Vasavi College of Engineering (Autonomous)
Criteria 7
Institutional Distinctiveness and Best Practices

Best practices:

7.2.1 Provide the web link on the Institutional website regarding the Best practices as per the prescribed format of NAAC: Academic Year: 2023-2024

Title of the Practice: #1

Stream Based Open Electives

Objectives of the Practice:

Offering Stream-Based Open Electives can enhance students' learning experience by providing them with flexibility and exposure to a variety of domains. These electives allow students to select courses that align with their interests, career goals, and future trends in technology. Below are key objectives for introducing stream-based open electives:

- Enhance Interdisciplinary Learning
- Promote Specialization and Skill Development
- Foster Innovation and Creativity
- Enhance Employability and Industry Relevance
- Encourage Lifelong Learning
- Provide Flexibility in Course Selection
- Promote Critical Thinking and Problem-Solving

The Context:

In the rapidly evolving world of technology and engineering, the traditional, discipline-specific curriculum may no longer fully meet the dynamic needs of students and industries. Engineering colleges are faced with the challenge of equipping students with a broad, flexible education that allows them to specialize in specific fields of interest while gaining exposure to interdisciplinary concepts. This challenge is particularly important as industries continue to undergo digital transformation, with interdisciplinary skills becoming increasingly essential.

Offering Stream-based Open Electives (SBOEs) provides an effective solution to these challenges, offering students the freedom to select courses from a variety of engineering disciplines outside their core department. This shift from rigid curricula to flexible, student-driven choices promotes a deeper and more holistic learning experience. Stream based Open Electives enable the students to expertise in the stream they have adopted.

The Practice:

List of Open electives offered in 2023-24 for both even and odd:

Name of the Branch	Stream	III Semester (2 Credits)	IV Semester (3 Credits)	V Semester (3 Credits)	VI Semester (3 Credits)
CIVIL	Smart Cities	Smart Cities Planning & Development /Smart Infrastructure and Sustainable Cities	Green Buildings	Intelligent Transport Systems	Integrated Waste Management
	Technologies in Civil Engineering	Artificial Intelligence and Machine Learning applications of Civil Engineering	Spatial Information Technologies	Digital Land Surveying & Mapping	Sensor Technology Applications in Civil Engineering
	Infrastructure Management	Project Management	Infrastructure Planning & Development	Solid Waste Management	Spatial Information Technologies
CSE	Programming and Databases	Principles of Python Programming	Fundamentals of Object Oriented Programming	Introduction to Databases	Web Design
	Systems and Applications	Principles of Python Programming	Cyber Security	Introduction to Operating Systems	Introduction to Software Engineering

ECE	IoT Stream	Sensors for Engineering Applications	Introduction to Microcontrollers and Applications	Introduction to IoT and Applications	Introduction to Industrial IoT
	Communication Engineering Stream	Introduction to Signals and Systems	Introduction to Principles of Communication Engineering	Introduction to Communication Systems	Introduction to Mobile and Cellular Communication
MECH	Unmanned Aerial Vehicles	Introduction to Unmanned Aerial Vehicles	Design Principles of UAVs	UAV Propulsion and Analysis	UAV Control Systems and Autonomy
	Robotics	Introduction to Industrial Robotics	Kinematics and Dynamics of Robotics	Drives and Control Systems for Robotics	Industry 4.O
I.T	AI&ML	Joy of Computing using Python	Essentials Mathematics using Python	Introduction to Artificial Intelligence	Introduction to Machine Learning
	Security & Block Chain	Introduction to Database Management Systems	Cryptography & Network Security	Distributed Databases	Block Chain
	Data Science	R-Programming	Introduction to Data Analytics	Data Analytics & Visualization (tableau)	Big Data & Applications (Hadoop, Spark, Hive)
MATHS	Mathematics OE	Linear Algebra & Its Applications (CE, EEE, ECE &ME) Complex Variables (CSE, CSE(AIML) & IT)	Numerical Methods / Computational Methods (CSE, CSE(AIML) & IT)	Integral Transforms (CSE, CSE(AIML) & IT)	Critical Reasoning

PHYSICS	Materials Science for Engineers(MSE)	Fundamentals Of Materials Science	Synthesis and Properties of Materials	Material Characterization Techniques	Functional Materials and Applications
	Semiconductor Physics and Device Applications(SPDA)	Essentials of Semiconductor Physics	Basic Semiconductor Devices	Advanced Semiconductor Devices	Optoelectronic Devices
CHEM	Materials for Engineers	Polymeric materials	Properties and Characterization methods for polymers	Composite Materials	Advanced engineering materials
M/s.Talent sprints	Higher Order Thinking Skills		Critical Thinking	Problem Solving and Decision Making in Engineering	
	Building Digital Presence		Technical Writing and Powerful Presentations	Digital Branding and Professional Presence for Engineers."	
	The Design Thinker's Toolkit			Design Thinking	Design Sprint: Rapid Prototyping and User Testing.
	Rationality Roadmap			Critical Reasoning	Advanced Logical Reasoning and Analytical Thinking

