



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

Attainment of Program Outcomes (POs) of 2022 - 2024 batch (IARE -PG21)

| Course Code | Course | Program Outcomes (POs) | | | | | |
|--------------------------------|--|------------------------|------------|------------|------------|------------|------------|
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
| BAEC01 | Space Propulsion | 2.00 | | 2.50 | 2.40 | 2.30 | |
| BAEC02 | Advanced Mathematics in Aerospace Engineering | | | 1.20 | 1.20 | 1.10 | |
| BAEC06 | Automatic Control of Aircraft | 2.60 | 2.50 | | 2.10 | | |
| BAEC07 | Unmanned Aerial Vehicles | 2.50 | | 2.60 | 2.30 | 2.90 | |
| BAEC11 | Advanced Computational Aerodynamics Laboratory | 2.40 | | 2.40 | 2.40 | 2.40 | |
| BAEC12 | Computational Aerospace Engineering Laboratory | | | 3.00 | 3.00 | 3.00 | |
| BAEC13 | Flight Dynamics and Control | 1.10 | | 1.10 | | | |
| BAEC14 | Engineering Analysis of Flight Vehicles | | | 1.30 | 1.30 | | |
| BAEC16 | Rocket and Missile | 1.20 | | 1.20 | 1.10 | 1.20 | |
| BAEC19 | Atmospheric re entry Vehicles | 1.70 | | 1.60 | 1.30 | 0.90 | |
| BAEC23 | Flight Simulation and Controls Laboratory | 3.00 | | 3.00 | 3.00 | 3.00 | |
| BAEC24 | Advanced Computational Structures Laboratory | 0.90 | | 0.90 | 0.90 | 0.90 | |
| BAEC25 | Mini Project with Seminar | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| BHSC11 | Research Methodology and IPR | 1.00 | 1.10 | | 1.20 | 1.00 | 0.90 |
| BAEC28 | Airport Planning and Operations | 2.30 | | 2.30 | 1.80 | 2.60 | 2.50 |
| BPSC30 | Waste to Energy | 0.80 | 1.10 | 0.90 | | 0.70 | |
| BAEC31 | Phase - I Dissertation | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| BAEC32 | PHASE - II DISSERTATION | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 |
| Direct Attainment Value | | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 |

Overall Attainment

| S. No | Assessment Components (Direct + Indirect) | Program Specific Outcomes (PSOs) | | | | | |
|---|---|----------------------------------|------------|------------|------------|------------|------------|
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
| 1 | Direct Assessment (CIA + SEE + Course End Survey) (a) | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 |
| 2 | Program Exit Survey (b) | 2.2 | 2.2 | 2.1 | 2.2 | 2.2 | 2.1 |
| 3 | Alumni Survey (c) | 2.2 | 2.2 | 2.1 | 2.2 | 2.2 | 2.1 |
| 4 | Employer Survey (d) | 2.3 | 2.1 | 1.9 | 2.4 | 2.3 | 2.2 |
| Final attainment = a*0.8 + b*0.1 + c*0.05 + d*0.05 | | 1.9 | 1.8 | 1.9 | 1.9 | 1.9 | 1.8 |

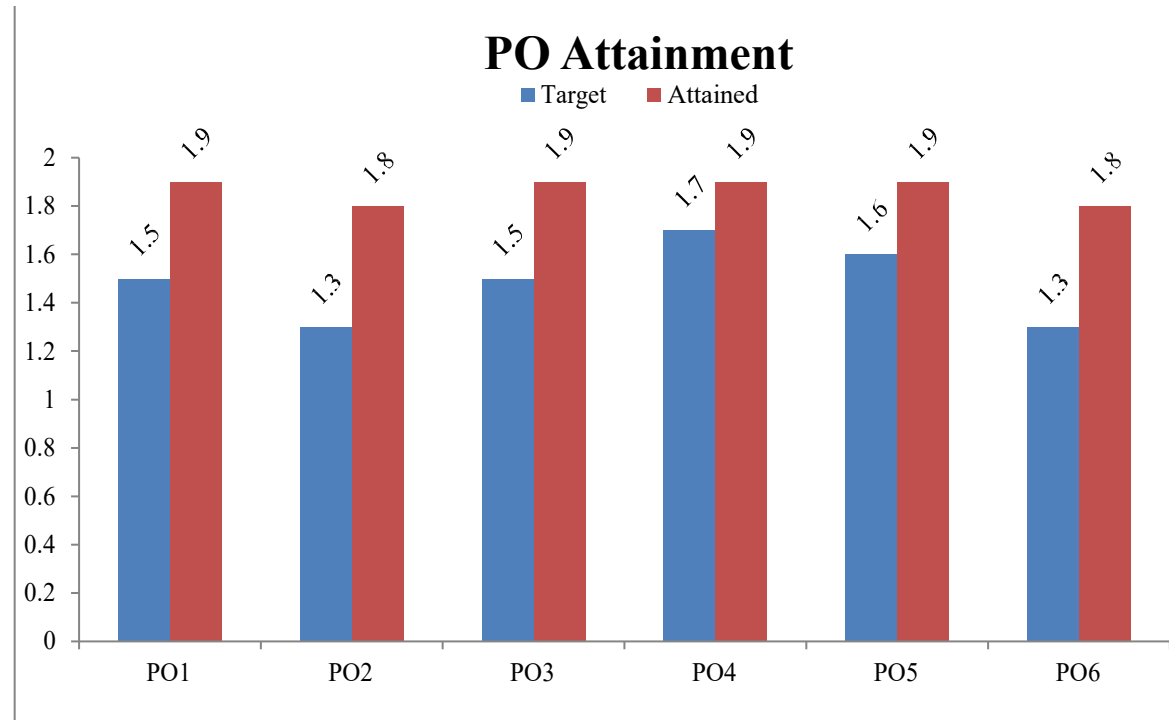
Action taken to improve the attainment of POs :

