| Course Code | 17M17CS121 | **Semester** Odd **(specify Odd/Even)** | **Semester** 10<sup>th</sup> Session 2023 -2024 **Month** from July to Dec |
|---|---|---|---|
| **Course Name** | Project Based Learning-II | | |
| **Credits** | 4 | **Contact Hours** | 0-0-8 |
| **Faculty (Names)** | **Coordinator(s)** | Dr. Amit Mishra | |
| | **Teacher(s) (Alphabetically)** | Dr. Archana Purwar, Dr. Indu Chawla, Dr Amit Mishra | |

| COURSE OUTCOMES<br>At the completion of the course, Students will be able to | | COGNITIVE LEVELS |
|---|---|---|
| **C210.1** | Identify live problems that would be solved through automated software development process. | Apply Level (C3) |
| **C210.2** | Confront the issues related to development of project which includes team work, test driven design, data collections, implementations etc. | Apply Level (C3) |
| **C210.3** | Develop oral communication skill and prepare a technical report | Apply Level (C3) |
| **C210.4** | Critically review the projects and can skilfully map each stage in software development cycle. | Apply Level (C3) |

## CO-PO Mapping:

| COs | PO1 | PO2 | PO3 | PSO1 | PSO2 |
|---|---|---|---|---|---|
| **C210.1** | 3 | 1 | 3 | 2 | 2 |
| **C210.2** | 3 | 1 | 2 | 3 | 2 |
| **C210.3** | 2 | 3 | 2` | 0 | 2 |
| **C210.4** | 2 | 1 | 3 | 2 | 2 |
| **Avg.** | 2 | 2 | 2 | 2 | 2 |

| Course Code | 17M17CS212 | Semester Odd 2023 (specify Odd/Even) | Semester 3rd Session 2023 -2024 Month from July, 2023 to Dec., 2023 |
|---|---|---|---|
| **Course Name** | Seminar and Term Paper | | |
| **Credits** | 4 | **Contact Hours** | |

| Faculty (Names) | Coordinator(s) | Dr. Kavita Pandey |
|---|---|---|
| | Teacher(s) (Alphabetically) | Dr. Kavita Pandey |

| COURSE OUTCOMES | | COGNITIVE LEVELS |
|---|---|---|
| C212.1 | Identify the relevant research problem and its associated literature in the field of computer science. | Understand (level 2) |
| C212.2 | Examine the research gaps by analyzing the research articles. | Analyze (level 4) |
| C212.3 | Appraise their communication and presentation skills by delivering the research findings through a seminar presentation. | Evaluate (level 5) |
| C212.4 | Create a comprehensive report by compiling the research findings, ensuring both accuracy and clarity in the presented information. | Create (level 6) |

| Module No. | Title of the Module | Topics in the Module | No. of Lectures for the module |
|---|---|---|---|
| 1. | … | … | … |
| 2. | … | … | … |
| 3. | … | … | … |
| 4. | … | … | … |
| 5. | … | … | … |
| 6. | … | … | … |
| 7. | … | … | … |
| ... | … | … | … |
| *n.* | … | … | … |
| | | | … |

**Evaluation Criteria**

| Components | Maximum Marks |
|---|---|
| Day to day work prior to Midterm | 20 |
| Mid term Seminar and Report | 20 |
| Day to day work after Midterm | 20 |
| End term Seminar | 20 |
| Term Paper | 20 |
| **Total** | **100** |

| | | |
|---|---|---|

| Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. ( Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format) | |
|---|---|
| **1.** | … |
| **2.** | … |
| **3.** | … |
| **4.** | … |
| **...** | … |
| ***m*.** | … |

