VIDYA JYOTHI
Institute of Technology

AN AUTONOMOUS INSTITUTION

Welcome to the NBA Expert Committee

by

Dr. G. Sreeram Reddy
Professor & Head
Department of Mechanical Engg.

Outline

- Department Vision and Mission
- Programmes Offered
- Achievements – Department, faculty & students
- Departmental Committees
- Criteria 1 to 7
- OBE Philosophy of the Department

Vision & Mission

VIDYA JYOTHI Institute of Technology
AN AUTONOMOUS INSTITUTION

VISION

- To be recognized as a center of excellence in providing Mechanical Engineering education of international standards leading to well qualified engineers who are innovative, immediate contributors to their profession, successful in advanced studies and employable globally.

MISSION

- To educate, prepare and mentor students to excel as professionals and grow throughout their careers in the field of Mechanical Engineering. This can be accomplished by:
  - Providing the facilities and environment conducive to a high quality education, strong foundation in the fundamental principles of Mechanical Engineering and preparing them for diverse careers.
  - Engaging in academic activities, which strengthen the students Regional, National and International reputation.

Programmes Offered

Department of Mechanical Engineering was started in the year 1999.

Intake:

B.Tech: 120

M.Tech (CAD/CAM): 24

Achievements of Department

VIDYA JYOTHI Institute of Technology
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NBA has accredited B.Tech Programme

- First Cycle in the academic year **2011-12 (up to 2014 -15)**
- Second Cycle in the academic year **2018-19 (up to 2020 -21)**

- **The department has been recognized as a "Research Centre" by JNTUH in the year 2019.**
- **An amount of Rs. 87 lakhs has been sanctioned by various funding agencies for research and development.**
- **Faculty members published 13 patents during the assessment period.**
- **Four faculty members have been awarded Ph.D. in the past three years.**

Faculty Achievements

1. Dr. G. Sreeram Reddy has won "IGIP" award in 7th international conference on transformations in engineering education held at Anurag university , Hyderabad on 5th Jan 2020.
2. Prof. V.V. Satyanarayana delivered an invited talk on "Optimisation aspects in welding processes" during one day workshop WNDE-2019 at Gurukul, Nuclear Fuel Complex, Hyderabad on 30th August 2019.
3. Dr. V. Phanindra Bogu delivered a Guest lecture on "Modelling & Analysis of homogenous scaffold-based customized cranial implants" at NIT Warangal, GIAN Programme (Medical Prototyping using 3D Printing), 15-19th July 2019.
4. Dr. V. Phanindra Bogu delivered a Guest lecture on "3D Printing and its Applications" at JNTU Jagityal, TEQIP-III Programme , 26-28th Feb 2020.
5. Dr. B. Sudha Bindu received best researcher award in 2018 from IJRULA, Malaysia.

Students' Achievements

1. Mr. Uday Kumar has been awarded "Gold medal" for securing college topper position for A.Y. 2020-21.
2. Ms. B. Aishwarya & Ms. C. Sravani of IV year have been honored "runner up" in a seminar at IUC-EWB student summit 2020.
3. In the National level SAE-INDIA-2019 competition held at Matrusri Engineering College, Hyderabad
   - ❖ Mr. Veluru Hareesh won 1st prize in Solar Circuit Designing
   - ❖ Ms. D. Navya won 1st prize in Computer Aided Manufacturing
   - ❖ Mr. B. Sai Prakhyat won 1st prize in Autonomous Vehicle Challenge
4. Mr. E. Bharat Reddy of III year won 3rd prize in poster presentation at XITIJ 2019, Ahmedabad.
5. Mr. K. Durga Prasad of III year won 3rd prize in poster presentation at LUF TETAR, 2018, Kodakara, Kerala.

Students' Achievements

VIDYA JYOTHI Institute of Technology
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Paper Publications: 57

S.No.	Academic Year	No. of Publications
1	2016-17	25
2	2017-18	12
3	2018-19	9
4	2019-20	3
5	2020-21	8

Number of Patents: 04

Departmental Committees

VIDYA JYOTHI Institute of Technology
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1. Programme Assessment Committee (PAC)

