

### Detailed Syllabus

<b>Course Code</b>	17M17CS121	<b>Semester Odd (specify Odd/Even)</b>	<b>Semester III      Session 2019 -2020 Month from July to Dec</b>
<b>Course Name</b>	Project Based Learning-II (Software Development Automation)		
<b>Credits</b>	4	<b>Contact Hours</b>	8

<b>Faculty (Names)</b>	<b>Coordinator(s)</b>	Dr. Anita Sahoo
	<b>Teacher(s) (Alphabetically)</b>	Dr. Anita Sahoo, Dr. Hema N, Dr. Pawan Singh Mehra, Dr. Ashish Mehra

<b>COURSE OUTCOMES</b>		<b>COGNITIVE LEVELS</b>
<b>C210.1</b>	Develop a project on live problems by applying automated software development process.	Create Level (C6)
<b>C210.2</b>	Confront the issues related to development of project which includes team work, test driven design, data collections etc.	Analyze Level (C4)
<b>C210.3</b>	Develop oral communication skill and prepare technical report.	Apply Level (C3)
<b>C210.4</b>	Critically review the projects developed by peers.	Evaluate Level (C5)

<b>Evaluation Criteria</b>	
<b>Components</b>	<b>Maximum Marks</b>
6-Reviews (8 Marks each)	48
Report	10
Presentation	10
Viva	16
Peer Assessment	8
Self Assessment	8
<b>Total Marks</b>	<b>100</b>

**Detailed Syllabus**  
**Lecture-wise Breakup**

<b>Course Code</b>	17M17CS212	<b>Semester Odd 2019</b> (specify Odd/Even)	<b>Semester 3rd Session 2018 -2019</b> <b>Month from July, 2019 to Dec., 2019</b>
<b>Course Name</b>	Seminar and Term Paper		
<b>Credits</b>	4	<b>Contact Hours</b>	

<b>Faculty (Names)</b>	<b>Coordinator(s)</b>	Kavita Pandey
	<b>Teacher(s)</b> (Alphabetically)	Kavita Pandey

<b>COURSE OUTCOMES</b>		<b>COGNITIVE LEVELS</b>
C212.1	Summarize the literature around a significant research problem in the field of Computer Science	Understand (level 2)
C212.2	Analyze the research articles from a deeper perspective and examine the research gaps	Analyze (level 4)
C212.3	Improve the communication and writing skills by compiling the findings in the form of report and seminar	Evaluate (level 6)

<b>Evaluation Criteria</b>		
<b>Components</b>	<b>Maximum Marks</b>	
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	
<b>Total</b>	<b>100</b>	

### Detailed Syllabus

<b>Course Code</b>	17M17CS213	<b>Semester ODD (specify Odd/Even)</b>	<b>Semester III Session 2019 -2020 Month from July to Dec</b>
<b>Course Name</b>	Dissertation (NBA Code: C213)		
<b>Credits</b>	4	<b>Contact Hours</b>	8

<b>Faculty (Names)</b>	<b>Coordinator(s)</b>	Dr. Shikha Jain
	<b>Teacher(s) (Alphabetically)</b>	Dr. Shikha Jain

<b>COURSE OUTCOMES</b>		<b>COGNITIVE LEVELS</b>
C213.1	Identify a research problem after thorough literature survey.	Understand (Level-2)
C213.2	Apply the acquired knowledge in the field of computer science while proposing a solution to the identified research problem.	Apply (Level-3)
C213.3	Implement the proposed solution to exhibit the programming skill.	Analyze (Level-4)
C213.4	Evaluate the solution to meet the given set of requirements.	Analyze (Level-4)
C213.5	Demonstrate and defend their research work to a panel of experts.	Evaluate (Level-5)
C213.6	Demonstrate the research output in terms of publications.	Create (Level-6)

**Detailed Syllabus**  
**Lecture-wise Breakup**

<b>Course Code</b>	18M12MA111	<b>Semester Odd</b> <b>(specify Odd/Even)</b>	<b>Semester I Session</b> 2019 -2020 <b>Month from</b> July 2019 to December 2020
<b>Course Name</b>	Advanced Operations Research		
<b>Credits</b>	3	<b>Contact Hours</b>	3-0-0