III Semester

Students Choice among the 18 open elective courses which include 6 Stream based Open Electives:

Course Name	GB	PEP	CV	IPP	MPE	CUP	FPP	LL	NCES	FUAV	IIR	CI	ML	ISS	LA	ESP	MEPM	SMA	Total
(Dept. Name)	(Civil)	(CSE)	(Maths)	(CSE)	(ECE)	(IT)	(IT)	(HSS)	(EEE)	(Mech)	(Mech)	(HSS)	(HSS)	(ECE)	(Maths)	(Phy)	(Chem)	(Phy)	
1st Preference	211	198	93	73	55	42	40	33	33	30	22	15	14	12	6	0	0	0	877
1 Preference	211	198	93	73	55	42	40	33	33	30	22	15	14	12	6	0	0	0	877
2 Preference	119	84	83	79	45	165	59	29	73	68	22	19	11	11	1	3	3	3	877
3 Preference	68	46	70	159	57	57	58	50	88	76	42	25	31	20	16	7	3	4	877
4 Preference	44	30	28	80	103	39	150	57	127	59	33	40	32	11	9	4	20	11	877
5 Preference	93	13	30	22	97	18	34	67	117	90	56	61	52	29	36	10	24	28	877
6 Preference	58	20	19	19	60	26	15	83	66	83	105	81	68	32	29	7	55	51	877
7 Preference	54	14	17	7	47	46	27	81	89	72	64	88	61	40	26	14	51	79	877
8 Preference	40	10	21	3	32	12	39	106	63	72	65	81	92	31	29	13	78	90	877
9 Preference	30	7	10	3	33	13	11	98	41	62	82	73	86	47	89	23	76	93	877
10 Preference	27	7	19	3	32	13	10	81	32	40	78	73	72	65	76	55	113	81	877
11 Preference	16	4	17	5	35	8	4	87	17	38	80	96	71	44	43	51	164	97	877
12 Preference	12	11	13	1	36	6	4	55	26	22	64	110	123	78	40	31	186	59	877
13 Preference	24	9	0	1	24	5	5	31	23	20	18	94	85	0	29	23	42	24	457
14 Preference	25	4	0	2	14	7	1	19	14	19	20	21	79	0	28	9	62	7	331
Total	821	457	420	457	670	457	457	877	809	751	751	877	877	420	457	250	877	627	11312

GB (Civil) : Green Buildings (GP)	PEP (CSE) : Programming Essentials in Python (SB)	CV (Maths) : Complex Variables (GP)
IPP (CSE) : Introduction to Python Programming (GP)	MPE (ECE) : Mathematical Programming for Engineers (GP)	CUP (IT) : Computing Using Python (SB)
FPP (IT) : Fundamentals of Python Programming (GP)	LL (HSS) : Learning to Learn (GP)	NCES (EEE) : Non Conventional Energy Sources (GP)

FUAV (Mech) : Fundamentals of Unmanned Aerial Vehicles (GP)	IIR (Mech) : Introduction to Industrial Robotics (SB)	CI (HSS) : Constitution of India (GP)
ML (HSS) : Mastering Leadership (GP)	ISS (ECE) : Introduction to Signals and Systems (SB)	LA (Maths) : Linear Algebra (GP)
ESP (Phy) : Essentials of Semiconductor Phy (SB)	MEPM (Chem) : Polymeric Materials (SB)	SMA (Phy) : Smart Materials and Applications (GP)

BE – III Sem. Branch Wise Allotment - Acad. Year – 23-24

S.No	Course Name	CSE	ECE	EEE	Mech	Civil	IT	AIML	Total
1	Green Buildings (GP)	46	10	5	13	0	105	32	211
2	Programming Essentials in Python (SB)	0	79	31	65	23	0	0	198
3	Complex Variables (GP)	34	0	0	0	0	38	21	93
4	Introduction to Python Programming (GP)	0	43	13	9	8	0	0	73
5	Mathematical Programming for Engineers (GP)	38	0	0	0	0	12	5	55
6	Computing Using Python (SB)	0	18	7	12	5	0	0	42
7	Fundamentals of Python Programming (GP)	0	29	5	6	0	0	0	40
8	Learning to Learn (GP)	0	5	5	11	4	7	1	33
9	Non Conventional Energy Sources (GP)	7	0	0	1	2	21	2	33
10	Fundamentals of Unmanned Aerial Vehicles (GP)	1	7	0	0	7	11	4	30
11	Introduction to Industrial Robotics (SB)	4	12	0	0	2	2	2	22
12	Constitution of India (GP)	2	2	1	3	0	7	0	15
13	Mastering Leadership (GP)	3	0	0	3	5	3	0	14
14	Introduction to Signals and Systems (SB)	6	0	0	0	0	5	1	12
15	Linear Algebra (GP)	0	2	1	3	0	0	0	6
16	Essentials of Semiconductor Phy (SB)	0	0	0	0	0	0	0	0
17	Polymeric Materials (SB)	0	0	0	0	0	0	0	0
18	Smart Materials and Applications (GP)	0	0	0	0	0	0	0	0
	Total	**141**	**207**	**68**	**126**	**56**	**211**	**68**	**877**