2. Department Advisory Board (DAB)

Programme Assessment Committee

VIDYA JYOTHI Institute of Technology
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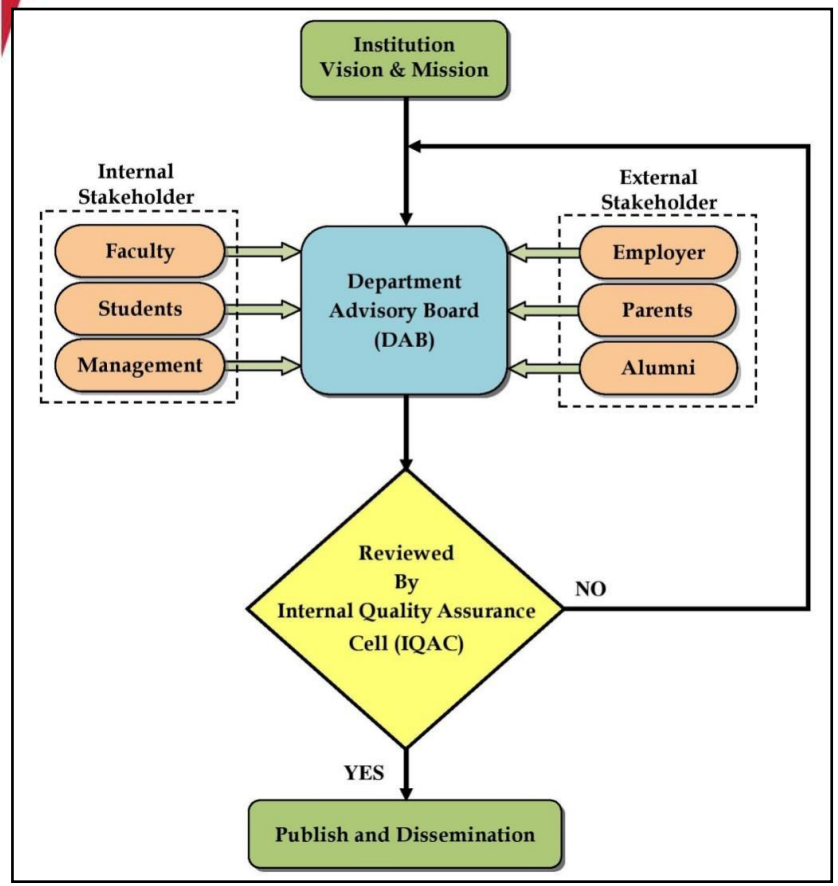
S.No	Name	Designation	Position
1	Dr. G. Sreeram Reddy	HOD & Professor	Chairman
2	Dr. V. V. Satyanarayana	Professor	Convener
3	Dr. L. Madan Ananda Kumar	Associate Professor	Members
4	Dr. V. Phanindra Bogu	Associate Professor	
5	Mr. K. Rajesh Kumar	Associate Professor	
6	Mr. P. Sampath Kumar	Associate Professor	

