Jaypee Institute of Information Technology

M. TECH BIOTECHNOLOGY

Course Descriptions

SEMESTER 3

DISSERTATION

Course Code	**17M17BT213**	**Semester ODD**	**Semester** III **Session** 2021-2022 **Month from** June to December
Course Name	**Dissertation**		
Credits	16	**Contact Hours**	32

Faculty (Names)	**Coordinator(s)**	Prof Sujata Mohanty
	Teacher(s) (Alphabetically)	Prof Sujata Mohanty

COURSE OUTCOMES		**COGNITIVE LEVELS**
C213.1	Identify the research problem and select suitable scientific methods to solve the given research problem	Apply (Level 3)
C213.2	Formulate the plan and test for hypothesis	Create (level 6)
C213.3	Assess the key findings and interpret the data	Evaluate (Level 5)
C213.4	Compose the written scientific report and effectively present the data	Create (Level 6)

Project Based Learning: In this course, students work on various research projects under the guidance of the faculty mentors of our department. Therefore, the learning from this course is completely Project-based.

Employability: Students expose themselves to various novel techniques and disciplines during execution of their project work and the outcome of these research projects facilitates them in cultivating innovation, R&D aspect and also motivates them towards right Employability.

PROJECT BASED LEARNING-II

Project Based Learning -II (17M17BT212)				
PROJECT BASED LEARNING-II (17M17BT112) Viva- I / Mid Term Viva: 30 Marks Viva-II / End Term Viva: 35 Marks Day to Day Marks from Supervisor: 35				
	COURSE OUTCOMES	**Cognitive level**	**Assessment tool** **Direct (80%)**	**Assessment tool** **Indirect (20%)**
CO1	Compare and contrast the existing literature and interpret the research problem	Understanding Level 2	**Viva-I** (Defining and Interpreting the research problem- **5**; summarize and evaluate the current knowledge of the topic based on Literature reviewed - **5,** Viva -**5)**, Day **to Day Marks from Supervisors** ((Defining and Interpreting the research problem- **2**; summaries' and evaluate the current knowledge of the topic based on Literature reviewed - **3)**	Exit Survey
CO2	Make use of biotechnological and allied fields to explore different strategies	Applying Level 3	**Viva-I** (Rational of the study & Objectives-**5**), **Day to Day Marks by Supervisor** (Rational of the study & Objectives-**5**), **Viva-II** (Strategic	Exit Survey

			approach proposed for exploring answers to the research problem and attained -**10**); **Day to Day Marks by Supervisor (**Strategic approach proposed for exploring answers to the problem statement and attained **-5)**	
C03	Designing the research strategy	Create Level Level 6	Viva-I (Designing the research strategy / work plan -**10) Day to Day Marks by Supervisor (**Understanding of the proposed research strategy/ work plan **-5)** **Viva-II** (Research strategy followed and outcomes of the study -10), **Day to Day Marks by Supervisor** (Research strategy followed the outcomes of the study -**5**)	Exit Survey
C04	Conclude the research finding through presentation and technical report	Analyzing Level 4	**Viva-II** (Conclusion / Learning Outcome, Viva and Report) – **15**, Day to **Day marks from Supervisor** (Conclusion / Learning Outcome, Report – **10**)	Exit Survey
Project based learning: The students learn the importance of secondary data collection using databased, journals, periodicals and databases. They perform wet lab and in-silico, experimental studies, systematic review or survey-based analysis to define the problem statement and learn biotechnological and allied approaches to answer the problem statements. Such knowledge help				

student to develop independent thinking and inculcate the practice of following good laboratory, scientific and ethical practices in their career.

SEMINAR & TERM PAPER I

<table>
<tr><th colspan="6">Seminar & Term Paper (17M17BT211) – M Tech: INTGT X Sem and M.T. III Sem</th></tr>
<tr><td colspan="6">Viva- I / Mid Term Viva: 20 Marks
Viva-II / End Term Viva: 20 Marks
Term paper: 20 Marks
Day to Day Marks from Supervisor: 40 Marks</td></tr>
<tr><td></td><td></td><td>Course Outcome</td><td>Cognitive level</td><td colspan="2">Assessment tool</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Direct</td><td>Indirect</td></tr>
<tr><td>1</td><td>CO212.1</td><td>Make use of existing literature to define a research problem.</td><td>Apply Level (Level III)</td><td rowspan="3">(i) Midterm Seminar - includes Literature survey (5 marks) and Problem identification (5 marks)

(ii) End term Seminar - includes Literature survey (10 marks) and critical reflection reflections on problem solution (5 marks)

(iii)Supervisor’s assessment of day-to-day work prior to Midterm
includes regularity of interaction (5 marks) and literature survey (content and number of research papers / technical articles/databases etc. referred (10 marks)

(iv) Supervisor’s assessment of day to day after Midterm & up to End Term includes regularity of interaction (5 marks), literature survey (content and number of research papers / technical articles/databases etc. referred (10 marks) and contribution to the topic (5 marks)</td><td>Exit Survey</td></tr>
<tr><td>2</td><td>CO212.2</td><td>Survey the available scientific resources & databases to address the problem</td><td>Analyze Level (Level IV)</td><td>Exit Survey</td></tr>
<tr><td>3</td><td>CO212.3</td><td>Evaluate and critique acquired knowledge</td><td>Evaluate Level (Level V)</td><td>Exit Survey</td></tr>
<tr><td>4</td><td>CO212.4</td><td>Conclude through oral and written scientific</td><td>Evaluate Level (Level V)</td><td>Midterm and End term seminar presentations will include content of the seminar, communication style,</td><td>Exit survey</td></tr>
</table>

		presentations		explanation and reasoning, conclusions (10 marks) **Midterm Report (10 marks) & Term paper (20 marks)** include organization of the report, Reference style, Plagiarism and punctuality of submission)	
Project based learning: Students research on topic of their interest and define problem statement, figure out probable solution by reviewing the current literature and communicate their findings orally and by writing. This develops independent working and thinking ability and other set of skills such as research, problem identification, problem solution, written and oral communication, etc. that are attractive for prospective employers.					

