LECTURE PLAN

Institute/Department	UNIVERSITY INSTITUTE OF COMPUTING (UIC)	**Program**	**Master of Computer Applications - Cloud Computing and DevOps (MC307)**
Master Subject Coordinator Name:	Charanjit Singh	**Master Subject Coordinator E-Code**:	**E11181**
Course Name	Devops Process Automation Lab	**Course Code**	**22CAP-745**

Lecture	Tutorial	Practical	Self Study	Credit	Subject Type
0	0	4	0	2.0	P

Course Type	Course Category	Mode of Assessment	Mode of Delivery
N.A	Graded (GR)	Practical Examination (PRAC)	Practical (PRAC)

Mission of the Department	M1.To provide innovative learning centric facilities and quality-oriented teaching learning process for solving computational problems. M2.To provide a framework through Project Based Learning to support society and industry in promoting a multidisciplinary activity. M3.To develop crystal clear evaluation system and experiential learning mechanism aligned with futuristic technologies and industry. M4. To provide doorway for promoting research, innovation and entrepreneurship skills in collaboration with industry and academia. M5.To undertake societal activities for upliftment of rural/deprived sections of the society
Vision of the Department	To be a Centre of Excellence for nurturing computer professionals with strong application expertise through experiential learning and research for matching the requirements of industry and society instilling in them the spirit of innovation and entrepreneurship.

Program Educational Objectives(PEOs)	
PEO1	Establish well-fortified foundational knowledge, learn, adapt and successfully bring to bear cloud computing approaches on changing societal and technological challenges.
PEO2	Undertake successful implementation of ethical solutions as an individual or a member or a leader of a team by investigating, analyzing, formulating and solving complex Cloud Architectural and DevOps problems in multidisciplinary approaches using modern tools.
PEO3	Enhance professionalism and ethical attitude in the profession while communicating with local, national and foreign peers, bound within regulations and leading to lifelong learning.
PEO4	Promote awareness for uplifting health, safety, legal, environmental, ethical and cultural diversity issues for serving the society.

Program Specific OutComes(PSOs)	
PSO1	Recognizing cloud computing algorithm construction, reviewing DevOps tools in the areas of Heuristics and Network Devices, and exhibiting the ability to function within multidisciplinary teams with intellectual ability in modern tool usage.
PSO2	Appeal valid conclusions, employ research-based knowledge and research methods consistent with economic reforms and use highly computational designs to supply ethical and responsible engineering services to society.

Program OutComes(POs)	
PO1	Apply mathematics and computing fundamental and domain concepts to find out the solution of defined problems and requirements. (Computational Knowledge)
PO2	Use fundamental principle of Mathematics and Computing to identify, formulate research literature for solving complex problems, reaching appropriate solutions. (Problem Analysis)
PO3	Understand to design, analyze and develop solutions and evaluate system components or processes to meet specific need for local, regional and global public health, societal, cultural, and environmental systems. (Design/Development of Solutions)
PO4	Use expertise research-based knowledge and methods including skills for analysis and development of information to reach valid conclusions. (Conduct Investigations of Complex Computing Problems)
PO5	Adapt, apply appropriate modern computing tools and techniques to solve computing activities keeping in view the limitations. (Modern Tool Usage)

PO6	Exhibiting ethics for regulations, responsibilities and norms in professional computing practices. (Professional Ethics)
PO7	Enlighten knowledge to enhance understanding and building research, strategies in independent learning for continual development as computer applications professional. (Life-long Learning)
PO8	Establishing strategies in developing and implementing ideas in multi- disciplinary environments using computing and management skills as a member or leader in a team. (Project Management and Finance)
PO9	Contribute to progressive community and society in comprehending computing activities by writing effective reports, designing documentation, making effective presentation, and understand instructions. (Communication Efficacy)
PO10	Apply mathematics and computing knowledge to access and solve issues relating to health, safety, societal, environmental, legal, and cultural issues within local, regional and global context. (Societal and Environmental Concern)
PO11	Gain confidence for self and continuous learning to improve knowledge and competence as a member or leader of a team. (Individual and Teamwork)
PO12	Learn to innovate, design and develop solutions for solving real life business problems and addressing business development issues with a passion for quality competency and holistic approach. (Innovation and Entrepreneurship)

Text Books

Sr No	Title of the Book	Author Name	Volume/Edition	Publish Hours	Years
1	The DevOps Adoption Playbook	Sanjeev Sharma	2	Wiley IBM Press.	2023

Reference Books

Sr No	Title of the Book	Author Name	Volume/Edition	Publish Hours	Years
1	DevOps Automation Cookbook	Michael Duffy	2	Packt Publishing Ltd	2022

Course OutCome

SrNo	OutCome
CO1	Understand the working principles of building automation tools.
CO2	Implement configuration management using Chef workstations
CO3	Construct software integration and build process through automation tools.
CO4	Validate connection between server and workstations using Chef
CO5	Create sample Apache Maven project to GitHub repository

Lecture Plan Preview-Practical

Unit No	ExperimentNo	Experiment Name	Text/ Reference Books	Pedagogical Tool**	Mapped with CO Numer(s)
1	1	? Installation of Git ? Common Git Commands ? Co	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO1
1	2	? Visualising Branches ? Branch Naming Convention	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO2
1	3	? Install and configure Apache Maven ? Create sam	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO2
1	4	? Install and configure Chef Workstation, Chef Ser	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO2
2	5	? Creating Cookbooks and Recipes ? Installing Ma	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO3

2	6	? Installation of puppet ? Configuration of mast	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO3
2	7	? Creating puppet manifest file ? Implementing co	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO3
2	8	? Install and configure Teamcity ? Configuration	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO4
3	9	? Install and configure Nagios Server ? Creating	,T-The DevOps Adoption Playbook,R-DevOps Automation Cookbook	Simulation Practical,Video Demonstration	CO5

Assessment Model			
Sr No	Assessment Name	Exam Name	Max Marks
1	20PRAC01	External Viva / Voce	40
2	20PRAC01	Experiment-1	30
3	20PRAC01	Experiment-2	30
4	20PRAC01	Experiment-3	30
5	20PRAC01	Experiment-4	30
6	20PRAC01	Experiment-5	30
7	20PRAC01	Experiment-6	30
8	20PRAC01	Experiment-7	30
9	20PRAC01	Experiment-8	30
10	20PRAC01	Experiment-9	30
11	20PRAC01	Experiment-10	30
12	20PRAC01	Mid-Term Test	15

CO vs PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	NA	NA	1	1	NA	NA	NA	NA	NA	NA	NA	1	2
CO2	2	NA	NA	2	3	NA	NA	NA	NA	NA	NA	NA	2	3
CO3	3	NA	3	2	3	NA	NA	NA	NA	NA	NA	NA	1	3
CO4	2	2	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	2
CO5	3	NA	3	2	3	NA	NA	NA	NA	NA	NA	NA	2	2
Target	2.4	2	3	1.75	2.4	NA	NA	NA	NA	NA	NA	NA	1.5	2.4