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: Advanced Devops Lab (R-19)

Course Code: ITL504

Year of Study:2021 Semester: V

Course Outcomes

ITL504.1	To understand the fundamentals of Cloud Computing and be fully proficient with Cloud based DevOps solution deployment options to meet your business requirements
ITL504.2	To deploy single and multiple container applications and manage application deployments with rollouts in Kubernetes
ITL504.3	To apply best practices for managing infrastructure as code environments and use terraform to define and deploy cloud infrastructure
ITL504.4	To identify and remediate application vulnerabilities earlier and help integrate security in the development process using SAST Technique
ITL504.5	To use Continuous Monitoring Tools to resolve any system errors (low memory, unreachable server etc.) before they have any negative impact on the business productivity
ITL504.6	To engineer a composition of nano services using AWS Lambda and Step Functions with the Serverless Framework

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_____Advanced Devops Lab__has performed the experiments /

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

S. P. Nehete	Dr. S. R. Kolhe	Dr. S. D. Sawarkar
Practical Incharge	**Head of Dept.**	**Principal**

Date 21.10.21

Examined on

Examiner 1_____**Examiner 2** _____

Datta Meghe College of Engineering, Airoli, Navi Mumbai	DEPARTMENT OF INFORMATION TECHNOLOGY
	List of Experiments **Subject: Advanced Devops Lab** **Code: ITL504**

Sr.No.	Name of the Experiment	CO Covered	Page No.	Date	Signature
1	To understand the benefits of Cloud Infrastructure and Setup AWS Cloud9 IDE, Launch AWS Cloud9 IDE and Perform Collaboration Demonstration.	LO1	1-15	7.7.21	
2	To Build Your Application using AWS CodeBuild and Deploy on S3 / SEBS using AWS CodePipeline, deploy Sample Application on EC2 instance using AWS CodeDeploy	LO1	16-52	14.7.21	
3	To understand the Kubernetes Cluster Architecture, install and Spin Up a Kubernetes Cluster on Linux Machines/Cloud Platforms.	LO1,LO2	53-55	14.7.21	
4	To install Kubectl and execute Kubectl commands to manage the Kubernetes cluster and deploy Your First Kubernetes Application.	LO1,LO2	56-60	28.7.21	
5	To understand terraform lifecycle, core concepts/terminologies and install it on a Linux Machine	LO1,LO3	61-65	11.8.21	
6	To Build, change, and destroy AWS / GCP /Microsoft Azure/ DigitalOcean infrastructure Using Terraform	LO1,LO3	66-75	11.8.21	
7	To understand Static Analysis SAST process and learn to integrate Jenkins SAST to SonarQube/GitLab	LO1,LO4	76-82	25.8.21	
8	Create a Jenkins CICD Pipeline with SonarQube / GitLab Integration to perform a static analysis of the code to detect bugs, code smells, and security vulnerabilities on a sample Web / Java / Python application	LO1,LO4	83-90	8.9.21	
9	To Understand Continuous monitoring and Installation and configuration of Nagios Core, Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux Machine	LO1,LO5	91-96	15.9.21	
10	To perform Port, Service monitoring, Windows/Linux server monitoring using Nagios	LO1,LO5	97-109	22.9.21	
	Assignment No1	LO1-LO6	110-118	27.7.21	
	Assignment No 2	LO1-LO6	119-130	7.9.21	