



**POs Attainment Levels and Actions for improvement: Admitted Batch 2018-22  
A.Y:2021-22**

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-1. Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO 1	70	73	<p>The number of courses mapped to this PO1 is 65. The number of courses with formidable reach of target levels is 50, almost reached were 7, and 8 courses attainments were considerably less than the target levels. 17CI15- Automata Theory and Compiler Design(55), 17EC70- Microprocessors and Microcontrollers Lab(58),17CI66- Web Technologies Lab(60),17CI23-Artificial Intelligence(63),17CI29-Cloud Computing(64),17CI08- Design and Analysis of Algorithms(64),17CI64- Database Management Systems Lab(64),17FE06- Transformation techniques and vector calculus(65)</p> <p>After analysing results and interacting with students, it was attributed that still they need more practice (specially in Lab related courses) on problem solving with the help of mathematical logic/knowledge. For the benefit of students, need to demonstrate vividly more through practical examples for the courses having less attainment levels.</p>
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> Conducted one day Orientation Program on “Importance of engineering in the Society” on 28<sup>th</sup> June 2018 to improve the Engineering fundamentals and role of engineers in the current society.</p> <p><b>Action 2:</b> Conducted Alumni guest lecture related to Discipline -Career on “Job opportunity and higher education” on 6<sup>th</sup> and 14<sup>th</sup> May 2018 to give career guidance</p> <p><b>Action 3:</b> For the theory courses the faculty are instructed to give more assignments for the students.</p> <p><b>Action 4:</b> The faculties of the laboratory courses were advised to conduct more demonstration classes.</p>			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-2. Problem analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO 2	65	73	64 courses were mapped to this PO2. 55 courses including laboratory and theory target levels were comfortably reached. 4 courses have almost reached. Other 4 courses which were lagged to attain the target levels and have to be improved. The list of courses missing the targets with far-reach were 17CI15- Automata Theory and Compiler Design(56), 17EC70- Microprocessors and Microcontrollers Lab(59), 17CI29- Cloud Computing (59), 17CI66- Web Technologies Lab(60),. After analysis of results, it is observed that students are required to concentrate more on core subjects i.e. In GATE point of view. To strengthen PO2, need to add problem based learning courses in next curriculum.
<b>Action Taken:</b> <b>Action 1:</b> Conducted a four-day Python Workshop from 6th to 9th December, 2017 <b>Action 2:</b> To Strengthen coding & problem-solving skills one week training on problem solving using python from 6 <sup>th</sup> to 11 <sup>th</sup> Jan- 2020 <b>Action 2:</b> For the theory courses the faculty are instructed to give more assignments <b>Action 3:</b> The faculty of the laboratory courses were advised to conduct more demonstration classes.			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-3. Design/development of solutions:</b> 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.			
PO 3	65	73	60 courses are mapped to this PO3. Total 55 courses reached the targets. One Course was just at par to the target level. The target levels and attainment levels are considerably low for 4 courses. i.e., 17CI15- Automata Theory and Compiler Design (54), 17EC70- Microprocessors and Microcontrollers Lab (59), 17CI66- Web Technologies Lab (60), 17FE03- Environmental Science (61). After analysis of results, it is observed that students are doing laboratory experiments without enough preparation i.e., in terms of designing experiment, analysing & interpretation of results. Electronics related subjects are performing very poor. To improve the performance of students under innovative teaching and learning electronics courses with core concepts need to be strengthened

**Action Taken:**

**Action 1:** More number of classes/tutorials were conducted for the courses which are contributing design & development of solutions.

**Action 2:** Conducted a seminar on “SDLC & latest emerging trends in software industry” on 30<sup>th</sup> July 2020

**Action 3:** Conducted a three-day Workshop on “Industry Expectations on Data Engineers” on 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> of June 2021 to improve the research methods including design of experiments.

