Final Attainment of 2016 Admitted Batch (Direct & Indirect)

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct Attainment		72.83	72.1	72.56	75.56	75.21	76.75	79.52	76.32	80.09	77.18	78.58	75.92	71.76	75.58	76.33
Indirect Attainment	**Exit Survey**	65.28	65.28	65.28	65.28	65.28	65.28	65.28	65.28	65.28	65.28	65.28	65.28	65.28	65.28	74
	Student Portfolio	68.15	68.15	65.02	65.02	83.8	44.5	40.8	43.73	60.33	83.8	68.15	68.15	68.15	68.15	51.35
Total Attainment		72.22	70.63	70.95	72.42	72.18	77.01	71.09	68.11	71.34	72.62	78.29	73.3	70.39	73.06	73.59
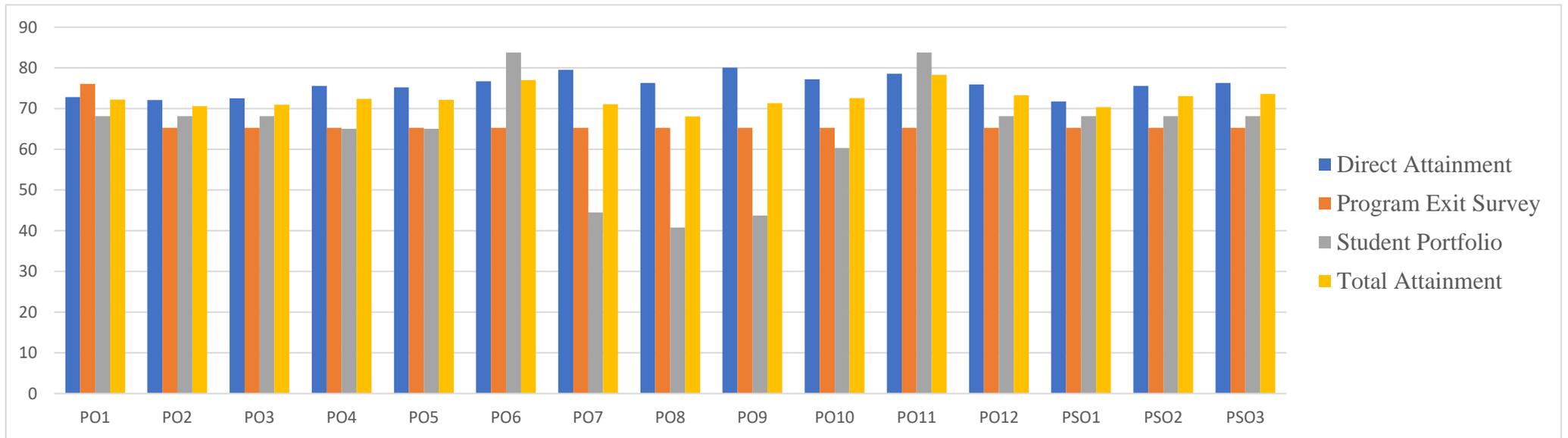
POs& PSOs Attainment Levels and Actions for improvement – AY 19-20(16-Batch)

PO	Target (%)	Attained (%)	Observation
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	71	72.22	• Target reached
Action1: To further improve the engineering knowledge, department will be included Skill Oriented Courses as per the feedback from various Stakeholders. **Action2:** Department is planning to conduct a various Hands-on session in emerging technologies. **Action3:** Virtual-Lab environment will be introduced to gain engineering knowledge through virtual simulators.			
PO	Target (%)	Attained (%)	Observation
PO2: Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	72	70.63	• Target not reached
Action1: For improving problem analysis skills among students, new courses are included like Mobile App Development, Ethical Hacking, Animation as per the suggestions from BOS members and industry representatives. **Action2:** Planning to conduct guest lectures by renowned academicians to strengthen problem solving skills for the students. **Action3:** Department will showcase, problem analysis through Virtual-Lab environment to our students.			
PO	Target (%)	Attained (%)	Observation
PO3: 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.			
PO3	73	70.95	• Target not reached
Action1: Department will ensure to further strengthen this PO, various new courses will be included viz. "Front-end webapp Design, React JS, Gaming using Python, Data Analytics and Visualization Lab". **Action2**: Our faculty members are trained in E-Box tool in problem solving through programming. **Action3:** The department will incorporate Virtual-Lab environment, to our students to design and develop new simulators for academic purpose that will enhance the students programming skills.			
PO	Target (%)	Attained (%)	Observation
PO4: 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.			
PO4	72	72.42	• Target reached
Action1: Department is initiate students to enrol into Advanced Skill-Oriented course like Web design using Django / Flask, Natural Language Processing Tool Kit, Cyber Security and publish papers and poster presentation on various latest trends in Computer Science and organized events accordingly, under the banner of "Association of Computer Geeks (ACG)", a student association of CSE. **Action2:** Department will showcase Virtual-Lab environment to our students.			
PO	Target (%)	Attained (%)	Observation
PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.			
PO5	72	72.18	• Target reached
Action1: For making students to more familiar with modern tools, the department will include Web design using Django / Flask, Natural Language Processing Tool Kit, Gaming using Python, Mobile App Development to develop real-time applications. **Action2:** Department will showcase all Virtual-Lab environment tools to our students. **Action3:** Planning to conduct various certification programs like Cisco, Microsoft, Amazon AWS.			
PO	Target (%)	Attained (%)	Observation