BE – III Sem. Branch Wise and Pref. Wise Allotted List - Acad. Year – 23-24

S.No	Course Name	CSE				ECE				EEE				Mech				Civil				IT				AIML				Total
		1	2	3	4..	1	2	3	4..	1	2	3	4..	1	2	3	4..	1	2	3	4..	1	2	3	4..	1	2	3	4..	
1	Complex Variables(GP)	34	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	14	1	0	21	9	2	0	122
2	Green Buildings(GP)	23	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	32	0	0	0	13	0	0	0	72
3	Programming Essentials in Python(SB)	0	0	0	0	30	0	0	0	6	0	0	0	26	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	72

4	Introduction to Python Programming(GP)	0	0	0	0	43	0	0	0	13	0	0	0	9	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	72
5	Mathematical Programming for Engineers(GP)	38	4	0	0	0	0	0	0	0	0	1	1	0	0	1	2	0	0	2	0	12	5	1	0	5	0	0	0	72
6	Computing Using Python(SB)	0	0	0	0	18	15	0	0	7	5	0	0	12	9	0	0	5	1	0	0	0	0	0	0	0	0	0	0	72
7	Fundamentals of Python Programming(GP)	0	0	0	0	29	0	4	5	5	1	7	1	6	2	3	6	0	1	0	2	0	0	0	0	0	0	0	0	72
8	Learning to Learn(GP)	0	2	0	1	5	0	0	3	5	1	0	2	12	1	1	12	4	0	0	1	8	10	1	0	1	0	1	2	73
9	Non Conventional Energy Sources(GP)	7	11	0	0	0	2	0	0	0	0	0	0	1	3	0	0	2	0	0	0	21	22	0	0	2	1	0	0	72
10	Fundamentals of Unmanned Aerial Vehicles(GP)	1	7	0	0	7	4	1	2	0	1	0	1	0	0	0	0	7	0	0	1	11	13	1	1	4	3	1	0	66
11	Introduction to Industrial Robotics(SB)	4	1	0	0	12	1	4	15	0	3	2	3	0	0	0	0	2	0	4	1	2	3	0	0	2	0	0	0	59
12	Constitution of India(GP)	2	0	0	0	2	1	0	3	1	1	0	0	3	0	0	6	0	0	0	1	6	4	1	0	0	0	0	0	31
13	Mastering Leadership(GP)	3	0	0	0	0	0	0	1	0	0	0	0	3	1	0	4	5	0	0	0	3	1	0	0	0	1	0	0	22
Total		112	28	0	1	146	23	9	29	38	12	10	8	75	16	5	30	42	2	6	6	133	72	5	1	48	14	4	2	877

BE – IV Sem OE Preferences (12 Courses – 23-24)

Course Name	NM	SPA	SWM	MCAP	OOPJ	BJP	EMMLUP	KDR	CT	TWPP	OR	SEA	Total
(Dept. Name)	(Maths)	(EEE)	(Civil)	(CSE)	(IT)	(CSE)	(IT)	(Mech)	(HSS)	(HSS)	(Mech)	(ECE)	
1st Preference	177	159	156	83	76	68	64	36	33	10	5	3	870
1 Preference	177	159	156	83	76	68	64	36	33	10	5	3	870
2 Preference	42	176	226	7	58	61	16	0	41	38	8	38	711
3 Preference	85	170	145	28	23	38	6	0	56	60	40	60	711
4 Preference	14	73	44	13	21	29	28	0	78	94	91	226	711
5 Preference	38	39	34	8	25	32	13	0	101	113	194	114	711
6 Preference	13	17	23	13	38	37	13	0	155	220	124	58	711
7 Preference	46	14	17	15	50	27	18	0	195	137	123	69	711
8 Preference	0	14	7	24	2	1	19	0	16	32	17	12	144
9 Preference	0	3	25	17	3	3	26	0	36	7	20	4	144
10 Preference	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Preference	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Preference	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	415	665	677	208	296	296	203	36	711	711	622	584	5424