## CO-PO-PSO Mapping:      new CSE

| COs | PO1 | PO2 | PO3 | PSO1 | PSO2 |
|---|---|---|---|---|---|
| **C212.1** | Identify the relevant research problem and its associated literature in the field of computer science. | | | | |
| **Mapping and Justification** | **3**<br>**Identify the problem and will carry out the research independently** | **1**<br>**Summarize the papers** | | | **1**<br>**Take care of ethical principles while critiquing the associated literature** |
| **C212.2** | Examine the research gaps by analyzing the research articles. | | | | |
| **Mapping and Justification** | **3**<br>**Do the investigation independently** | **2**<br>**Write the integrated summary** | **1**<br>**Knowledge gained by reading the articles** | **1**<br>**Assimilate the probable research gaps if found in literature survey** | **2**<br>**Take care of ethical principles while finding the research gaps** |
| **C212.3** | Appraise their communication and presentation skills by delivering the research findings through a seminar presentation. | | | | |
| **Mapping and Justification** | | **3**<br>**Present the seminar** | **2**<br>**Demonstrate their study in the form of seminar** | | **2**<br>**Present their findings by considering the ethical principles in a professional manner** |
| **C212.4** | Create a comprehensive report by compiling the research findings, ensuring both accuracy and clarity in the presented information. | | | | |
| **Mapping and Justification** | **2**<br>**Present their investigations independently** | **3**<br>**Write and present the report** | **2**<br>**Demonstrate their study in form of a report** | | **3**<br>**Develop the report having minimum plagiarism considering ethical principles** |
| **Avg.** | **3** | **2** | **2** | **1** | **2** |

## CO-PO-PSO Mapping:      new DD same as CSE

| COs | PO1 | PO2 | PO3 | PSO1 | PSO2 |
|---|---|---|---|---|---|
| C212.1 | Identify the relevant research problem and its associated literature in the field of computer science. | | | | |
| Mapping and Justification | 3 Identify the problem and will carry out the research independently | 1 Summarize the papers | | | 1 Take care of ethical principles while critiquing the associated literature |
| C212.2 | Examine the research gaps by analyzing the research articles. | | | | |
| Mapping and Justification | 3 Do the investigation independently | 2 Write the integrated summary | 1 Knowledge gained by reading the articles | 1 Assimilate the probable research gaps if found in literature survey | 2 Take care of ethical principles while finding the research gaps |
| C212.3 | Appraise their communication and presentation skills by delivering the research findings through a seminar presentation. | | | | |
| Mapping and Justification | | 3 Present the seminar | 2 Demonstrate their study in the form of seminar | | 2 Present their findings by considering the ethical principles in a professional manner |
| C212.4 | Create a comprehensive report by compiling the research findings, ensuring both accuracy and clarity in the presented information. | | | | |
| Mapping and Justification | 2 Present their investigations independently | 3 Write and present the report | 2 Demonstrate their study in form of a report | | 3 Develop the report having minimum plagiarism considering ethical principles |
| Avg. | 3 | 2 | 2 | 1 | 2 |

## CO-PO-PSO Mapping: new DA

| COs | PO1 | PO2 | PO3 | PSO1 | PSO2 |
|---|---|---|---|---|---|
| C212.1 | Identify the relevant research problem and its associated literature in the field of computer science. | | | | |
| Mapping and Justification | 3 Identify the problem and will carry out the research independently | 1 Summarize the papers | | 2 Choose the problem according to recent developments | 1 Take care of ethical principles while critiquing the associated literature |
| C212.2 | Examine the research gaps by analyzing the research articles. | | | | |
| Mapping and Justification | 3 Do the investigation independently | 2 Write the integrated summary | 1 Knowledge gained by reading the articles | 2 Find the gaps in existing solutions by doing research analysis | 2 Take care of ethical principles while finding the research gaps |
| C212.3 | Appraise their communication and presentation skills by delivering the research findings through a | | | | |

| | | | seminar presentation. | | |
|---|---|---|---|---|---|
| Mapping and Justification | | 3 **Present the seminar** | 2 **Demonstrate their study in the form of seminar** | | 2 **Present their findings by considering the ethical principles in a professional manner** |
| **C212.4** | Create a comprehensive report by compiling the research findings, ensuring both accuracy and clarity in the presented information. | | | | |
| Mapping and Justification | 2 **Present their investigations independently** | 3 **Write and present the report** | 2 **Demonstrate their study in form of a report** | | 3 **Develop the report having minimum plagiarism considering ethical principles** |
| Avg. | 3 | 2 | 2 | 2 | 2 |