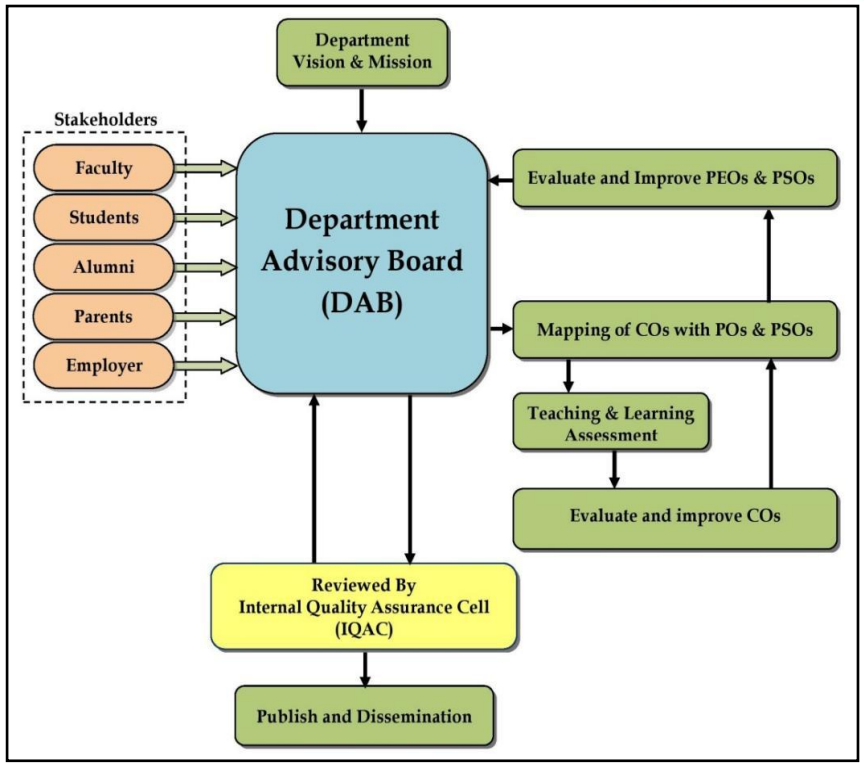
Department Advisory Board

S.No.	Name	Designation	Position
1	Dr. G. Sreeram Reddy	HOD & Professor	Chairman
2	Dr. V.V. Satyanarayana	Professor	Convener & Program Co-Ordinator
3	Dr. B. Ravinder Reddy	Associate Professor	Members
4	Mr. Muralidhar Ekambaram	CEO, Adeptus Servo-Mechatronics	
5	Mr. K. Raghavendra	Parent	
6	V. Kumar (19915A0376)	Student	

Process for defining Vision, Mission & PEOs



Process for defining Vision & Mission of the Department



Process for defining the PEO of the Department

PEOs & PSOs of the Department

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Programme Educational Objectives (PEOs)

PEO-I

Successful career in mechanical and allied industries through strong foundation in basic sciences, mathematics and engineering fundamentals

PEO-II

Ability to update knowledge on dynamically changing industrial practices.

PEO-III

Capability to work in a global environment imbibing team spirit with ethical responsibility.

PEO-IV

Ability to enrich knowledge, communication and leadership skills through perpetual learning with zeal towards research

Programme Specific Outcomes (PSOs)

PSO1

Analyze and solve problems of thermal and manufacturing by comprehensive design of mechanical engineering components.

PSO2

Ability to design, develop and implement mechanical engineering solutions keeping in view, sustainability and environmental issues with social responsibility.

Board of Studies - Members

S.No	Name of the Member	Designation	College
1	Dr. G. Sreeram Reddy	Chairman	HOD& Professor, MED,VJIT.
2	Dr. M Sreenivasa Rao	JNTUH Nominee	Professor, MED,JNTUH,.
3	Dr. K. Kishore	Member	Professor, MED ,Vasavi College of Engineering
4	Dr. K. Sudhakar Reddy	Member	HOD & Professor, MED, MGIT, Hyderabad
5	Dr. C. Udaya Kiran	Member	Principal & Professor,BEC, Hyderabad
6	Mr. Ayush Nadimpalli	Member	Managing Director ,Adroitech Engineering Solutions Pvt Ltd, Hyderabad
7	Ms. A. Swapnika	Member	Technical Director, Premier Engineering Industries, Hyderabad
8	Dr. B.V. Reddi	Member	Professor , VJIT
9	Dr. V.V.Satyanarayana	Member	Professor, VJIT
10	Dr. L. Madan Ananda Kumar	Member	Assoc.Professor, VJIT
11	Dr. B. Ravinder Reddy	Member	Assoc. Professor, VJIT

15

Curriculum – Structure (R 15)
I year

VIDYA JYOTHI Institute of Technology
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Course Code	Course Title	Total Number of contact hours				Credits
		Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
A11001	English-I	2	0	0	2	2
A11002	Mathematics - I	4	1	0	5	3
A11003	Engineering Physics-I	3	1	0	4	3
A11501	C Programming	3	1	0	4	3
A11301	Engineering Graphics-I	2	0	3	5	3
A11302	Engineering Mechanics – I	3	1	0	4	3
A11581	C Programming Lab	0	0	3	3	2
A11081	English Language Communication Skills Lab-I	0	0	3	3	2
A11082	Engineering Physics Lab	0	0	3	3	2
A11381	Engineering Workshop	0	0	3	3	2
TOTAL		**17**	**4**	**15**	**36**	**25**

Course Code	Course Title	Total Number of contact hours				Credits
		Lecture(L)	Tutorial(T)	Practical (P)	Total Hours	
A12005	English – II	2	0	0	2	2
A12006	Mathematics – II	4	1	0	5	3
A12007	Engineering Physics-II	3	1	0	4	3
A12008	Applied Chemistry	3	1	0	4	3
A12304	Engineering Mechanics – II	3	1	0	4	3
A12305	Engineering Graphics – II	2	0	3	5	3
A12085	English Language Communication Skills Lab-II	0	0	3	3	2
A12086	Engineering Physics and Chemistry Lab	0	0	3	3	2
A12087	IT & Engineering Workshop	0	0	3	3	2
TOTAL		**17**	**4**	**12**	**33**	**23**