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-4. Conduct investigations of complex problems:</b> 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.			
PO 4	65	75	45 courses are mapped to this PO4. Out of 45 courses, 42 have attained. 3 course targets were just below the target level. 17CI23- Artificial Intelligence (58), 17EC70- Microprocessors and Microcontrollers Lab (59), 17MB80- Industrial Engineering & Management (62) After analysis of results, it is observed that students are feeling difficult to analyse the problem statements i.e., in, experimental designs and financial subjects. To strengthen PO4, more emphasis has to be given in teaching methodologies related to design & implementation of problem solving through programming

**Action Taken:**

**Action 1:** To improve practicality, Hands-on Sessions/Demonstration classes were conducted before executing the experiment.

**Action 2:** Conducted workshop on Python Programming 6<sup>th</sup> to 9<sup>th</sup> Dec 2017 to improve student's problem-solving and programming skills

**Action 3:** Conducted Two days' workshop on “Chat bots Using Python” on 7<sup>th</sup> and 8<sup>th</sup> of August 2020.

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-5. Modern tool usage:</b> 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.			
PO 5	65	72	Out of 70 courses, 38 courses are mapped to this PO5. Out of which 34 courses reached the target level. 2 courses were in and around the target levels where as 2 courses were missing the target attainments. After analysis 17EC70- Microprocessors & Microcontrollers Lab (59), 17CI66- Web Technologies Lab (60), were the courses which are missing the targets considerably. After analysis of results, it is observed that students are to be guided about the various tools implemented in industries in terms of designing experiment, analysing & interpretation of results. To Strengthen PO5, introduce more these courses have to include the tools of modern era which simplifies the web related implementation.

**Action Taken:**

**Action 1:** Tutorials were conducted for the courses which contributed less. In addition to that tutorial hours are handled by two faculty members.

**Action 2:** Conducted workshop on "5G Technologies" 7<sup>th</sup> Sep 2018 to improve the modern tool usage.

**Action 3:** Conducted Three Day Workshop on "IOT and 5G Technology" from 27 to 29<sup>th</sup> May 2021

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-6. The engineer and society:</b> 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.			
PO 6	60	78	Number of courses mapped to PO6 are 24. All the courses reached the target level comfortably. It is suggested to continue the necessary steps taken for the uplift of PO6 attainment levels.

**Action Taken:**

**Action 1:** Motivated the students by explaining the importance of doing internship & project work.

**Action 2:** The faculty are instructed to give practical examples relevant to engineering practices to enhance skills to handle problems in the societal context.

**Action 3:** The faculty are advised to allot a few topics for seminar related to society and the course content to present in the class room.

**Action 4:** Conducted Guest Lecture on "Influence of Technology in Financial Industry" 4<sup>th</sup> September 2018 to improve the practical knowledge on society demand.

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-7. Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO 7	60	76	11 courses mapped to this PO7. Target was reached by all the mapped courses except one course. i.e. 17HS01- Engineering Economics and Accountancy (59), which needs to be improved. As almost all the courses have reached the target comfortably, more courses which maps to this PO are to be added in the next curriculum.

**Action Taken:**

**Action 1:** The faculty are instructed to teach and give practical approach of the topics in view of long-term goals like environment and sustainability.

