INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Attainment of Program Outcomes (POs) of 2020 - 2022 batch (IARE - R18)

Course Code	Course	Program Outcomes (POs)					
		PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
BCSB01	MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE	1.30			1.30	1.30	1.40
BCSB02	ADVANCED DATA STRUCTURES	1.10			1.10	1.10	1.20
BCSB04	WIRELESS SENSOR NETWORKS	1.20			1.30	1.30	1.20
BCSB06	DATA SCIENCE	1.30		1.30	1.30	1.30	1.30
BCSB09	ADVANCED DATA STRUCTURES LABORATORY	3.00		3.00	3.00	3.00	
BCSB10	DATA SCIENCE LABORATORY	3.00		3.00	3.00	3.00	3.00
BCSB11	CYBER SECURITY	2.40		2.00	2.40	2.40	2.40
BCSB12	SOFT COMPUTING	2.80			2.80	2.80	
BCSB13	DATA PREPARATION AND ANALYSIS	2.70			2.70	2.70	
BCSB16	HUMAN AND COMPUTER INTERACTION	2.80		2.80	2.80	2.80	2.80
BCSB19	SOFT COMPUTING LABORATORY	3.00	3.00	3.00	3.00	3.00	3.00
BCSB20	DATA PREPARATION AND ANALYSIS LABORATORY	3.00	3.00	3.00	3.00	3.00	3.00
BCSB21	MINI PROJECT WITH SEMINAR	3.00	3.00	3.00	3.00	3.00	3.00
BCSB31	RESEARCH METHODOLOGY & IPR	2.50	2.50	2.40	2.20	2.60	2.50
BCSB22	MOBILE APPLICATIONS AND SERVICES	2.20		2.20	2.10	2.00	2.20
BCSB30	WASTE TO ENERGY	1.50				1.60	
BCSB40	PHASE - I DISSERTATION	3.00	3.00	3.00	3.00	3.00	3.00
Attainment Values		**2.3**	**2.9**	**2.6**	**2.4**	**2.3**	**2.3**

PO Attainment Overall

S.No	Assessment Components (Direct + Indirect)	Program Outcomes (POs)					
		PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
1	Direct Assessment (CIA + SEE + Course End Survey) (a)	2.3	2.9	2.6	2.4	2.3	2.3
2	Program Exit Survey (b)	0.6	2.1	2.1	1.5	1.2	2.7
3	Alumni Survey (c)	1.8	2.4	1.8	3.0	1.2	2.7
4	Employer Survey (d)	2.2	2.3	2.6	2.5	2.6	2.5
Final attainment = a*0.8 + b*0.1 + c*0.05 + d*0.05		**2.1**	**2.8**	**2.5**	**2.3**	**2.2**	**2.4**

POs Attainment Levels and Actions for improvement:

S No.	POs	Target value for 2020-2022 PO Attainment	Overall PO Attainment Value from Direct and Indirect Assessment	Status
1	PO 1	2.1	2.1	**Attained**
2	PO 2	2.1	2.8	**Attained**
3	PO 3	2.1	2.5	**Attained**
4	PO 4	2.1	2.3	**Attained**
5	PO 5	2.1	2.2	**Attained**
6	PO 6	2.1	2.4	**Attained**

All POs are attained.

Sustained efforts are made to ensure continuous attainment by monitoring the resources and processes. The following actions were taken to enhance the target level. The attainment of POs and action taken for improvements in attainments for 2020-2022 isillustrated in table

POs	Target Level	Attainment Level	Observations
PO1: Independently carry out research/investigation and development work to solve practical problems			
PO1	**2.1**	**2.1**	Overall attainment of PO1 Target is Achieved. Computer Science and Engineering curriculum has a strong foundation of practical and theoretical knowledge of own engineering principles. However, students need to know in correlating the theoretical concepts with practicalapplications of courses Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks, Data Science and Energy from Waste are required. The following actions were taken to enhance the target level.
Action 1: Critical thinking problems are incorporated in the Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks, Data Science and Energy from Waste courses. **Action 2:** Introduction of research labs for recent trend of CSE includes AR/VR Lab and Research Methodology Lab which impacts the curriculum and also research. **Action 3:** Faculty research with PG students has improved overall PO1 attainment			
PO2: Write and present a substantial technical report/document			
PO2	**2.1**	**2.8**	Overall attainment of PO2 reached to the target level. The communication, presentation, and report writing skills need to be more focused on respective theory and laboratory tasks. The following actions were taken to enhance the target level.
Action 1: More assessment methods are incorporated to enhance oral communication in theory courses through seminars and Project Review Meetings. **Action 2**: Soft skills training is imparted to enhance various aspects of communication by group discussions, presentations and new learning outcomes. **Action 3**: Demonstration of experiment and viva are incorporated in laboratory day to day assessment.			