Curriculum – Structure (R 15)
II year

VIDYA JYOTHI Institute of Technology
AN AUTONOMOUS INSTITUTION

Course Code	Course Title	Total Number of contact hours				Credits
		Lecture(L)	Tutorial(T)	Practical (P)	Total Hours	
A13013	Numerical Methods	3	1	0	4	3
A13207	Electrical and Electronics Engineering	3	1	0	4	3
A13308	Mechanics of Solids	4	1	0	5	4
A13309	Thermodynamics	4	1	0	5	4
A13310	Metallurgy and Material science	4	1	0	5	4
A13011	Environmental science	3	1	0	4	2
A13283	Electrical and Electronics Engineering Lab	0	0	3	3	2
A13383	Metallurgy and Mechanics of solids Lab	0	0	3	3	2
A13MC2	Intellectual Property Rights And Cyber Laws	2	0	0	2	0
TOTAL		**23**	**6**	**6**	**35**	**24**

Course Code	Course Title	Total Number of contact hours				Credits
		Lecture(L)	Tutorial(T)	Practical (P)	Total Hours	
A14312	Production Technology	3	1	0	4	3
A14313	Kinematics of Machinery	4	1	0	5	4
A14314	Thermal Engineering-I	3	1	0	4	3
A14315	Mechanics of Fluids and Hydraulic Machines	4	1	0	5	4
A14316	Machine Drawing	0	6	0	6	3
A14015	Probability and Statistics	3	0	0	3	3
A14384	Production Technology Lab	0	0	3	3	2
A14385	Mechanics of Fluids and Hydraulic Machines Lab	0	0	3	3	2
A14MC3	Professional Communication	2	0	0	2	0
TOTAL		**19**	**10**	**6**	**35**	**24**

Curriculum – Structure (R 15)
III year

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Course Code	Course Title	Total Number of contact hours				Credits
		Lecture(L)	Tutorial(T)	Practical (P)	Total Hours	
A15317	Design of Machine Members-I	3	1	0	4	3
A15318	Thermal Engineering-II	3	1	0	4	3
A15319	Dynamics of Machinery	3	1	0	4	3
A15320	Machine tools and Metrology	3	1	0	4	3
Professional Elective-1		3	1	0	4	3
A15321	Automobile Engineerin					
A15322	Computational Fluid Dynamics					
A15323	Welding Technology					
Open Elective-1		3	1	0	4	3
A15324	Elements of Mechanical Engineering					
A15348	Product Engineering					
A15386	Thermal Engineering lab	0	0	2	2	2
A15387	Metrology and machine Tools Lab	0	0	2	2	2
A15TP1	Personality Development & Behavioral Skills	2	0	0	2	2
TOTAL		**20**	**6**	**4**	**30**	**24**

Course Code	Course Title	Total Number of contact hours				Credits
		Lecture(L)	Tutorial(T)	Practical (P)	Total Hours	
A16326	Design of Machine Members-II	3	1	0	4	3
A16327	Heat Transfer	3	1	0	4	3
A16328	Finite Element Methods	3	1	0	4	3
A16018	Managerial Economics and Financial Analysis	3	1	0	4	3
Professional Elective-2		3	1	0	4	3
A16329	Refrigeration and Air Conditioning					
A16330	Renewable Energy Sources					
A16331	Tool Design					
Open Elective-2		3	1	0	4	3
A16332	Basic Automobile Engineering					
A16333	Material Science Engineering					
A16388	Heat Transfer Lab	0	0	2	2	2
A16090	Advanced Communication Skills Lab	0	0	2	2	2
A16TP2	Quantitative Methods & Logical Reasoning	2	0	0	2	2
TOTAL		**20**	**6**	**4**	**30**	**24**

Curriculum – Structure (R 15)
IV year

VIDYA JYOTHI Institute of Technology
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Course Code	Course Title	Total Number of contact hours				Credits
		Lecture(L)	Tutorial(T)	Practical (P)	Total Hours	
A17334	Operation Research	4	1	0	5	3
A17335	CAD/CAM	4	1	0	5	3
A17336	Mechanical Measurements and instrumentation	3	1	0	4	3
Professional Elective-3		3	1	0	4	3
A17337	Robotics					
A17338	Mechatronics					
A17339	Composite Materials					
Professional Elective-4		3	1	0	4	3
A17340	CNC Technologies					
A17341	Power plant Engineering					
A17342	Computer Graphics					
Open Elective-3		3	1	0	4	3
A17343	Optimization Techniques					
A17344	Maintenance and Safety Engineering					
A17389	Computer Aided Design and Manufacturing Lab	0	0	3	3	2
A17390	Production Drawing practice and Instrumentation lab	0	0	3	3	2
A173P1	Industry Oriented Mini Project	0	0	0	0	2
TOTAL		**20**	**6**	**6**	**32**	**24**