**Action 2:** It is advised to involve a greater number of students in the Environmental club activities.

**Action 3:** Inculcate the students to solve the problems on environmental oriented projects.

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-8. Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO 8	60	77	22 courses are mapped to this PO8. 20 of the total courses were comfortably reached the target levels. One course marginally missed out the target and another subject missed it with much lag. i.e. 17PD09- Internship (52), After analysis of results and interacting with students, additional efforts required to improve knowledge on professional ethics and moral values. Students are to advised to take up the internship which sustain ethical values. For the benefit of students, new courses related to ethical values are to be added in next curriculum.
<b>Action Taken:</b> <b>Action 1:</b> Faculty are advised to instruct the students about the importance of ethics in the engineering profession. <b>Action 2:</b> Motivate the students on real life case study problems to debate on ethical decision and judgments. <b>Action 3:</b> Faculty is advised to instruct students to follow ethical values while doing the programs, writing records and paper publications. <b>Action 4:</b> Conducted Alumni guest lecture on “Discipline and Career” 14 <sup>th</sup> May 2020 to learn Ethical values.			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-9. Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO 9	60	78	29 courses are contributing to PO9. Complete list of mapped courses had achieved target levels. After interacting with students, it was identified there should be more emphasis on project management and have to give clear picture regarding the software development process. Still there should be additional sessions required on development of team work skills. For the benefit of students introduce new course problem-based learning, in addition to that more association activity clubs are introduced in future.
<b>Action Taken:</b> <b>Action 1:</b> Awareness on leadership qualities was created by project assessment committee. <b>Action 2:</b> Create awareness on teamwork by preparing the posters. <b>Action 3:</b> Focus is given to motivate the students by conducting ICCIDE conference with in the Institution. So, most of the students actively involved in teams to make the event success. <b>Action 4:</b> Conducted association activities to improve the teamwork/leadership qualities and communication skills. <b>Action 5:</b> Organized National Level Technical Symposium “Lakshya 2K19” to improve the leadership qualities as well as teamwork of the students.			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-10. Communication:</b> 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.			
PO 10	60	76	30 courses were mapped to this PO10. Total 27 courses reached the target levels and for laboratory courses the attainment levels were just up to the mark. The other 3 Courses which were slightly less to target level were 17PD09- Internship(55), 17PD04- Mini Project(59), 17PD07- seminar (59). After interacting with students, it was identified that additional focus required on development of communication skills. To strengthen PO10 and to improve communication skills among students introduce new soft skills course in next curriculum.
<b>Action Taken:</b> <b>Action 1:</b> Group discussion / Role play/ Debate/ Quiz/Essay Writing competitions are encouraged at regular intervals. <b>Action 2:</b> Classes on communication and soft skills, analytical aptitude, and technical skills are arranged by the college every year apart from regular classes as per schedule. <b>Action 3:</b> Conducted association activities to improve the teamwork/leadership qualities and communication skills. <b>Action4:</b> Conducted National Level Online Technical Online Quiz Competition 3 <sup>rd</sup> June 2020. <b>Action5:</b> Conducted Awareness Program on “Cyber Crime” on 26-05-2021			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-11. Project management and finance:</b> 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.			
PO 11	60	76	PO11 is mapped with only 11 courses. Out of which all the courses reached the target comfortably. To strengthen PO11, need to introduce problem-based learning and problem assisted learning courses in next curriculum.
<b>Action Taken:</b> <b>Action 1:</b> Focus is given to motivate the students by explaining the importance of doing internship and project work. <b>Action 2:</b> Create awareness on project management by project evaluation committee. <b>Action 3:</b> Conducted association activities to improve the teamwork/leadership qualities & communication skills. <b>Action 4:</b> Conducted one day guest lecture on "Influence of Technology in Financial Industry" on 04-09-18 to enhance the knowledge on project and Industry financial related components. <b>Action 5:</b> Introduced plagiarism checking(40%) to Main Project to maintain the qualitative projects <b>Action 6 :</b> One day guest lecture on “Technical trends in IT and it's allied Industries” on 29 <sup>th</sup> Jan 2019			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-12. Life-long learning:</b> 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.			
PO 12	60	74	<p>62 courses are contributing to PO12. Totally 61 courses including theory and laboratory attained the target. Only one Courses missed the target level. i.e., 17CI15- Automata Theory and Compiler Design (55)</p> <p>After interacting with students, it was identified that additional focus required on development of programming skills. To strengthen PO12, need to introduce skill oriented and skill advanced courses in next curriculum.</p>
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> Conducted two-day workshop on digital marketing on 30<sup>th</sup> Aug and 31<sup>st</sup> Aug 2018 to enhance the employability skills of the students.</p> <p><b>Action 2:</b> Conducted Alumni Guest Lecture on placements on 06-05-2020 to create awareness on software Industry.</p> <p><b>Action 3:</b> Conducted one day workshop on SDLC and latest emerging trends in software industry on 30<sup>th</sup> June 2020</p>			