## CO-PO-PSO Mapping:　　　　　　new AI-ML

| COs | PO1 | PO2 | PO3 | PSO1 | PSO2 |
|---|---|---|---|---|---|
| **C212.1** | Identify the relevant research problem and its associated literature in the field of computer science. | | | | |
| Mapping and Justification | 3 **Identify the problem and will carry out the research independently** | 1 **Summarize the papers** | | 2 **Choose problems that may have AI-ML based Solutions** | 1 **Take care of ethical principles while critiquing the associated literature** |
| **C212.2** | Examine the research gaps by analyzing the research articles. | | | | |
| Mapping and Justification | 3 **Do the investigation independently** | 2 **Write the integrated summary** | 1 **Knowledge gained by reading the articles** | 2 **Develop an understanding regarding the gaps in existing literature** | 2 **Take care of ethical principles while finding the research gaps** |
| **C212.3** | Appraise their communication and presentation skills by delivering the research findings through a seminar presentation. | | | | |
| Mapping and Justification | | 3 **Present the seminar** | 2 **Demonstrate their study in the form of seminar** | | 2 **Present their findings by considering the ethical principles in a professional manner** |
| **C212.4** | Create a comprehensive report by compiling the research findings, ensuring both accuracy and clarity in the presented information. | | | | |
| Mapping and Justification | 2 **Present their investigations** | 3 **Write and present the** | 2 **Demonstrate their study in** | 1 **Report various AI-ML solutions** | 3 **Develop the report having minimum** |

| | independently | report | form of a report | studied in numerous literature | plagiarism considering ethical principles |
|---|---|---|---|---|---|
| Avg. | 3 | 2 | 2 | 2 | 2 |

| Course Code | 17M17CS213 | Semester ODD (specify Odd/Even) | Semester III (ODD) Session 2023 - 2024 |
|---|---|---|---|
| | | | Month from August'23 to Dec'23 |

| Course Name | Dissertation (MTech – AIML)(NBA Code: C213) | | |
|---|---|---|---|
| Credits | 4 | Contact Hours | 8 |

| Faculty (Names) | Coordinator(s) | Dr. Shikha Jain |
|---|---|---|
| | Teacher(s) (Alphabetically) | Dr. Shikha Jain |

| COURSE OUTCOMES | | COGNITIVE LEVELS |
|---|---|---|
| C213.1 | Identify and refine a research problem after critical analysis of relevant literature. | Analyze (Level-4) |
| C213.2 | Apply appropriate research methodology to design and implement the solution of research problem | Apply (Level-3) |
| C213.3 | Critically analyse and evaluate the proposed solution with respect to state-of-art | Evaluate (Level-5) |
| C213.4 | Report the research findings clearly and effectively both in written and oral form while following the research ethics. | Create (Level-6) |
| C213.5 | Demonstrate significant research contribution in relation to employability and higher studies. | Create (Level-6) |

**Evaluation Criteria :**

Day to day work to be awarded by Supervisor - 40 Marks

End Semester Evaluation by a panel of Examiners - 60 Marks

| Total | **100 Marks** |
|---|---|

| COs | PO 1 | PO 2 | PO 3 | PSO1 | PSO2 |
|---|---|---|---|---|---|
| **C213.1** | 2 Student will do critical analysis of relevant literature to find the existing gaps | | 1 Student will frame the research objectives based on the existing gaps. | 1 Student will investigate some real life computing problems | 1 While investigating the research problem, student will follow all the research ethics. |

| | | | | | |
|---|---|---|---|---|---|
| **C213.2** | **3**<br>Student will propose design to fill the existing gaps | **1**<br>Student will draw the design diagram in the report | **2**<br>Student will propose novel solution for the identified problem | **3**<br>Student will propose novel solution for the some real life computing problems | **2**<br>While proposing the solution, student will follow all the research ethics. |
| **C213.3** | **1**<br>Student will investigate the evaluation metrics | **2**<br>Student mention the evaluation metrics in the report | **3**<br>Student will evaluate the proposed design and check its goodness | **3**<br>Student will evaluate the proposed solution for the some real life computing problems | **2**<br>While evaluation, student will follow all the research ethics. |
| **C213.4** | | 3<br>Students will submit a project report | 3<br>Students will submit a project report from the selected domain | | 3<br>While writing the report, student will follow all the research ethics. |
| **C213.5** | | 2<br>Students will write a research paper as well | 3<br>Mastery in the domain will be demonstrated in the form of research paper. | | 3<br>While writing the paper, student will follow all the research ethics. |
| **Avg.** | **2** | **2** | **2** | **2** | **2** |