Course Code	Course Title	Total Number of contact hours				Credits
		Lecture(L)	Tutorial(T)	Practical (P)	Total Hours	
A18345	Production Planning And Control	3	1	0	4	3
A18346	Plant Layout And Material Handling	3	1	0	4	3
A18347	Unconventional Machining Processes	3	1	0	4	3
A183TS	Technical Seminar	0	0	6	6	2
A183CV	Comprehensive Viva	0	0	0	0	2
A183P2	Project work	0	0	0	0	11
TOTAL		**9**	**3**	**6**	**18**	**24**

Mapping of CO with PO & PSO

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	Mechanics of Solids													
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	Understand the concepts of stress, strain and material properties. Derive basic stress strain equations with appropriate assumptions.	3	2	3	3	3	3	3	2		2		3	3	3
CO2	Appreciate the concepts of shear force and bending moments. Generate shear force and bending moment diagrams for any given beam problem.	2	3	3	3	3			3		2		3	3	3
CO3	Determine the stresses and strains in the members subjected to bending and shear and interpret the stress distribution across various beams like rectangular, circular, triangular, I, T and angle sections.	2	3	3	3			3	2		2		3	3	3
CO4	Calculate and analyze the slope and deflection of beams under different types of loadings.	3	3	2	2				2		2		3	2	3
CO5	Analyze and compute stresses and strains in thin and thick cylinders.	3	3	3	3	3	3		2		2		3	3	2
AVG		**2.6**	**2.8**	**2.8**	**2.8**	**3**	**3**	**3**	**2.2**		**2**		**3**	**2.8**	**2.8**

Academic Performance of students

Batch wise Result (Pass Percentage)

Batch	Admitted	Graduated		Pass %
		Without backlog	With backlog	
2017-2021	263	162	235	89.35
2016-2020	278	170	249	89.57
2015-2019	265	167	239	90.19

Students Performance

(Placements, Higher Studies & Entrepreneurship)

Batch	No. of Final Year Students	No. of Students		
		Placed	Higher Studies	Entrepreneurs
2014-2018	242	126	9	1
2015-2019	241	124	41	1
2016-2020	252	91	31	2

MOUs

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S.No	Name of the Company	Nature of Work	Duration of MOU
1	Premier Engineering Industries	Industrial Visits	5 yrs
2	CIM Technologies	Training, Projects	3 yrs
3	Adeptus Servo Mechatronics Pvt Ltd	Guest lectures, Projects	5 yrs
4	Reliable Environmental Services(RES)	Guest lectures, Projects	3 yrs

MOUs contd..

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Reliable Environmental Services(RES)

Adeptus Servo Mechatronics Pvt Ltd

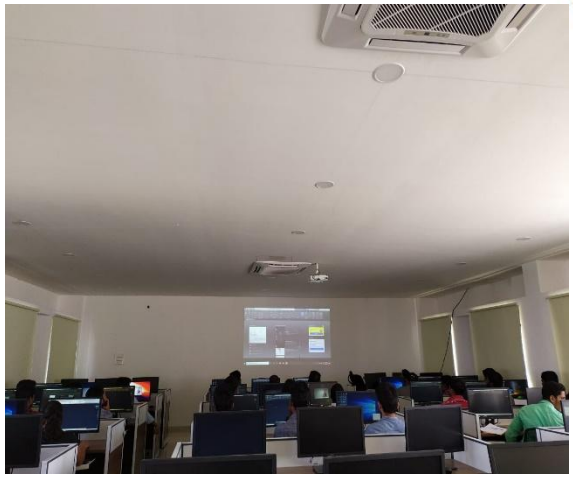
Professional Bodies

- Society of Automotive Engineers (SAE)
- Institution of Engineers (India) (IEI)
- Indian Institute of Welding (IIW)
- Indian Society for Technical Education (ISTE)
- Industrial Engineering and Operations Management (IEOM)

Professional Bodies- Events

Academic Year	No. of events by different Professional Societies				
	ISTE	IIW	IEOM	SAE	IEI
2020-21	-	1	-	1	1
2019-20	2	-	-	-	1
2018-19	1	2	1	1	2