NM (Maths) : Numerical Methods (GP)	SPA (EEE) : Solar Power and Applications (GP)	SWM (Civil) : Solid Waste Management (GP)
MCAP (CSE) : Mathematical Computing for AIML with Python (SB)	OOPJ (IT) : Object Oriented Programming Using JAVA (GP)	BJP (CSE) : Basics of Java Programming (GP)
EMMLUP (IT) : Essentials of Mathematics for Machine Learning Using Python (SB)	KDR (Mech) : Kinematics and Dynamics of Robotics (SB)	CT (HSS) : Critical Thinking (GP)
TWPP (HSS) : Technical Writing and Professional Presentations (GP)	OR (Mech) : Operations Research (GP)	SEA (ECE) : Sensors for Engineering Applications (GP)

BE - IV Sem. Open Elective Preference Wise Analysis - 2023-2024

S.No	Course Name	1 Pref.	2 Pref.	3 Pref.	4 Pref.	5 Pref.	6 Pref.	7 Pref.	8 Pref.	9 Pref.	Total
1	Numerical Methods (GP)	177	42	85	14	38	13	46	0	0	415
2	Solar Power and Applications (GP)	159	176	170	73	39	17	14	14	3	665
3	Solid Waste Management (GP)	156	226	145	44	34	23	17	7	25	677
4	Mathematical Computing for AIML with Python (SB)	83	7	28	13	8	13	15	24	17	208
5	Object Oriented Programming Using JAVA (GP)	76	58	23	21	25	38	50	2	3	296
6	Basics of Java Programming (GP)	68	61	38	29	32	37	27	1	3	296
7	Essentials of Mathematics for Machine Learning Using Python (SB)	64	16	6	28	13	13	18	19	26	203
8	Kinematics and Dynamics of Robotics (SB)	36	0	0	0	0	0	0	0	0	36
9	Critical Thinking (GP)	33	41	56	78	101	155	195	16	36	711
10	Technical Writing and Professional Presentations (GP)	10	38	60	94	113	220	137	32	7	711
11	Operations Research (GP)	5	8	40	91	194	124	123	17	20	622
12	Sensors for Engineering Applications (GP)	3	38	60	226	114	58	69	12	4	584
Total		870	711	711	711	711	711	711	144	144	5424

BE – IV Sem. Branch Wise Allotment - Acad. Year – 23-24

S.No	Course Name	CSE	ECE	EEE	Mech	Civil	IT	AIML	Total
1	Numerical Methods (GP)	63	0	0	0	0	89	25	177
2	Solar Power and Applications (GP)	56	10	0	20	12	43	18	159
3	Solid Waste Management (GP)	16	12	7	32	0	67	22	156
4	Mathematical Computing for AIML with Python (SB)	0	37	10	24	12	0	0	83
5	Object Oriented Programming Using JAVA (GP)	0	51	12	10	3	0	0	76
6	Basics of Java Programming (GP)	0	35	19	12	2	0	0	68
7	Essentials of Mathematics for Machine Learning Using Python (SB)	0	30	13	18	3	0	0	64
8	Kinematics and Dynamics of Robotics (SB)	0	22	3	0	7	2	2	36
9	Critical Thinking (GP)	4	5	3	3	11	7	0	33
10	Technical Writing and Professional Presentations (GP)	1	3	0	4	2	0	0	10
11	Operations Research (GP)	1	0	0	0	2	1	1	5
12	Sensors for Engineering Applications (GP)	0	0	0	2	0	1	0	3
Total		141	205	67	125	54	210	68	870

Evidence of Success:

Increased Enrolment in SBOEs:
A noticeable increase in enrolment in stream based open electives, especially those in emerging fields like AIML, robotics, and reflects student enthusiasm and interest in expanding their knowledge beyond their major.
Improved Grades and Learning Outcomes:
Data from academic performance in SBOEs shows a positive trend in grades.
Cross-Departmental Projects:
There has been a rise in collaborative student projects across different departments. For example, students from Electrical Engineering collaborating with Computer Science students on a robotics project or Mechanical Engineering students working with Civil Engineering students on sustainable infrastructure projects.

Problems Encountered:

While **Stream-Based Open Electives (SBOEs)** provide significant opportunities for enhancing interdisciplinary learning, flexibility, and industry relevance, their implementation in an engineering college can present various challenges. These challenges can arise from academic, logistical, administrative, and industry-related factors. Below are the key problems encountered in offering SBOEs:

Curriculum Design and Integration Challenges

- Designing a curriculum that accommodates a wide range of electives from different engineering disciplines can be complex. Ensuring that the content is both rigorous and relevant to students from different backgrounds is a difficult task.
- **Consistency in Course Standards:** Ensuring uniformity in the quality and academic rigor of electives across different departments may be challenging, especially when faculty from various streams design courses with different levels of complexity.
- **Prerequisite Conflicts:** SBOEs often involve students from different engineering backgrounds, but some electives might require foundational knowledge that not all students possess, which can lead to difficulties in managing prerequisites and course entry requirements.
- **Challenge in getting Faculty**
- **Imbalanced Enrollment:** Some electives might experience overcrowding, while others with more specialized content or less popular topics may not have enough students to form a viable class.