| Course Code | 17M17CS214 | Semester ODD (specify Odd/Even) | Semester III Session 2023 -2024 Month from August'23 to Dec'24 |
|---|---|---|---|
| Course Name | Industrial Project (AIML) (NBA Code: C214) | | |
| Credits | 4 | Contact Hours | 8 |

| Faculty (Names) | Coordinator(s) | Dr. Shikha Jain |
|---|---|---|
| | Teacher(s) (Alphabetically) | Dr.Shikha Jain |

| COURSE OUTCOMES | | COGNITIVE LEVELS |
|---|---|---|
| C214.1 | Identify the real world problems after critical analysis of existing solutions and tools in relevant industry | Analyze (Level-4) |
| C214.2 | Apply engineering knowledge to design and implement the solution | Apply (Level-3) |
| C214.3 | Critically analyse and evaluate the proposed solution with respect to alternatives | Evaluate (Level-5) |
| C214.4 | Report the project findings clearly and effectively both in written and oral form in relation to employability while following the industry/ research ethics | Create (Level-6) |

**Evaluation Scheme**

**To be awarded by Supervisor from Industry**
(i) Problems statements and identification of work plan - 10 Marks
(ii) Execution of work plan and progress made - 40 Marks

**Total (a) : 50 Marks**

**To be awarded by Supervisor from JIIT**
(iii) Interaction with Internal Supervisor upto mid semester - 10 Marks
(iv) Interaction with Internal Supervisor from mid to end semester - 10 Marks
(v) Report, Presentation and Viva-Voce at the end of semester - 30 Marks
by a panel of examiners consisting of Internal Supervisor,
a nominee of HoD and a nominee of Dean A & R /RID as
approved by VC

**Total (b): 50 Marks**
**Grand Total (a+b) : 100 Marks**

| COs | PO 1 | PO 2 | PO 3 | PSO1 | PSO2 |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| **C214.1** | 2<br>Student will do critical analysis of relevant literature/ solutions/ tools to find the existing gaps | | 1<br>Student will frame the research objectives based on the existing gaps. | 1<br>Student will investigate some real life computing problems | 1<br>While investigating the research problem, student will follow all the industry ethics. |
| **C214.2** | 3<br>Student will propose design to fill the existing gaps | 1<br>Student will draw the design diagram in the report | 2<br>Student will propose novel solution/ implementation for the identified problem. | 3<br>Student will propose novel solution for the some real life computing problems | 2<br>While proposing the solution, student will follow all the industry ethics. |
| **C214.3** | 1<br>Student will investigate the evaluation metrics | 2<br>Student mention evaluation methods in the report | 3<br>Student will evaluate and analyze the proposed design and check its goodness | 3<br>Student will evaluate the proposed solution for the some real life computing problems | 2<br>While evaluation, student will follow all the industry ethics. |
| **C214.4** | | 3<br>Students will submit a project report | 3<br>Students will submit a project report from the selected domain | | 3<br>While writing the report, student will follow all the industry ethics. |
| **Avg.** | 2 | 2 | 2 | 2 | 2 |

| Course Code | **19M12HS211** | Semester: Odd (specify Odd/Even) | Semester: III (MTech) Session: 2023 -2024 Month: from July to December |
|---|---|---|---|
| Course Name | **Cost Accounting for Engineering Projects** | | |
| Credits | 03 | Contact Hours | 3-0-0 |

| Faculty (Names) | Coordinator(s) | Dr. Purwa Srivastava |
|---|---|---|
| | Teacher(s) (Alphabetically) | Dr. Purwa Srivastava |