Professional Bodies - Events



Workshop on Autocad Professional Level by Y.Pravallika, Telangana Academy For Skill & Knowledge (TASK)

Guest lecture on Introduction to Mechatronics Engineering & Industrial Potential by Mr. Muralidhar Ekambaram

Department Newsletter

VIDYA JYOTHI Institute of Technology
AN AUTONOMOUS INSTITUTION

MECH VIDYA

Bi-Annual News Letter

2018, Issue 2 (July-December)

VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
An Autonomous Institute
Aziz Nagar Gate, C.B. Post, Hyderabad
http://vjit.ac.in/mechanical/
DEPARTMENT OF MECHANICAL ENGINEERING

From Correspondent's Desk

I congratulate Dr. G. Sreeram Reddy and his team for the achievement of National Board Of Accreditation (NBA) for a period of 3years. I wish them All The Best for the Future Endeavour.

Dr. P. Rajeshwar Reddy, Correspondent, VJES

From Director Desk

I extend my hearty congratulation to the Mechanical Engineering Department on the successful completion of their Accreditation Process and getting Accredited for 3years.

Dr. P Venugopal Reddy, Director VJIT

Message from Principal

I appreciate and congratulate whole heartedly the efforts of the Mechanical Engineering Department for their hard work they put for the Accreditation and subsequent achievement of Accreditation for 3years.

Dr. A Padmaja, Principal VJIT

Overview of the Department

Mechanical Engineering has been on an integration phase with other disciplines of Science and Technology for the past few decades and offers many challenging career opportunities for the students. The Department of Mechanical Engineering in VJIT was established in 1999 and is accredited by NBA in 2018. Going by the technological advances the Department has been actively engaged in transforming the learning systems and creating a sound knowledge base in the minds of the students. Innovations, hands-on-workshops, community projects & industry internships fine tune the students into industry ready.

Achievement of the Department

The Department of Mechanical Engineering has been accredited by NBA for 3years from 01-07-2018 to 30-06-2021. Head of Department and His team earnestly worked for the successful achievement and there services are highly appreciated.

Faculty Achievements:

Dr. G.SreeRam Reddy, Dr. V.V.Satyanarayana & I.Jagadesh Kumar have Co-authored a Chapter in a text book, Advanced Manufacturing and Material Science published by Springer.

Dr. N.Ravinder Reddy has authored a Text book, Modern Methods in Welding Technology, Published by Astha Publishers and Distributors.

Dr.V.Phanindra Babu, has Co-authored a text book, Design and Analysis of Various Homogeneous Interconnected Scaffold Structures for Trabecular Bone, Published by AAP-CRC Press (Taylor & Francis Group).

Program Assessment Committee

Department of Mechanical Engineering has constituted Program Assessment Committee with the following members:

S.No	Name	Designation	Position
1	Dr. Sreeram Reddy	HOD	Chairman
2	Dr. V.V.Satyanarayana	Professor	Convener
3	Dr. N. Ravinder Reddy	Associate Professor	Member
4	Mrs. J. Emeema	Associate Professor	Member
5	Mr. K. Rajesh Kumar	Associate Professor	Member
6	Mr. J. Jagadesh Kumar	Associate Professor	Member

Proposed New Version & Old Version:

OLD VERSION	PROPOSED NEW VERSION
1. To induce thorough understanding of basic sciences, mathematics and mechanical engineering in students to demonstrate their ability both in theory and practical.	1. Successful career in mechanical and allied industries through strong foundation in basic sciences, mathematics and engineering fundamentals.
2. To encourage students to analyze & acquire real time core engineering knowledge and contemporary industrial practices.	2. Ability to update knowledge on dynamically changing industrial practices.
3. To pursue higher studies, become globally employable, imbibe the essence of team work and become entrepreneurs in a multi-disciplinary environment.	3. Capability to work in a global environment imbibing team spirit with ethical responsibility.
4.To encourage students to develop leadership and communication skills through which they can demonstrate their environmental, social, ethical responsibilities, and to provide a platform for lifelong learning and inculcate the culture of R&D.	4. Ability to enrich knowledge, communication and leadership skills through perpetual learning with zeal towards research.

OLD VERSION	PROPOSED NEW VERSION
PSO1: An ability to analyze and solve problems of welding special materials and employing reverse engineering techniques for the design of mechanical engineering components.	PSO1: Analyze and solve problems of thermal and manufacturing by comprehensive design of mechanical engineering components.
PSO2: An ability to design, develop and implement mechanical engineering solutions in view of sustainability, environmental issues with social responsibility.	PSO2: Ability to design, develop and implement mechanical engineering solutions keeping in view, sustainability and environmental issues with social responsibility.

