. No.</b>   | <b>Title</b>   | <b>Author</b>                                | <b>Publication</b>         | <b>Edition</b>        |
|                   | 1.   | Quantitative Aptitude for Competitive Examinations         | R. S. Agarwal                                | S. Chand Publications      | Revised Edition-2020  |
|                   | 2.   | Soft Skills-An integrated approach to maximize personality | R.Gajendra Singh Chauhan and Sangeeta Sharma | Wiley Publication          | First Edition         |
|                   | 3.   | An Approach to Communication Skills                        | Indrajit Bhattacharya                        | Dhanpat Rai                | Edition – 2007 – 2008 |
|                   | 4.   | English for Business Communication                         | Simon Sweeney                                | Cambridge University Press | Second Edition        |

|  |    |                                    |                               |                  |                          |
|--|----|------------------------------------|-------------------------------|------------------|--------------------------|
|  |    |                                    |                               |                  |                          |
|  | 5. | Creative English for Communication | Krishnaswami, N. and Sriraman | Macmillan        | Edition-2000             |
|  | 6. | Introduction to Psychology         | Atkinson and Hilgard's        | Cengage Learning | 16 <sup>th</sup> Edition |

|  |   |
|--|---|
| <p align="center"><b>Dr. Babasaheb Ambedkar Marathwada University, Aurangabad</b><br/> (Faculty of Science &amp; Technology)<br/> Syllabus of T. Y. B. Tech. Semester-IV</p> |   |
| Course Code:<br>Course: Emotional Intelligence<br><b>Teaching Scheme:</b><br>Theory: 2 Hrs/week<br>Tutorial: Hr/week   | Credits: 0-0-0<br>Mid Semester Examination-I: __ Marks<br>Mid Semester Examination-II: __ Marks<br>Teacher Assessment: __ Marks<br>Term Work: __ Marks<br>End Semester Examination: __ Marks<br>End Semester Examination (Duration): Hrs  |
| <b>Prerequisite</b>  | The students know their emotions and its impact on personal life.   |
| <b>Objectives</b>  | 1. Describe the definition, history, and the measurement of Emotional Intelligence.<br>2. Evaluate the impact of Emotional Intelligence on the business environment.<br>3. Apply the six Emotional Intelligence skills to increase self-awareness and self-management of personal emotions.<br>4. Build more effective relationships with people at work and at home.<br>5. Apply Emotional Intelligence in a variety of business situations. |
| <b>Unit-I</b>  | <b>Introduction to Emotional Intelligence</b> <ul style="list-style-type: none"> <li>Emotional Intelligence and various EI models</li> <li>The EQ competencies of self-awareness, self-regulation, motivation, empathy, and interpersonal skills</li> <li>Understand EQ and its importance in life and the workplace</li> </ul> ( 4 Hrs)  |
| <b>Unit-II</b>   | <b>Know your emotions</b> <ul style="list-style-type: none"> <li>What are emotions?</li> <li>The different levels of emotional awareness</li> <li>Increase your emotional knowledge of yourself</li> <li>Recognize 'negative' and 'positive' emotions</li> </ul> ( 4 Hrs)   |
| <b>Unit-III</b>  | <b>Manage your emotions</b> <ul style="list-style-type: none"> <li>The relationship between emotions, thought and behaviour</li> <li>Discover the importance of values</li> <li>The impact of not managing and processing 'negative' emotions</li> <li>Techniques to manage your emotions in challenging situations</li> </ul> (4 Hrs)  |
| <b>Unit-IV</b>   | <b>Recognize emotions in others</b> <ul style="list-style-type: none"> <li>The universality of emotional expression</li> <li>Learn tools to enhance your ability to recognise and appropriately respond to others' emotions</li> </ul>  |

|                   |   |  |                                   |                    |                |
|-------------------|---|--|-----------------------------------|--------------------|----------------|
|                   | <ul style="list-style-type: none"> <li>Perceiving emotions accurately in others to build empathy</li> </ul> ( 4 Hrs)  |  |                                   |                    |                |
| <b>Unit-V</b>     | <b>Relate to others</b> <ul style="list-style-type: none"> <li>Applying EI in the workplace</li> <li>The role of empathy and trust in relationships</li> <li>Increase your ability to create effective working relationships with others (peers, subordinates, managers, clients)</li> <li>Find out how to deal with conflict</li> <li>Tools to lead, motivate others and create a high performing team</li> </ul> ( 4 Hrs) |  |                                   |                    |                |
| <b>Unit-VI</b>    | <b>Case Study</b> <ul style="list-style-type: none"> <li>Applying emotional intelligence in the workplace</li> <li>Performance in business environment</li> </ul> ( 4 Hrs)  |  |                                   |                    |                |
| <b>References</b> | <b>Sr. No.</b>  | <b>Title</b>   | <b>Author</b>                     | <b>Publication</b> | <b>Edition</b> |
|                   | 7.  | Emotional Intelligence: Why it can matter more than IQ               | Daniel Goleman                    | Bantam Books       | Tenth Edition  |
|                   | 8.  | Emotional Intelligence 2.0   | Travis Bradberry and Jean Greaves | Talent Smart       | First Edition  |
|                   | 9.  | The EQ Interview: Finding Employees with High Emotional Intelligence | Adele B. Lynn                     | AMCOM Books        | First Edition  |
|                   | 10.   | Emotional Intelligence   | Steven J. Stein                   | Wiley              | First Edition  |
|                   | 11.   | Working with Emotional Intelligence                                  | Daniel Golman                     | Bloomsbury         | First Edition  |