**Head Of The Department**

**Prof.B.SrinivasaRao**





**PSOs Attainment Levels and Actions for improvement: Admitted Batch 2018-22**  
**A.Y:2021-22**

PSOs	Target Level (%)	Attainment Level (%)	Observations
<b>PSO1:</b> Organize, Analyze and interpret the data to extract meaningful conclusions			
PSO 1	60	73	49 courses are contributing to PSO1.Total 48 courses including theory and laboratory have attained the target. One course which missed the target was 17CI15- Automata Theory and Compiler Design(55). Initiatives have to be taken to strengthen the analytical skills related to Automata and compiler designs. For the benefit of students, new courses related to the industry needs if any are to be added in next curriculum.
<b>Action Taken:</b> <b>Action 1:</b> Tutorial hours were made to handle by two faculty members. <b>Action 2:</b> The faculty of the laboratory courses who are just at the verge of attainment levels are advised to conduct more demonstration classes before attending laboratory. <b>Action 3:</b> Organized one day guest lecture on "Influence of Technology in Financial Industry" on 4 <sup>th</sup> Sep 2018 to create awareness on industrial requirements. <b>Action 4:</b> Three-day Workshop on “Industry Expectations on Data Engineers” from 04 <sup>th</sup> to 06 <sup>th</sup> June 2021			

PSOs	Target Level (%)	Attainment Level (%)	Observations
<b>PSO2:</b> Design, Implement and Evaluate a computer-based system to meet desired needs.			
PSO 2	65	72	49 courses are contributing to PSO2.Totally 44 courses including theory and laboratory attained the target. 45 Courses have failed to attain the target levels. Those subjects are 17CI15- Automata Theory and Compiler Design(56), 17CI66- Web Technologies Lab(60), 17CI08- Design Analysis of Algorithms (63), 17CI23- Artificial Intelligence(63), 17CI64- Database Management Systems Lab(64), After analysing the results and interacting with students, it was identified that additional focus required on development of problem analysis and solving skills. To strengthen PSO2 courses, which emphasise skill development through programming are to be taught with simulation tools.



**Action Taken:**

**Action 1:** More examples on R Programming are practiced by students in R- Laboratory courses.

**Action 2:** The faculty of the laboratory courses who failed to attain the target are instructed to demonstrate experiments using video lectures in order to motivate students.

**Action 3:** Organized Two-day Workshop on Python Programming, APSSDC, 7th to 9<sup>th</sup> Dec 2017.

**Action 4:** A two-week summer Internship Training program is conducted on "Python for everybody" on from 14<sup>th</sup> -27<sup>th</sup> May 2019

PSOs	Target Level (%)	Attainment Level (%)	Observations
<b>PSO3:</b> Develop IT application services with the help of different current engineering tools.			
PSO 3	65	72	48 courses are contributing to PSO3. Totally 44 courses including theory and laboratory attained the target. 4 Courses failed to attain i.e., 17CI15- Automata Theory and Compiler Design (55), 17CI66- Web Technologies Lab (60), 17CI08- Design and Analysis of Algorithms (63), 17CI23- Artificial Intelligence (63) To strengthen PSO3 new practical oriented courses, with the usage of advanced tools are to be added in next curriculum.
<b>Action Taken:</b>			
<b>Action 1:</b> The faculty of courses whose target were low are instructed to conduct more tutorials to improve the performance.			
<b>Action2:</b> To improve the development and Programming skills a <b>workshop</b> is conducted on Web Trends on 13 <sup>th</sup> Dec 2017.			
<b>Action 3:</b> A two-day Workshop on “Digital Marketing” is conducted on 29 June 2018			
<b>Action 4 :</b> A week day is conducted workshop on Blockchain Technology from 17 <sup>th</sup> Jun 2021 to 19 <sup>th</sup> June, 2021			