| COURSE OUTCOMES | | COGNITIVE LEVELS |
|---|---|---|
| **C201.1** | Understand basic concepts of Cost Accounting | Understand (C2) |
| **C201.2** | Apply concepts of cost in project management | Apply (C3) |
| **C201.3** | Analyze cost behavior for decision making | Analyze (C4) |
| **C201.4** | Evaluate different budgets for controlling the cost | Evaluate (C5) |

| Module No. | Title of the Module | Topics in the Module | No. of Lectures for the module |
|---|---|---|---|
| **1.** | Introduction | Introduction & Overview of Strategic Cost Management Process | 2 |
| **2.** | Cost Concepts | Relevant Cost, Differential Cost, Incremental Cost, Opportunity Cost, Objectives of a costing system, Inventory Valuation, Provision of data for decision making | 4 |
| **3.** | Project execution | Meaning, Different types, why to manage, cost overruns centres, various stages of project execution: conception to commissioning. Project execution as conglomeration of technical and nontechnical activities. Detailed Engineering activities. | 5 |
| **4.** | Project Execution & Quantitative | Pre project execution main clearances and documents Project team: Role of each member. Importance Project site | 7 |

| | techniques for cost management | Data required with significance, Project contracts, Types and contents, Project execution, Project cost control, bar charts, Project commissioning, Linear Programming, PERT/CPM, Transportation problems, Assignment problems, Simulation, Learning Curve Theory | |
|---|---|---|---|
| **5.** | Cost Behavior | Distinction between Marginal Costing and Absorption Costing; Break-even Analysis, Cost-Volume-Profit Analysis. Various decision-making problems. | 6 |
| **6.** | Profit Planning Marginal Costing | Standard Costing and Variance Analysis. Pricing strategies: Pareto Analysis. Target costing, Life Cycle Costing. Costing of service sector. Just-in-time approach, | 6 |
| **7.** | Material Planning | Material Requirement Planning, Enterprise Resource Planning, Total Quality Management and Theory of constraints. Activity-Based Cost Management, Bench Marking; Balanced Score Card & value chain analysis. | 6 |
| **8.** | Budgetary Control | Flexible budgets, Performance budgets, zero based budgets, Measurements of divisional profitability pricing decisions including transfer pricing. | 6 |
| **Total number of Lectures** | | | **42** |

**Evaluation Criteria**

| Components | Maximum Marks |
|---|---|
| T1 | 20 |
| T2 | 20 |
| End Semester Examination | 35 |
| TA | 25 (Quiz+ project) |
| **Total** | **100** |

Project based learning: students will form a group of four to five students. To make subject application based, students will apply various concepts such as Cost management and various types of Costing, project execution & quantitative techniques for cost management, cost behavior and profit planning. Students will apply these concepts on organization, or in any ongoing project or interdisciplinary base research project or any innovative idea in any particular industry along with feasibility.

| **Recommended Reading material:** Author(s), Title, Edition, Publisher, Year of Publication etc. ( Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format) |
|---|
| 1. S. M. Datar and M. Rajan, *Horngren's Cost Accounting: A Managerial Emphasis. 16th ed*. Pearson Education, 2018. |

| 2. | B. M. L. Nigam and I. C. Jain, *Cost Accounting: Principles And Practice*, PHI Learning Pvt. Ltd. PHI Learning Pvt. Ltd., 2010. |
| 3. | R. S. Kaplan and A. A. Atkinson, *Advanced management accounting*. PHI Learning, 2015. |
| 4. | A. K. Bhattacharyya, *Principles and practice of cost accounting*. PHI Learning Pvt. Ltd., 2004. |
| 5. | N. D. Vohra, *Quantitative Techniques in Management, 3e*. Tata McGraw-Hill Education, 2006. |
| 6. | C. Drury, *Management and Cost Accounting ,10th edition, Cengage Learning*. 2017. |
| 7. | P. Chandra, *Projects-Planning Analysis, Selection, Implementation & Review 9e, Tata McGraw Hill, New Delhi.* 2019. |