|   |  |
|---|--|
| <p align="center"><b>Dr. Babasaheb Ambedkar Marathwada University, Aurangabad</b><br/>(Faculty of Science &amp; Technology)<br/>Syllabus of S. Y. B. Tech. (Mechanical Engineering) Semester-IV</p> |  |
| <p>Course Code: BSH805<br/>Course: Mandatory Non Credit Audit Course (Energy Audit)<br/><b>Teaching Scheme:</b><br/>Theory: 02 Hrs/week<br/>Practical: Nil Hr/week</p>                              | <p>Credits: 0-0-0<br/>Mid Semester Examination-I: Nil Marks<br/>Mid Semester Examination-II: Nil Marks<br/>Teacher Assessment: Nil Marks<br/>Term Work: Nil Marks<br/>End Semester Examination: Nil Marks<br/>End Semester Examination (Duration): Nil Hrs</p>   |
| <b>Prerequisite</b>   | Should have knowledge of Basic concepts of physics and thermodynamics, Electrical appliances, various types of energy utilization.   |
| <b>Objectives</b>   | <ol style="list-style-type: none"> <li>1. Identify the demand supply gap of energy in Indian scenario.</li> <li>2. Carry out energy audit of an industry/Organization.</li> <li>3. Draw the energy flow diagram of an industry and identify the energy wasted or a waste stream.</li> </ol>  |
| <b>Unit-I</b>   | <p><b>Elements of energy conservation:</b> General energy problem, Sector wise Energy consumption, demand supply gap, Scope for energy conservation and its benefits<br/>Energy conservation Principle – Maximum energy efficiency, Maximum cost effectiveness, Mandatory provisions of Energy Conservation act 2001, Features of Energy Conservation act-Standards and labelling, designated consumers, Energy Conservation Building Codes (ECBC).</p> <p align="right"><b>(06Hrs)</b></p>  |
| <b>Unit-II</b>  | <p><b>Importance of Energy Management:</b></p> <p>Energy management concept and objectives, Initializing Planning, Leading, Controlling, Promoting, Monitoring and Reporting. Energy management programmes.</p> <p align="right"><b>(06Hrs)</b></p>  |
| <b>Unit-III</b>   | <p><b>Energy Conservation approach in Industries:</b></p> <p>Energy saving opportunities in electric motors, Benefits of Power factor improvement and its techniques-Shunt capacitor, Synchronous Condenser etc., Effects of harmonics on – Motors, and remedies leading to energy conservation., Energy conservation by VSD, Methods and techniques of energy conservation in ventilation and air conditioners, compressors pumps, fans and blowers, Area Sealing, Insulating the Heating / cooling fluid pipes , automatic door closing- Air curtain, Thermostat / Control, Energy conservation in electric furnaces, ovens and boilers.</p> |



|                   |  |  |                             |                             |                      |
|-------------------|--|--|-----------------------------|-----------------------------|----------------------|
|                   | <b>(06Hrs)</b>   |  |                             |                             |                      |
| <b>Unit-IV</b>    | <b>Energy Conservation in Power generation, Transmission and Distribution:</b><br>Performance improvement of existing power plant: co-generation, small hydro, DG Set, Demand side management, Load response programmes, Types of tariff and restructuring of electric tariff, Technical measures to optimize T and D losses.<br><b>(06Hrs)</b>  |  |                             |                             |                      |
| <b>Unit-V</b>     | <b>Lighting and Lighting System:</b><br>Lightings Levels, Fixtures Lighting techniques – Natural, CFL, LED lighting sources and fittings, Day lighting, Timers, Energy Efficient Windows.<br><b>(06 Hrs)</b>   |  |                             |                             |                      |
| <b>Unit-VI</b>    | <b>Energy Audit:</b><br>Energy audit and its benefits, Energy flow diagram, Preliminary, Detailed energy audit., Methodology of preliminary energy audit and Detailed energy audit – Phase I, Pre audit, Phase II- Audit and Phase III- Post audit, Energy audit report., Electrical Measuring Instruments - Power Analyser, Combustion analyzer, fuel efficiency monitor, thermometer-contact, infrared, piton tube and manometer, water flow meter, leak detector, tachometer and lux meter, IE rules and regulations for energy audit, (Numerical).<br><b>(06Hrs)</b> |  |                             |                             |                      |
| <b>References</b> | <b>Sr. No.</b>   | <b>Title</b>   | <b>Author</b>               | <b>Publication</b>          | <b>Edition</b>       |
|                   | 1.   | Electric Energy Generation, Utilization and Conservation | Sivaganaraju, S             | Pearson Education           | First edition (2011) |
|                   | 2.   | Principles of Power Systems                              | V. K. Mehta                 | S Chand & Co Ltd            | 2005                 |
|                   | 3.   | Energy Management Handbook                               | Wayne C. Turner             | John Wiley & Sons Inc       | 1982                 |
|                   | 4.   | Energy management  | Paul O Callaghan            | Tata McGraw Hill            | Third Edition, 2003. |
|                   | 5.   | Fundamentals of electrical system                        | Bureau of Energy Efficiency | Bureau of Energy Efficiency |                      |