- **Faculty Training and Development:** Many faculty members may need additional training or professional development to teach electives in emerging fields, such as AI, blockchain, or data analytics, leading to an increased burden on faculty resources.
- Exiting from the stream based open electives in the middle by some students for no reason.

Resources Required:

- Faculty Training
- Experts from Industry
- Lab resources wherever applicable.

Best practices:

7.2.1 Provide the web link on the Institutional website regarding the Best practices as per the prescribed format of NAAC: Academic Year: 2023-2024

Title of the Practice: #2

Faculty Development Program

Objectives of the Practice:

- To Update the subject knowledge and application knowledge of the faculty as per the latest developments.
- To train the faculty in writing the research papers, funding proposals and patents.

The Context:

Meeting the changing curriculum requirements, viz., introduction of the new core courses, professional electives, open electives, professional electives with labs, number of lab course etc.,, the faculty needs to be trained and updated on a regular basis. In addition , faculty also need to be trained in writing journal papers , writing funding proposals, writing patents as R&D profile of the college has to be enhanced.

The Practice:

The institute promotes the following to achieve the objectives of the practice:

- Conduct Faculty Development Programmes/ Conferences/Workshops on latest technologies on a periodic basis.
- Journal Paper presentation by faculty on the latest technologies
- Completion of the NPTEL course by faculty on the courses they are teaching

- Academic leave to faculty to complete their PhD
- Incentive policy

List of new courses introduce in the last 5 years department wise:

S.No	Academic Year	Number of new courses
1	2023-24	119
2	2022-23	124
3	2021-22	120

Details of professional development / administrative training programmes organized by the Institute for teaching and non teaching staff during the year 2023-24:

S.NO	Title of the professional development program organised for teaching staff	Title of the administrative training program organised for non-teaching staff	No. of participants	Dates (from-to) (DD-MM-YYYY)
	CIVIL			
1	-	Skill Development Programme on " Automatic Compactor NDT, Permeability Test Computerized UTM Spectro Photometer Triaxial Test Total Station"	4	22.01.2024 to 25.01.2024
2	3rd International Conference on "Advances in Concrete and Construction Engineering for Sustainability (ICACC-2024)"	-	144	26.04.2024 & 27.04.2024
CSE				
3	FDP On Recent Trends in Natural Language Processing		**69**	29-05-2024 To 08-06-2024

4	3rd International Conference on “Cognitive and Intelligent Computing (ICCIC-2023)”		**75**	08.12.2023 to 09.12.2023
ECE				
5	FDP on “Data Structures using C Language”		46 participants	17 th to 27 th January 2024
6	National Level One Week Workshop on “MEMS CMOS integration training program”Mr. Sudhir, Design Engineer, Entuple Technologies, Bangalore		Total : 126 participants	Jan, 2024
7	Programming for Problem Solving using C Language” organised by Dept. of ECE, in Association with M/s. Campus Corporate Connect (CCC), Hyderabad		46 Participants,Internal Faculty: 10, Other Dept. Faculty: 36, Other Dept. Faculty: 36	7^{th} to 12^{th} Aug, 2023
8	One week workshop on Software Defined Radio for wireless Communication and Signal Processing Applications		10	1-5 April 2024

EEE				
9	Three Day FDP on “Relay Co-ordination & Arc Flash Studies using ETAP”	**-**	**30**	5th, 6th & 9th September 2023
IT				
10	Hands-on sesison on "Generative AI"		20	01.03.2024
11	Five Days Online FDP on ‘Blockchain Technology and Its Current Research Challenges’ in association with ISOC–Hyderabad chapter.	Five Days Online FDP on ‘Blockchain Technology and Its Current Research Challenges’ in association with ISOC–Hyderabad chapter.	52	29.04.2024 to 03.05.2024
12	Second International Conference on Computational Intelligence and Data Analytics (ICCIDA) (Hybrid Mode) with Springer as the publication partner		159	28.06.2024 to 29.06.2024
MECH				
13	Robotics Workshop on Recent Trends in Smart Path Follower		**4**	1-2 Dec,2023
MATHS				
14	5-Day Faculty Development Programme on “Recent Advances in Applied Mathematics” (RAAM-2024)		**77**	24-06-2024 to 28-06-2024
15	National Conference on Recent trends in Mathematics in the fields of Science and Technology (RMST-2024)		51	11-03-2024 to 12-03-2024