| Course Code | **19M13HS211** | Semester: Odd | Semester: M.Tech III and M.Tech Integrated X Session: 2023 -2024 |
|---|---|---|---|
| | | | Month from: August-December 2023 |
| Course Name | **Constitution of India** | | |
| Credits | 2 | Contact Hours | 2-0-0 |

| Faculty (Names) | Coordinator(s) | Dr. Namreeta Kumari | |
|---|---|---|---|
| | Teacher(s) (Alphabetically) | Dr. Namreeta Kumari | |

| COURSE OUTCOMES | | COGNITIVE LEVELS |
|---|---|---|
| **C202.1** | Demonstrate an understanding of the historical inheritances and institutional legacies of Indian Constitution | Understand (C2) |
| **C202.2** | Demonstrate an understanding of the powers and functions of the Indian executive, legislature and judiciary | Understand (C2) |
| **C202.3** | Assess the devolution of powers and authority of governance of the Union government and the local government | Evaluate (C5) |
| **C202.4** | Assess the nature of the Indian constitution and its applicability in the study of politics in India | Evaluate (C5) |

| Module No. | Title of the Module | Topics in the Module | No. of Lectures for the module |
|---|---|---|---|
| **1.** | History of Making of the Indian Constitution | • History <br> • Drafting Committee-Composition & Working | 2 |
| **2.** | Philosophy of the India Constitution | • Preamble <br> • Salient Features | 2 |

| | | • Federalism | |
|---|---|---|---|
| **3.** | Fundamental Rights and Directive Principles | • Right to Equality<br>• Right to Freedom<br>• Right against Exploitation<br>• Right to Freedom of Religion<br>• Cultural and Educational Rights<br>• Right to Constitutional Remedies<br>• Directive Principles of State Policy<br>• Conflict between DPSP and FR<br>• Fundamental Duties | 5 |
| **4.** | Organs of Governance | • Parliament-Composition, Qualifications & and Disqualification, Powers and Functions<br>• Executive- President, Governor Council of Ministers<br>• Judiciary-Appointment and Transfer of Judges, Qualifications, Power and Functions | 8 |
| **5.** | Local Administration | • District's Administration head: Role and Importance<br>• Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation<br>• Panchayati raj: Introduction, PRI: Zila Panchayat.<br>• Elected officials and their roles, CEO Zila Panchayat: Position and role<br>• Block level: Organizational Hierarchy (Different departments)<br>• Village level: Role of Elected and Appointed officials<br>• Importance of Grass root democracy | 8 |
| **6.** | Election Commission | • Election Commission: Role and Functioning | 3 |
| **Total number of Lectures** | | | **28** |
| **Evaluation Criteria**<br>**Components** | | **Maximum Marks** | |

| | | |
|---|---|---|
| Mid Term: | 30 | |
| End Semester Examination | 40 | |
| TA | 30 (Attendance,Quiz, Project) | |
| **Total** | **100** | |

| | Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. ( Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format) |
|---|---|
| **1.** | Austin, G. (1996). *The Indian Constitution: Corner Stone of a Nation*. Oxford: Oxford University Press |
| **2.** | Bakshi, P.M.(2015). *The Constitution of India*. Delhi: Universal Law Pub. Co. Pvt. Ltd |
| **3.** | Bhuyan, D. (2016). *Constitutional Government and Democracy in India*. Cuttack:Kitab Mahal.. |
| **4.** | Busi, S.N. (2016). *Dr. B. R. Ambedkar framing of Indian Constitution*. Hyderabad:Ava Publishers |
| **5.** | Basu, D.D. (2018). *Introduction to the Constitution of India*. Nagpur: Lexis Nexis |
| **6.** | Jayal, N.G. & Mehta, P.B. (eds.)(2010). *The Oxford Companion to Politics in India*. New Delhi: Oxford University Press. |
| **7.** | Constitution series by Rajya Sabha Television and discussion on Indian Constitution by Rajya Sabha Television |

**Project**: Projects based on the different aspects of the Indian Constitution have to be submitted by the students as a part of the project-based learning. This would help the students learn about the nitty gritty of the Constitution, their rights and duties which would later on help them not only in their work place but in their general life.