PO3: Demonstrate a degree of mastery in computer science and engineering emerging areas such as data science, cyber security, and application development.			
PO3	**2.1**	**2.5**	Overall attainment of PO3 reached to the target level in most of the core courses. Students are encouraged to learn, practice and make use of appropriate modern tools in emerging areas of Computer Science and Engineering through trainings, workshops and internships. More focus on data science course is required. The following actions were taken to enhance the target level.
Action 1: Students are instructed to learn and use the open source and modern tools of emerging areas of CSE in implementation of projects and participation in hackathons. **Action 2:** Faculty are encouraged to identify course specific modern tools and encouraged to use in their regular course work of data science and cyber security.			
PO4: Apply advanced-level knowledge, techniques, skills, and modern tools in the field of computer science and engineering and its allied areas for solving real-time problems.			
PO4	**2.1**	**2.3**	Overall attainment of PO4 reached to the target level in most of the core courses. The focus on usage of research-based methods in solution for complex engineering problems with innovations are required in the courses like Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks and Data Science. The following actions were taken to enhance the target level.
Action 1: Critical thinking problems/ query exercises are incorporated in the courses includes Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks, Data Science. **Action 2:** Students are encouraged to participate in coding challenges, Hackathons and various online coding contests. **Action 3:** Students are motivated to participate actively in research-based learning activities, ideation and product development to nurture theirideas along with complex problem-solving skills.			
PO5: Function effectively in multidisciplinary environments with the knowledge of frontier technologies by working cooperatively, creatively, and responsively as a member or leader in diverse teams.			
PO5	**2.1**	**2.2**	Overall attainment of PO5 reached to the target level in all the courses. Few courses like Seminars and Project work inculcate the habit of individual and team contributionstowards the development of the multi-disciplinary projects. More focus required on the courses like Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks, Data Science and Energy from Waste The following actions were taken to enhance the target level.

Action 1:
Students are advised to form multidisciplinary groups in participations of hackathons and project expos related to courses like Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks, Data Science and Energy from Waste.

Action 2:
Students are encouraged to develop projects, in which global and environmental issues are addressed.

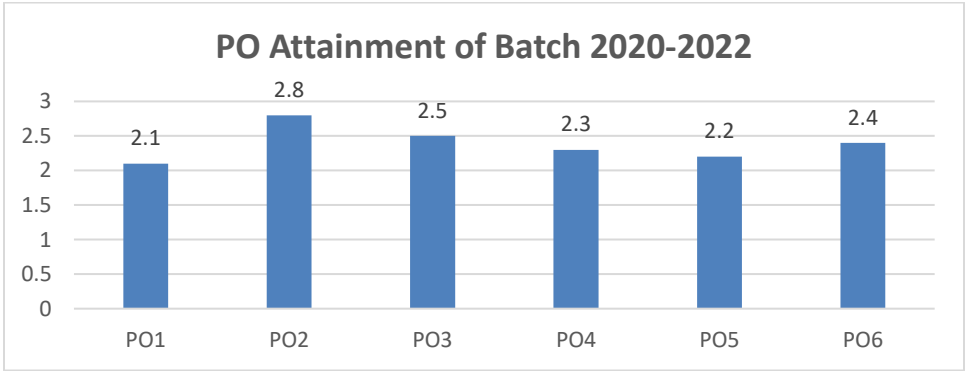
PO6: Engage in life-long learning for continuing education in doctoral-level studies and professional development.

PO6	**2.1**	**2.4**	Overall attainment of PO6 reached to the target level. More focus required on the courses like Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks, Data Science. The following actions were taken to enhance the target level.

Action 1:
Students are recognized the importance of self-learning and completed certifications and MOOC courses (NPTEL, CISCO, Udemy etc.) on the latest technologies and the courses like Mathematical Foundations of Computer Science, Advanced data structures, Wireless Sensor networks, Data Science.

Action 2:
Faculty are utilizing the available digital learning facilities in the form of videos (NPTEL, ELRV, Coursera etc.), software tools, to be on par with the recent trends.

Action 3:
Students are encouraged to take topics from magazines and journals for seminar and video topics, research-oriented projects, refer research literature and present or publish their work.



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