<b>Faculty (Names)</b>	<b>Coordinator(s)</b>	Prof. A. K. Aggarwal
	<b>Teacher(s)</b> <b>(Alphabetically)</b>	Prof. A. K. Aggarwal

<b>COURSE OUTCOMES</b>		<b>COGNITIVE LEVELS</b>
After pursuing the above mentioned course, the students will be able to:		
C203.1	construct and solve linear programming problems and analyze their optimal solution using parametric and sensitivity analysis	Analyzing Level (C4)
C203.2	identify and solve the deterministic inventory models with and without shortages.	Applying Level (C3)
C203.3	construct the network models and analyze the critical activities using PERT/CPM for project planning.	Analyzing Level (C4)
C203.4	identify pure and mixed strategy games and solve and analyze them using graphical and linear programming techniques.	Analyzing Level (C4)
C203.5	solve multi-objective and goal programming problems by graphical and simplex method.	Analyzing Level (C4)
C203.6	demonstrate Khun-Tucker conditions and apply them to solve non-linear programming problems, quadratic and separable programming problems.	Analyzing Level (C4)

<b>Module No.</b>	<b>Title of the Module</b>	<b>Topics in the Module</b>	<b>No. of Lectures for the module</b>
1.	Review of Linear Programming Problems and Duality	Convex sets, graphical and simplex method, artificial variable techniques, revised simplex method, Duality theory, dual simplex method, revised dual simplex method.	06
2.	Parametric and Sensitivity Analysis	Sensitivity analysis, parametric linear programming, parametric sensitivity analysis.	06
3.	Inventory Controls	Introduction, Inventory models, Economic order quantity (EOQ), Deterministic inventory problems with and without shortages.	06
4.	Network Analysis	Shortest path problem, PERT/CPM, Simulation techniques.	06
5.	Games and Strategies	Pure and mixed strategies, solution by graphical and linear programming methods.	06
6.	Multi-objective and Goal Programming Problems	Solution by graphical and simplex method.	04
7.	Nonlinear Programming	Convex functions and their properties, Kuhn Tucker theory, convex quadratic programming, Wolfe's and Beale's algorithm, Separable convex programming.	06
		<b>Total number of Lectures</b>	<b>40</b>

<b>Evaluation Criteria</b>	
<b>Components</b>	<b>Maximum Marks</b>
T1	20
T2	20
End Semester Examination	35

TA	25 (Quiz, Assignments)
<b>Total</b>	<b>100</b>

**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.	Taha H. A., Operations Research: An Introduction, 7th edition, PHI, 2002.
2.	Rao, S. S., Engineering Optimization, Theory and Practice, Third Edition, New Age International Publishers, 2010.
3.	Wagner, H. M., Principles of Operations Research with Applications to Managerial Decisions, Prentice Hall of India Pvt. Ltd., 1975.
4.	Deb, Kalyanmoy, Optimization for Engineering Design, Algorithms and Principles, PHI, 2010.

**Detailed Syllabus**  
**Lecture-wise Breakup**

Course Code	<b>19M13HS211</b>	Semester: Odd	Semester: III Session: 2019 -2020 Month from: July-December
Course Name	<b>Constitution of India</b>		
Credits	2	Contact Hours	(2-0-0)

Faculty (Names)	Coordinator(s)	Dr. Chandrima Chaudhuri
	Teacher(s) (Alphabetically)	Dr. Chandrima Chaudhuri