| <b>Dr. Babasaheb Ambedkar Marathwada University, Aurangabad</b><br><b>(Faculty of Science &amp; Technology)</b><br><b>Syllabus of S. Y. B. Tech. (Computer Science and Engineering)</b> |  |
|---|--|
| Course Code: CSE<br>Course: Mandatory Non Credit Audit Course<br>Cyber Crime & Law<br><b>Teaching Scheme:</b><br>Theory: 2 Hrs/week   | Credits: 0-0-0<br>Mid Semester Examination-I: 0 Marks<br>Mid Semester Examination-II: 0 Marks<br>Teacher Assessment: 0 Marks<br>End Semester Examination: 0 Marks<br>End Semester Examination (Duration):0 Hrs   |
| <b>Prerequisite</b>   |  |
| <b>Objectives</b>   | <ol style="list-style-type: none"> <li>1. To introduce the cyber world and cyber law in general</li> <li>2. To enhance the understanding of problems arising out of online transactions and provoke them to find solutions</li> <li>3. To examine the effects of cybercrime through the experiences of victims and law enforcement</li> <li>4. To Know the technologies that stand behind certain cybercrimes,</li> <li>5. To identify and analyse statutory, regulatory, constitutional, and organizational laws that</li> <li>6. affect the information technology professional.</li> <li>7. To distinguish enforceable contracts from non - enforceable contracts.</li> </ol> |
| <b>Unit-I</b>   | <b>Introduction: (04 hrs)</b><br>Overview of Computer and Web Technology: Concept of Internet , Internet Governance, E-Contract, Encryption, Data Security. Need of Cyber Law, and Cyber Jurisprudence   |
| <b>Unit-II</b>  | <b>Cyber Crime(04 hrs)</b><br>Cyber Crime Vs Regular Crime, Cyber Crime against individuals, Institutions and State. Types of cybercrime: Hacking, Digital Forgery, Cyber Stalking/Harassment, Identity Theft & Fraud, Cyber Defamation Virus, Cyber Terrorism, Salami Attack, Denial of Service, Virus, Malware. Case Studies.  |
| <b>Unit-III</b>   | <b>Legal Framework(04 hrs)</b><br>Right to Privacy and Data Protection on Internet: Concept, Threat, Ingredients, Breach.<br>Right of interception under IT Act and different offences under IT Act 2000.  |
| <b>Unit-IV</b>  | <b>Jurisdictional Aspects in Cyber Law: (04 hrs)</b><br>Issues of jurisdiction in cyberspace, Types of jurisdiction, The Test evolved, Minimum Contacts Theory, Sliding Scale Theory, Jurisdiction under IT Act, 2000, Case Studies.   |
| <b>Unit-V</b>   | <b>Digital signature and Electronic Signature and Data Protection(04 hrs)</b><br>CIA Triangle, Concept of public key and private key, Certification authorities and their role, Creation and authentication of digital signature, Concept of electronic  |

|                   |  |   |                         |  |                |
|-------------------|--|---|-------------------------|--|----------------|
|                   | signature certificates, Electronic Governance  |   |                         |  |                |
| <b>Unit-VI</b>    | <b>Intellectual Property Issues in Cyber Space (04 hrs)</b><br>Copyright Law, Patent Law, Trademarks & Domain Names Related issues, Dispute Resolution in Cyberspace |   |                         |  |                |
| <b>References</b> | <b>Sr. No.</b>   | <b>Title</b>  | <b>Author</b>           | <b>Publication</b>                     | <b>Edition</b> |
|                   | 1.   | Computers, Internet and New Technology Laws<br>Lexis Nexis Butterworths Wadhwa Nagpur | Karnika Seth            | Lexis Nexis Butterworths Wadhwa Nagpur |                |
|                   | 2.   | Computer Law  | Chris Reed & John Angel | OUP, New York, (2007)                  |                |
|                   | 3.   | Cyber Crime An Introduction   | Prasad R.S.             |  |                |
|                   | 4.   | Cyber Laws  | Ed. Kumar Krishna       |  |                |