PHYSICS				
16	Multidisciplinary International Conference on Advances in Applied Sciences(ICAAS-2023) organized by departments of Physics and Chemistry		**44**	22-23 December 2023
IQAC				
17	Essential features and challenges in the implementation of NEP 2020 by Dr. Y. Narasimulu, Director, UGC-HRDC, University of Hyderabad		58	9/29/2023
18	Workshop on Active and Engaged learning initiatives in Teaching by Prof. Cliff Kussmaul, Principal Consultant at Green Mango Associates, LLC, USA, Adjunct Professor, School of Technology, Woxsen University, Hyderabad		89	10/21/2023

Evidence of Success:

Faculty Development Programs (FDPs) significantly contribute to the growth and excellence of engineering education. The following points illustrate the evidence of success achieved through well-designed and executed FDPs:

Improved Research Output:

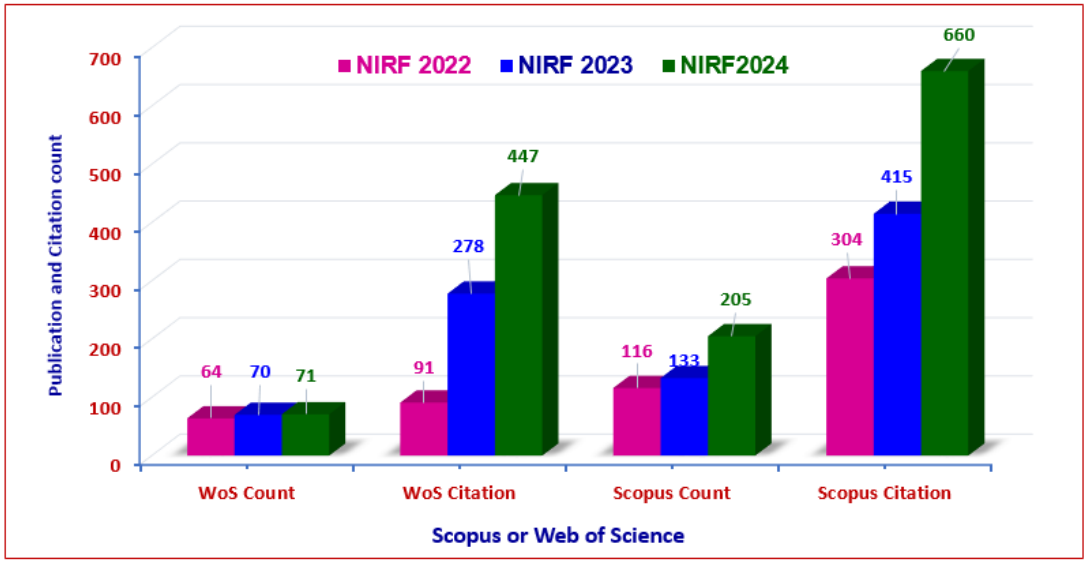
- Faculty participation in FDPs focused on research methodologies has resulted in increased research publications in high-impact journals and conference proceedings.

- Faculty members actively pursue funded research projects and collaborate with industries, as evidenced by successful grant approvals and patents filed.

Faculty Publications, Workshops, FDPs:

Year	Publications		Books/ Book Chapter	Workshops/FDPs/ Conferences	
	Journal	Conferences		Organized	Attended
2023-24	130	78	23	15	160
2022-23	129	170	22	16	160

Quality of Publications: Analysis as per NIRF Database



Details of R&D and consultancy proposals:

Summary of Grants Received

Year	Total value (Rs)
2023-24	1,72,02,598
2022-23	45,07,500
2021-22	56,65,000

Summary of Consultancy Activities

Year	Total value (Rs)
2023-24	18,09,400
2022-23	5,56,648
2021-22	5,61,700

Ongoing Sponsored Research Projects

S. No.	Title of the Project	Name of the Funding Agency & Scheme	Investigators	Budget Sanctioned, Duration & Date of Sanction
1	Development of General-Purpose Control Board for Safety Critical Control System	HBL POWER SYSTEMS LTD	1) Mr. V. Krishna Mohan, Principal Investigator /TBD 2) Dr. K. Deepti / Dr. S. Aruna Deepthi / Mr. K. Rama Krishna, Co-Principal Investigators UG Students: 1) M. Vinay (1602-20-735-307) 2) Puwara Rithika Priya (1602-20-735-038)	Sanctioned Budged : Rs. 48,14,400 Duration : 2 Year Date of Sanction :07-12-2023
2	Development of Beamforming Techniques for Hydrophone Sensor Arrays	HBL POWER SYSTEMS LTD	1) Dr. K. Krishna Kishore, Principal Investigator 2) Dr. Arun Kumar, Co-Principal Investigator UG Students: 1) Vijigir Pallavi (1602-20-735-089) 2) Payyawal Pranith (1602-20-735-030)	Sanctioned Budged : Rs. 65,13,600 Duration : 3 Year Date of Sanction :07-12-2023
3	Development of IP-Based Voice and Data Communication Board	HBL POWER SYSTEMS LTD	1) Dr. D.M.K. Chaitanya, Principal Investigator 2) Dr. E. Sreenivasa Rao, Co-Principal Investigator UG Students: 1) Domala Nithin (1602-20-735-024) 2) Hafsa Anam (1602-20-735-073)	Sanctioned Budged : Rs.39,64,800 Duration : 1.5 Year Date of Sanction :07-12-2023