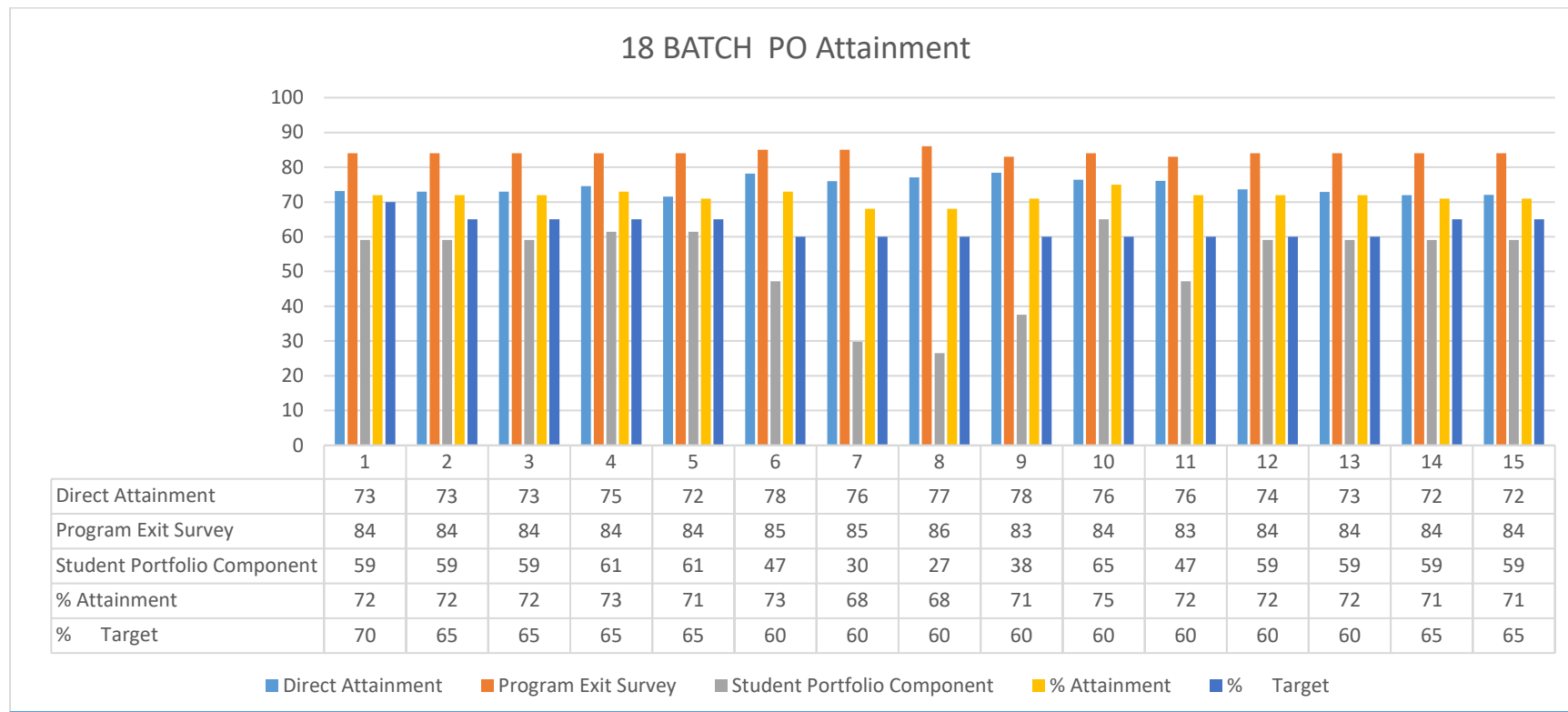
*Table B.7.1POs & PSOs Attainment Levels and Actions for improvement*