COST ACCOUNTING FOR ENGINEERING PROJECTS

Course Code	**19M12HS211**	**Semester** Odd (specify Odd/Even)	**Semester** III **Session** 2021-22 **Month** from July to December
Course Name	**Cost Accounting for Engineering Projects**		
Credits	3	**Contact Hours**	3-0-0

Faculty (Names)	**Coordinator(s)**	Dr. Praveen Kumar Sharma
	Teacher(s) (Alphabetically)	Dr. Praveen Kumar Sharma

COURSE OUTCOMES	
C201-1.1	Understand basic concepts of Cost Accounting
C201-1.2	Apply concepts of cost in project management
C201-1.3	Analyze cost behavior for decision making
C201-1.4	Construct different budgets for controlling the cost

Module No.	**Title of the Module**	**Topics in the Module**	**No. of Lectures for the module**
1.	Introduction	Introduction & Overview of Cost Management Process	3

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 centers, various stages of project execution: conception to commissioning. Project execution as conglomeration of technical and nontechnical activities. Detailed Engineering activities.	5
4.	Project Execution	Pre project execution main clearances and documents Project team: Role of each member. Importance Project site Data required with significance, Project contracts, Types and contents, Project execution, Project cost control, bar charts & network diagrams, Project commissioning	6
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**

Project based learning: student will form the group of four to five students. To make subject application based, student will apply various concepts such as Cost management and various types of Costing, project execution & quantitative technique for cost management, cost behaviour and profit planning. Student will apply these concept on organization, or in any ongoing project or interdisciplinary base research project or any innovative idea in any particular industry along with feasibility.
Evaluation Criteria **Components Maximum** **Marks** T1 20 T2 20 End Semester Examination 35 TA 25 (Test +Quiz+ Assignment) **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.	B. M. L. Nigam and I. C. Jain, *Cost Accounting: Principles and Practice, PHI Learning Pvt. Ltd*. PHI Learning Pvt. Ltd., 2010.
2.	C. T. Horngren, *Cost accounting: A managerial emphasis, 13/e Pearson Education India*. Pearson Education India, 2009.
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.

Course Code	**19M13HS211**	**Semester** Odd	**Semester** III Session 2021-22 **Month** from July to December
Course Name	**Constitution of India**		
Credits	2	**Contact Hours**	(2-0-0)
Faculty (Names)	**Coordinator(s)**	Dr. Chandrima Chaudhuri	
	Teacher(s) (Alphabetically)	Dr. Chandrima Chaudhuri	

COURSE OUTCOMES	
C202.1	Demonstrate an understanding of the conflict between the Fundamental Rights and Directive Principles as given in the Indian Constitution
C202.2	Assess the nature of the Indian constitution and its applicability in the study of politics in India.
C202.3	Assess the devolution of powers and authority of governance of the Union government and the local government
C202.4	Demonstrate an understanding of the powers and functions of the Indian executive, legislature and judiciary

Module No.	**Title of the Module**	**Topics in the Module**	**No. of Lectures for the module**
1.	History of Constitution	● History Drafting Committee-Composition & Working	3
2.	Philosophy of the India Constitution	● Preamble -Salient Features	1
3.	Fundamental Rights and Directive	● Right to Equality ● Right to Freedom ● Right against Exploitation ● Right to Freedom of Religion ● Cultural and Educational Rights ● Right to Constitutional Remedies ● Directive Principles of State Policy	5

	Principles		
4.	Organs of	● Parliament-Composition, Qualifications & and Disqualification ,Powers and Functions ● Executive- President , Governor , Council of Ministers ● Judiciary-Appointment and Transfer of Judges, Qualifications, Power and Functions	8
5.	Local Administration	● District's Administration head: Role and Importance ● Municipalities: Introduction, Mayor and role of	8
		Elected Representative, CEO of Municipal Corporation ● Panchayati raj: Introduction, PRI: Zila Panchayat. Elected officials and their roles, CEO Zila Panchayat: Position and role. Block level: Organizational Hierarchy(Different departments),Village level, Importance of Grass root democracy	
6.	Election Commission	● Election Commission: Role and Functioning	3
Total number of Lectures			**28**

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

Evaluation Criteria

Components	**Maximum Marks**
Mid Term Examination:	30
End Semester Examination	40
TA	30 (Assignment and Presentation)
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 inIndia*. New Delhi: Oxford University Press.
7.	Kashyap, S.C.(1995). *Our Constitution/ Our Parliament/Our Judiciary*. New Delhi: NBT
8.	Raghunandan, J. R. (2012).*Decentralization and local governments: The Indian Experience*. New Delhi: Orient Black Swan