4	Development of FPGA Based UHF Radio System and its Integration with SDR Platform	HBL POWER SYSTEMS LTD	1) Dr. K. Krishna Kishore, Principal Investigator 2) Dr. E. Sreenivasa Rao, Co-Principal Investigator	Sanctioned Budged : Rs.9,67,600 Duration : 1 Year Date of Sanction :24-11-2023
5	Investigation of Signal Reflections in PCM telemetry Link During Indoor Testing	DRDO-CAS	Dr. D.M.K. Chaitanya, Asso. Prof. (PI) Dr. Arun Kumar, Prof. (Co-PI-1) Dr. E. Sreenivasa Rao, Prof. (Co-PI-2) Dr. A. Srilakshmi, Asso. Prof. (co-PI-3)	Sanctioned Budged : Rs.5,90,000 Duration : 1 Year Date of Sanction :16.12.2022
6	Development of gaming tool for cognitive behavior therapy in management of conduct disorder among Children/Adolecsents/ Students	DST – CSRI	Dr. Ch. V.K.N.S.N. Moorthy	Sanctioned Budget : Rs.38,35,000 Duration : 3 Years Date of Sanction :18.08.2021
7	Investigation on Non-Linear, Fatigue and Fracture Behaviour of Elastomers and Composite Materials	AICTE-RPS	Dr. T. Ram Mohan Rao	Sanctioned Budget : Rs.21,29,400 Duration : 3 Years Date of Sanction : 14.08.2020
8	Dimensionality Reduction and pixel classification in Hyperspectral images	SERB-Teachers Associateship for Research Excellence	Dr. Hitendra Sharma	Sanctioned Budget : Rs.18,30,000 Duration : 3 Years Date of Sanction : 26.02.2019
9	Establishing a Wireless Technology Centre & 3-D Bio Lab	DST-FIST	Prof. E. Sreenivasa Rao Prof. T. Ramamohan Rao	Sanctioned Budget : Rs.60,00,000 Duration : 5 Years

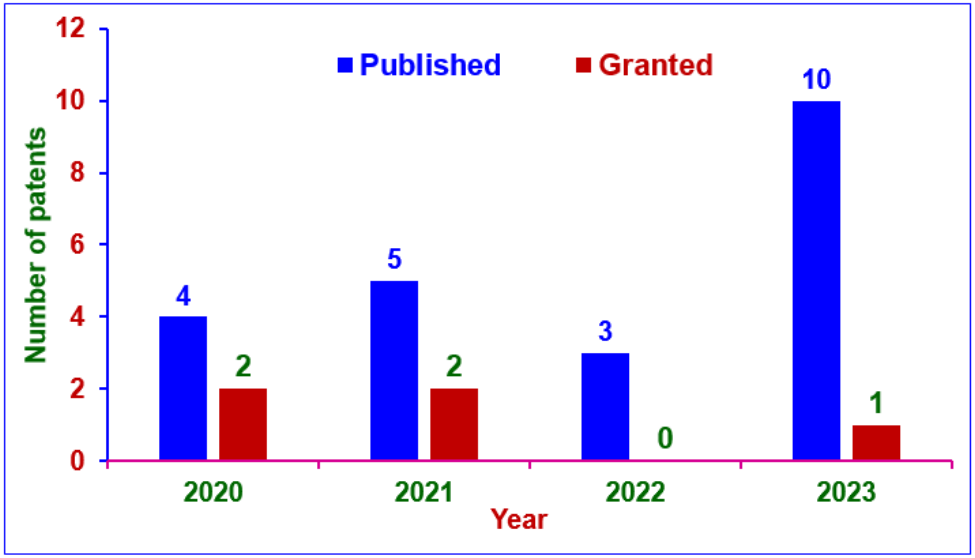
				Date of Sanction : 20.12.2018
10	Drone/UAV based Multi Sensor High Quality Precision Photogrammetric Laser Mapping and Data Capture Processing for Geo-Spatial Platforms	DST-NGP-GTD	Prof. K. Ram Mohan Rao	Sanctioned Budget : Rs.35,75,261 Duration : 2 Years Date of Sanction : 12.01.2023
11	Development of PCM Telemetry Data Reduction & Analysis Software	DRDO-CARS	Prof. K. Veera Swamy Prof. E. Sreenivasa Rao Prof. Arun Kumar	Sanctioned Budget : Rs.9,72,270 Duration : 14 Months Date of Sanction : 18.07.2023