COURSE OUTCOMES		COGNITIVE LEVELS
<b>C202.1</b>	Demonstrate an understanding of the conflict between the Fundamental Rights and Directive Principles as given in the Indian Constitution	Understand (C2)
<b>C202.2</b>	Assess the nature of the Indian constitution and its applicability in the study of politics in India.	Evaluate (C5)
<b>C202.3</b>	Assess the devolution of powers and authority of governance of the Union government and the local government	Evaluate (C5)
<b>C202.4</b>	Demonstrate an understanding of the powers and functions of the Indian executive, legislature and judiciary	Understand (C2)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	History of Making of the Indian Constitution	<ul style="list-style-type: none"> <li>History Drafting Committee-Composition &amp; Working</li> </ul>	3
2.	Philosophy of the India Constitution	<ul style="list-style-type: none"> <li>Preamble -Salient Features</li> </ul>	1
3.	Fundamental Rights and Directive Principles	<ul style="list-style-type: none"> <li>Right to Equality</li> <li>Right to Freedom</li> <li>Right against Exploitation</li> <li>Right to Freedom of Religion</li> <li>Cultural and Educational Rights</li> <li>Right to Constitutional Remedies</li> <li>Directive Principles of State Policy</li> </ul>	5
4.	Organs of Governance	<ul style="list-style-type: none"> <li>Parliament-Composition, Qualifications &amp; and Disqualification ,Powers and Functions</li> <li>Executive- President , Governor , Council of Ministers</li> <li>Judiciary-Appointment and Transfer of Judges, Qualifications, Power and Functions</li> </ul>	8
5.	Local Administration	<ul style="list-style-type: none"> <li>District's Administration head: Role and Importance</li> <li>Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation</li> <li>Panchayati raj: Introduction, PRI: Zila Panchayat. Elected officials and their roles, CEO Zila Panchayat: Position and role. Block level: Organizational</li> </ul>	8

		Hierarchy(Different departments),Village level, Importance of Grass root democracy	
6.	Election Commission	• Election Commission: Role and Functioning	3

<b>Total number of Lectures</b>	<b>28</b>
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**Evaluation Criteria**

Components	Maximum Marks
Mid Term Examination:	30
End Semester Examination	40
TA	30 (Assignment and Presentation)
<b>Total</b>	<b>100</b>

**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). <i>The Indian Constitution: Corner Stone of a Nation</i> . Oxford: Oxford University Press
2.	Bakshi, P.M.(2015). <i>The Constitution of India</i> . Delhi: Universal Law Pub. Co. Pvt. Ltd
3.	Bhuyan, D. (2016). <i>Constitutional Government and Democracy in India</i> . Cuttack:Kitab Mahal..
4.	Busi, S.N. (2016). <i>Dr. B. R. Ambedkar framing of Indian Constitution</i> . Hyderabad:Ava Publishers
5.	Basu, D.D. (2018). <i>Introduction to the Constitution of India</i> . Nagpur: Lexis Nexis
6.	Jayal, N.G. & Mehta, P.B. (eds.)(2010). <i>The Oxford Companion to Politics inIndia</i> . New Delhi: Oxford University Press.
7.	Kashyap, S.C.(1995). <i>Our Constitution/ Our Parliament/Our Judiciary</i> . New Delhi: NBT
8.	Raghunandan, J. R. (2012). <i>Decentralization and local governments: The Indian Experience</i> . New Delhi: Orient Black Swan
9.	Sharma, B.K. (2005). <i>Introduction to the Constitution of India</i> . New Delhi: Prentice Hall of India Prvt Limited
10.	Sikri, S.L.(2002). <i>Indian Government and Politics</i> . New Delhi: Kalyani Publishers

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**Lecture-wise Breakup**

<b>Course Code</b>	17M17CS214	<b>Semester ODD</b> <b>(specify Odd/Even)</b>	<b>Semester III Session 2019 -2020</b> <b>Month from July to Dec</b>
<b>Course Name</b>	Industrial Project (NBA Code: C214)		
<b>Credits</b>	4	<b>Contact Hours</b>	8

<b>Faculty (Names)</b>	<b>Coordinator(s)</b>	Dr. Shikha Jain
	<b>Teacher(s)</b> <b>(Alphabetically)</b>	Dr. Shikha Jain

<b>COURSE OUTCOMES</b>		<b>COGNITIVE LEVELS</b>
C214.1	Identify an organization and relevant project as problem	Understand (Level-2)
C214.2	Review relevant literature related to identified project	Understand (Level-2)
C214.3	Apply acquired Computer Science concepts and tools to solve the business-related problem	Apply (Level-3)
C214.4	Analyze various solution alternatives to solve the given problem	Analyze (Level-4)
C214.5	Evaluate proposed solution with respect to alternatives to establish its efficacy	Evaluate (Level-5)
C214.6	Create oral and written account of the work done and its results and conclusions	Create (Level-6)