**Head Of The Department**

**Prof.B.SrinivasaRao**

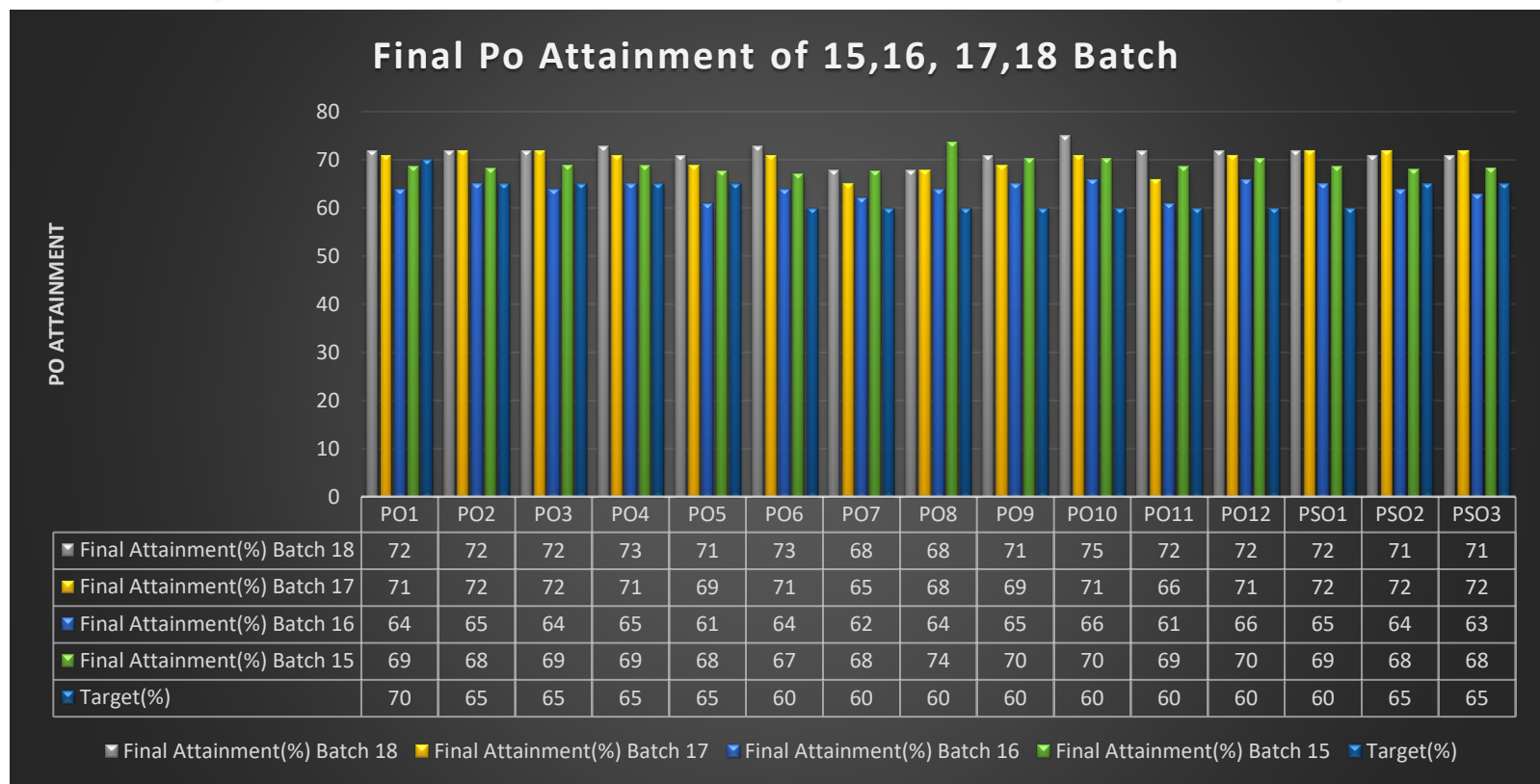


### Observations and Action Taken Report:



**Head Of The Department**

**Prof.B.SrinivasaRao**



It is observed that the skills of admitted graduates of 2017-21 batch were improved in the following PO's i.e., PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PSO1, PSO2 and PSO3 when compared to 2016-20 batch.

**Head Of The Department**

**Prof.B.SrinivasaRao**