Ongoing Consultancy Projects:

S. No.	Title of the Project	Name of the Organization	Principal Investigators	Budget Sanctioned, Duration & Date of Sanction
1	Development of Impulse Voltage Measurement System for Transformer Testing	Digilogic Systems Pvt. Ltd. # 102, 1st Floor, DLS Abacus Tech Park, Beside DSL virtue Mall, Uppal, Hyderabad., State Name : Telangana, Code 36	Dr. E. Sreenivasa Rao (PI) Dr. Arun Kumar (Co-PI-1) Dr. K. Veera Swamy (Co-PI-2)	Sanctioned Budget : Rs.31,32,428 Duration : 1 Year Date of Sanction : 23.12.2022
2	Simulation of Spectrum Monitoring Receiver	Digilogic Systems Pvt. Ltd. # 102, 1st Floor, DLS Abacus Tech Park, Beside DSL virtue Mall, Uppal, Hyderabad., Telangana, Code 36	Dr. K. Veera swamy (PI) Dr. K.R. Deepthi (Co-PI-1) Dr. Arun Kumar (Co-PI-2) Dr. E. Sreenivasa Rao (Co-PI-3)	Sanctioned Budget : Rs.7,08,000 Duration : 1 Year Date of Sanction : 10.11.2022

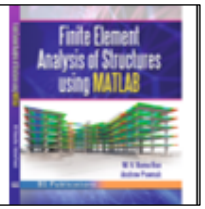
3	Product Development Related to DRDO	Next Gen Avarokin Technologies India LLP (Formerly known as Next Generation Technologies) Plot No. 10, 1st Floor, Above TATA Motors, P & T Colony, Medipally, Medchal Dist., Telangana	Dr. Arun Kumar, Professor (PI) Dr. E. Sreenivasa Rao, Professor (Co-PI-1) Dr. K. Veera Swamy, Professor (Co-PI-2)	Sanctioned Budget : Rs.1,50,000 Duration : 1 Year Date of Sanction : 01.08.2022

Patents:



Textbook Publications:

Dr. M.V.Rama Rao,
Department of Civil Engineering.
"Finite Element Analysis of Structures using MATLAB"



Ms. R. Sudha, Asso. Prof., CSE, VCE & Others

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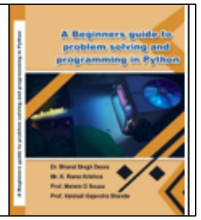
ISBN: 9789356253070



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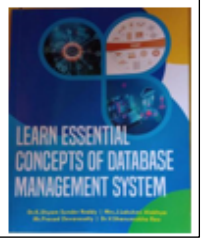

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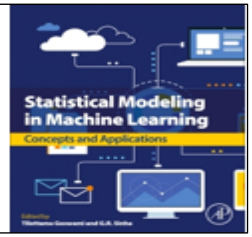

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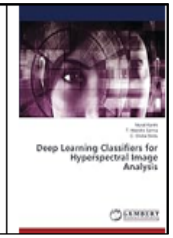
Deep Learning Classifiers for Hyperspectral Image Analysis
LAP-LAMBERT Academic Publishing,
2022. ISBN: 978-620-5-51413-9.



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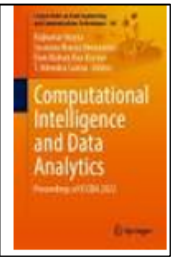

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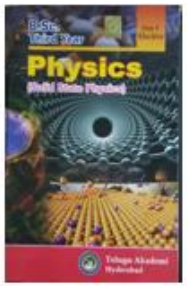

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2018

Dr. K. Deergha Rao
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Problems Encountered:

1. **Resource Challenges:** Difficulty in securing qualified resource persons and managing their availability.
2. **Resistance to Change:** Faculty may resist adopting new teaching methods or technologies.
3. Post Covid Scenarios, most of the faculty development programs are being conducted in online mode which are not that effective as compare to offline faculty development program.

Resources Required:

- **Financial Resources:** Budget for expert fees, materials, refreshments, and logistics.
- **Infrastructure:** Seminar halls, audio-visual equipment, computers, and internet connectivity.
- **Human Resources:** Qualified resource persons, coordinators, and administrative support staff.
- **Training Materials:** Presentations, handouts, software tools, and workshop kits.
- **Technological Support:** Online platforms (for hybrid/online FDPs), projectors, and microphones.
- **Promotional Materials:** Brochures, emails, and registration portals for participant outreach.
- **Evaluation Tools:** Feedback forms and assessment mechanisms to gauge program effectiveness.