Participation of students in inter-institute events

Academic year	No of students participated	No of awards
2020-21	21	3
2019-20	37	24
2018-19	49	3

Faculty Strength

Professor	Associate Professor	Assistant Professor	Total
4	6	35	45

- ✓ Number of Doctorates: 10
- ✓ Faculty Pursuing Ph.D.: 13
- ✓ Number of Faculty Guiding Doctoral Scholars: 02
- ✓ Number of Lab supporting Staff: 12

Student Faculty Ratio (SFR)

Year	No. of Students		No. of Faculty	SFR
	U.G	U.G+P.G		U.G+P.G
2018-19	875	923	45	20.51
2019-20	895	943	48	19.64
2020-21	875	925	48	19.27
Average SFR				19.13

Research Publications & Patents by Faculty

VIDYA JYOTHI Institute of Technology
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Academic Year	No. of Publications
2020-21	14
2019-20	25
2018-19	16
2017-18	14

No: of Patents Published
13

Grants Received by faculty

S. No.	Name of the Investigators	Name of the Funding agency	Year of Granted	Funds Sanctioned (In Lakhs)
1	Dr.Venugopal Reddy Dr. G.Sreeram Reddy	DRDO	2016-17	50.645
2	Dr. V. V. Satyanarayana	MODROBS	2017-18	10.59
3	Dr L Madan ananda Kumar	MODROBS	2018-19	10.39
4	Dr G Sreeram Reddy	MODROBS	2019-20	11.96
5	Dr. G.Sreeram Reddy	TEQIP-III, JNTUH	2019-20	3.0
6	Dr L Madan ananda Kumar	GoC-AICTE	2019-20	1.82
7	Dr.V Phanindra Bogu	TEQIP-III, JNTUH	2020-21	1.15

Conference / FDP/ Seminar/ Workshop/ STTP/ Symposia

No. of Conferences/ FDPs/ Seminars/ Workshops/ STTP/ Symposia		
Academic Year	Organized	Attended (International/ National)
2020-21	2	13
2019-20	6	39
2018-19	5	57

Certifications

Faculty

S.No	Certification	Number of Certifications
1	Coursera	659

Students

S.No	Certification	Number of Certifications
1	Lean Techno	153
2	Coursera	4950

Books/ Chapters Published

VIDYA JYOTHI Institute of Technology
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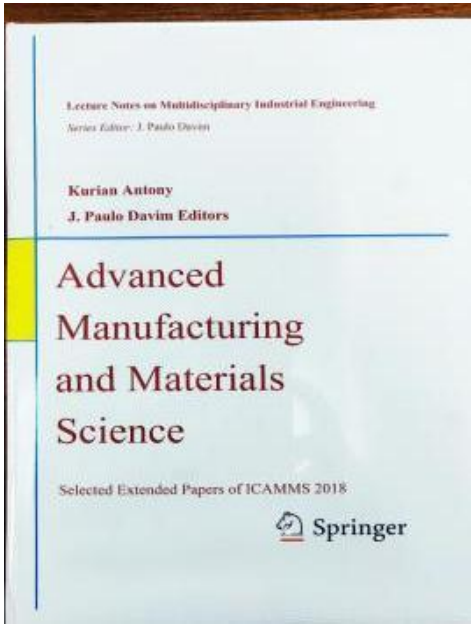
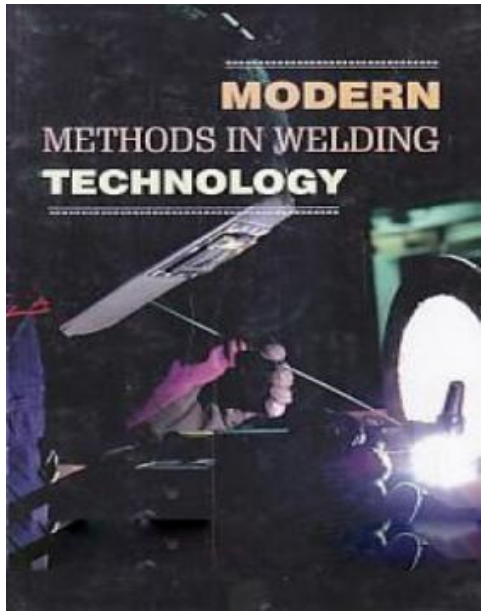


Dr. G. Sreeram Reddy
Springer International Publishing,
ISBN 978-3-319-76276-0



Dr. N. Ravinder Reddy
Astha Publishers & Distributors,
ISBN: 978-93-85330-15-5, 2017.