PO6: 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.

PO6	69	77.01	• Target reached

Action1: Courses like Engineer and Society, Universal Human Values, and Professional Communication will include to strengthening this PO. More practice is required in Professional Communication that improves the placements in the future.

Action2: Two courses are going to introduce viz. Professional Communication Skills; Management Science for Engineers are introduced to improve decision making skills of the students.

PO	Target (%)	Attained (%)	Observation

PO7: 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.

PO7	67	71.09	• Target reached

Action1: Directed the concerned faculty to put more focus on Environmental Science by giving assignments which may lead students to find Engineering solutions in this context.

PO	Target (%)	Attained (%)	Observation

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO8	74	68.11	• Target not reached

Action1: Directed concerned faculty of Engineer and Society and Universal Human Values courses to give some example scenarios which may happen in real world and notice student responses, to inculcate ethical values and social responsibilities.

PO	Target (%)	Attained (%)	Observation

PO9: Individual and teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9	69	71.34	• Target reached

Action1: To enhance Individual performance among students, department will be including courses like Skill development courses are introduced along with NPTEL.

Action2: Students will be directed to do theoretical and applied research in latest trends in computer science and engineering as a small group that enhance the teamwork and leadership qualities.

Action3: Students will be directed to implement various real-time projects that can be deployed in various domains.

PO	Target (%)	Attained (%)	Observation

PO10: 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.

PO10	74	72.62	• Target not reached

Action1: For improving Communication skills among students, department will include courses like "Professional Communication Skills-I and Professional Communication Skills-II" with the consideration of Employees from industry.

Action2: Students are ability to prepare a document for Projects, Seminars, Internship, and need to give presentation about the same.

PO	Target (%)	Attained (%)	Observation

PO11: 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.

PO11	70	78.29	• Target reached

Action1: For improving Project Management skills among students, the courses like "Management Science for Engineers" will be included based on the feedback from industry and academia.

PO	Target (%)	Attained (%)	Observation

PO12: 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.

PO12	62	73.3	• Target reached

Action1: Department will ensure that various new technologies are incorporated for upcoming regulations for making students to solve complex engineering problems using wide range of programming languages.

Action2: Department will constantly be encouraging registering NPTEL courses for further enhancement of theoretical and practical experience.

Action3: Will organize intra-department competitions and National Level Technical Symposiums (Lakshya in our campus).

Action4: Encouraging students to participate in various events organized in outside colleges/ Institutions.

PSO	Target (%)	Attained (%)	Observation
PSO1: Programming Paradigms: To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.			
PSO1	**69**	**70.39**	• Target reached

Action1: To improve the Programming paradigm, department will be introducing various new programming Languages to the upcoming batches that may enhance students to be industry ready. Few courses are going to include: - R Programming, Front-end webapp Design, Python Programming etc.

Action2: To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills among students the following courses are to be incorporated viz.,
- Computer Aided Engineering Drawing Lab
- Front-end webapp Design
- Data Analytics and Visualization Lab

PSO	Target (%)	Attained (%)	Observation
PSO2: Data Engineering: To inculcate an ability to Analyse, Design and implement data driven applications into the students.			
PSO2	**70**	**73.06**	• Target reached

Action1: To aware of data engineering domain, department will train the faculty and students together for enhancing their skills on real-time problems. The following courses will be incorporating to meet the industry requirements:
- Big Data Analytics
- Internet of Things
- Visual Analytics using Tableau or PowerBI
- Web design using Django / Flask
- Natural Language Processing Tool Kit

PSO	Target (%)	Attained (%)	Observation
PSO3: Software Engineering: Develop an ability to implement various processes/methodologies/practices employed in design, validation, testing and maintenance of software products.			
PSO3	**71**	**73.59**	• Target reached

Action1: Department will encourage in building a software product and their maintenance using latest technology over a cloud like "DevOps" that will strength the student's ability.

Action2: Department will provide a platform Students will be encouraged to undergo a training program to develop a secure software application and its life cycle.