Program Outcomes as defined by NBA (PO)

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Datta Meghe College of Engineering, Airoli, Navi Mumbai

DEPARTMENT OF INFORMATION TECHNOLOGY

Institute Vision : **To create value - based technocrats to fit in the world of work and research**

Institute Mission : **To adapt the best practices for creating competent human beings to work in the world of technology and research.**

Department Vision : **To develop and foster students for successful careers in the dynamic field of Information Technology.**

Department Mission :

M1:	**To create and disseminate knowledge through research, teaching & learning and to enhance society in meaningful and sustainable ways.**
M2:	**To impart a suitable environment for students and staff to showcase innovative ideas in the field of IT.**
M3:	**To bridge the curriculum gap by facilitating effective interaction among industry and Staff/Students.**

Program Educational Objectives (PEO)

PEO 1	**Develop proficiency as an IT technocrat with an ability to solve a wide range of computational problems in industry, government, or other work environments.**
PEO 2	**Attain the ability to adapt quickly to new environments and technologies, assimilate new information, and work in multi-disciplinary areas with a strong focus on innovation and entrepreneurship.**
PEO 3	**Prepare graduates with the ability of life-long learning to innovate in ever-changing global economic and technological environments of the current era.**
PEO 4	**Possess the ability to function ethically and responsibly with good cultural values and integrity to apply the best principles and practices of Information Technology towards the society.**

Program Specific Outcomes (PSO)

PSO1	**Apply Core Information Technology knowledge to develop stable and secure IT system**
PSO2	**Design, IT infrastructures for an enterprise using concepts of best practices in Information Technology and security domain.**
PSO3	**Ability to work in multidisciplinary IT enabled projects for industry and society by adapting latest trends and technologies like Analytics, Blockchain, Cloud, Data science.**

Datta Meghe College of Engineering, Airoli

Department of Information Technology

Course Name: DevOPs Lab **(R-19)**

Course Code: ITL503

Year of Study: 2021-22 **Semester:** V

Course Outcomes

ITL503.1	To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements
ITL503.2	To obtain complete knowledge of the "version control system" to effectively track changes augmented with Git and GitHub
ITL503.3	To understand the importance of Jenkins to Build and deploy Software Applications on server environment
ITL503.4	Understand the importance of Selenium and Jenkins to test Software Applications
ITL503.5	To understand concept of containerization and Analyze the Containerization of OS images and deployment of applications over Docker
ITL503.6	To Synthesize software configuration and provisioning using Ansible.

DATTA MEGHE COLLEGE OF ENGINEERING

AIROLI, NAVI MUMBAI - 400708

C E R T I F I C A T E

This is to certify that Mr. / ~~Miss~~ Parmar Jay Rohit

Of ___TE_____Class _____ IT-B_____Roll No. _3_____

Subject _____DevOps_____has performed the experiments /

Sheets mentioned in the index, in the premises of this institution.

Dr. Sujata .S. Kolhe	Dr. Sujata .S. Kolhe	Dr. Sudhir D. Sawarkar
Practical Incharge	**Head of Dept.**	**Principal**

Date _____

Examined on

Examiner 1_____**Examiner 2** _____

Datta Meghe College of Engineering, Airoli, Navi Mumbai	DEPARTMENT OF INFORMATION TECHNOLOGY
	List of Experiments **Subject: Devops Lab** **Code: ITL503**

Sr.No.	Name of the Experiment	LOs Covered	Page No.	Date	Signature
1.	To understand DevOps: Principles, Practices, and DevOps Engineer Role and Responsibilities.	LO1	1-5	13/7/21	
2.	To understand Version Control System / Source Code Management, install git and create a GitHub account.	LO1 & LO2	6-20	27/7/2021	
3.	To Perform various GIT operations on local and Remote repositories using GIT Cheat-Sheet	LO1 & LO2	21-29	27/7/2021	
4.	To understand Continuous Integration, install and configure Jenkins with Maven/Ant/Gradle to setup a build Job.	LO1 & LO3	30-43	3/8/2021	
5.	To Build the pipeline of jobs using Maven / Gradle / Ant in Jenkins, create a pipeline script to Test and deploy an application over the tomcat server.	LO1 & LO3	44-52	3/8/2021	
6.	To understand Jenkins master- slave Architecture and scale your Jenkins standalone implementation by implementing slave nodes.	LO1 & LO3	53-59	10/8/2021	
7.	To Setup and Run Selenium Tests in Jenkins Using Maven.	LO1 , LO3 & LO4	60-69	17/8/2021	
8.	To understand Docker Architecture and Container Life Cycle, install Docker and execute docker commands to manage images and interact with containers.	LO1 & LO5	70-79	7/9/2021	
9.	To learn Dockerfile instructions, build an image for a sample web application using Dockerfile.	LO1 & LO5	80-84	21/9/2021	
10.	To install and Configure Pull based Software Configuration Management and provisioning tools using Puppet.	LO1 & LO6	85-95	28/9/2021	
11.	To learn Software Configuration Management and provisioning using Puppet Blocks(Manifest, Modules, Classes, Function)	LO1 & LO6	96-113	5/10/2021	

12.	Assignment no.1	CO1	114-118	19/8/2021	
13.	Assignment no.2	CO2	119-128	1/10/2021	