| POs | Target Level | Attainment Level | Observation |
|---|--------------|------------------|---|
| PO1: Engineering Knowledge: Independently carry out research /investigation and development work to solve practical problems. | | | |
| PO1 | 1.5 | 1.9 | Target achieved. Following courses were identified which didn't meet the attainment target BAEC13, BAEC16, BAEC24, BAEC25, BHSC11, BPSC30 |
| Action: | | | |
| <ol style="list-style-type: none"> Students are encouraged to join NPTEL courses for developing an enhance problem-solving abilities, and gain deeper insights into technical subjects through quality online education. Guest lectures and expert talk to be conducted to enrich the industry-oriented engineering knowledge. | | | |
| PO2: Problem analysis: Write and present a substantial technical report / document. | | | |
| PO2 | 1.3 | 1.8 | Target achieved. Following courses were identified which didn't meet the attainment target BAEC25, BHSC11, BPSC30 |
| Action: | | | |
| <ol style="list-style-type: none"> Expert talk and Academic workshops will be conducted to improve the knowledge on experiments and analysis of results. Students for careers in aerospace industries, defense organizations, and research institutes specializing in flight control systems and guidance technologies. Students are encouraged to participate in workshops and seminars for developing an analytical mind which can work towards problem solving. | | | |

| | | | |
|--|------------|------------|---|
| PO3: Design/development of solutions: Demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program. | | | |
| PO3 | 1.5 | 1.9 | Target achieved. Following courses were identified which didn't meet the attainment target BAEC02, BAEC13, BAEC14, BAEC16, BAEC24, BAEC25, BPSC30 |
| Action: 1. Dedicated workshops, hands-on simulation sessions, and expert lectures are regularly organized. 2. Students are trained in the modeling, simulation, and analysis of aircraft and spacecraft dynamics, as well as the design of control systems for stability and performance improvement. | | | |
| PO4: Conduct investigations of complex problems: Identify, formulate, analyze and Design complex engineering problems, and design system components or processes by applying appropriate advanced principles of engineering activities and using modern tools. | | | |
| PO4 | 1.7 | 1.9 | Target Achieved. Following courses were identified which didn't meet the attainment target BAEC02, BAEC14, BAEC16, BAEC19, BAEC24, BAEC25, BHSC11, BAEC28 |
| Action: 1. Expert talk and Academic workshops will be conducted to improve the knowledge on experiments and analysis of results. 2. Research based Courses will be included, syllabi to be updated to include and inculcate the analysis, research skills. | | | |
| PO5: Modern tool usage: Engage in life-long learning and professional development through self-study and continuing education in understanding the engineering solutions in global and management principles to manage projects in multidisciplinary environments. | | | |
| PO5 | 1.6 | 1.9 | Target not achieved. Following courses were identified which didn't meet the attainment target BAEC02, BAEC16, BAEC19, BAEC24, BAEC25, BHSC11, BPSC30 |
| Action: 1. Practical understanding of Rocket and Missile Technology with specialized lectures, workshops, and simulation-based projects are regularly conducted. 2. Students are encouraged to work on case studies, computational simulations, and performance analysis using advanced software tools. 3. Students in the area of Re-entry Vehicles, focused workshops, seminars, and project-based learning sessions are regularly organized | | | |
| PO6: The Engineer and Society: Function effectively as a member or leader in diverse teams to carry out development work, produce solutions that meet the specified needs with frontier technologies and communicate effectively on complex engineering activities. | | | |
| PO6 | 1.3 | 1.8 | Target Achieved. Following courses were identified which didn't meet the attainment target BAEC25, BHSC11 |

Action:

1. Students are encouraged to undertake innovative projects related to aerospace engineering domains such as aerodynamics, propulsion, structures, flight dynamics, UAVs, rockets, and space technology.
2. Students apply theoretical knowledge to solve real-world engineering problems, develop computational models or prototypes, and present their findings in a seminar format.
3. The initiative aims to improve their analytical thinking, communication skills, and research methodology, preparing them for industry roles, higher studies, and research careers.



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