Dr. V. Phanindra Bogu
Apple Academic Press
ISBN9781351170161

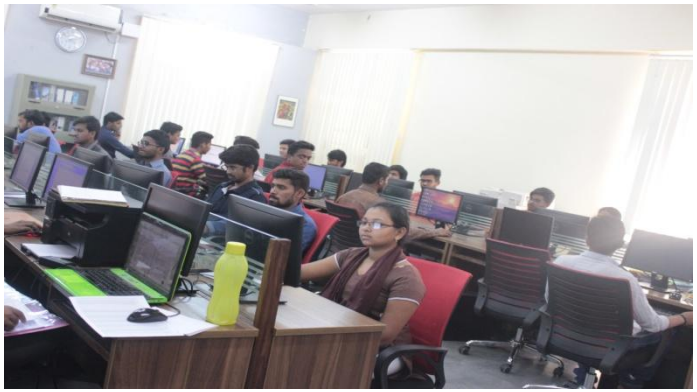
List of Laboratories

S.No	NAME OF THE LABORATORY
1	ENGINEERING WORKSHOP
2	MECHANICS OF SOLIDS
3	METALLURGY
4	MECHANICS OF FLUIDS AND HYDRAULIC MACHINES
5	PRODUCTION TECHNOLOGY
6	THERMAL ENGINEERING
7	METROLOGY AND MACHINE TOOLS
8	HEAT TRANSFER
9	COMPUTER AIDED DESIGN AND MANUFACTURING
10	INSTRUMENTATION LAB
11	R&D LABORATORY

Laboratories

MOF&HM Lab

MOS Lab



CAD/CAM Lab

MT Lab

Major Equipment

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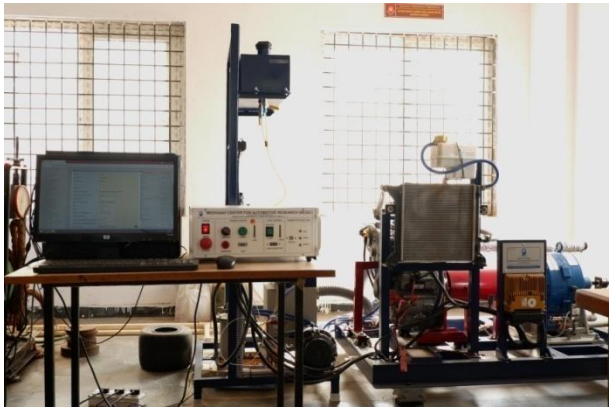
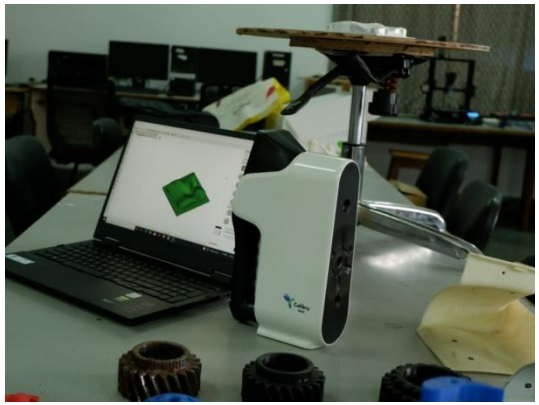
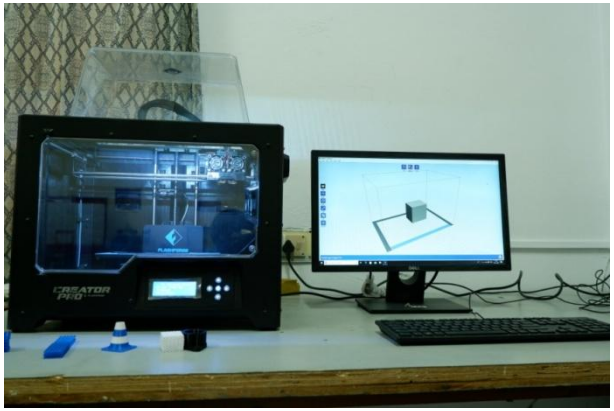


CRDI Duel Fuel Engine

100 KN Computerized UTM Machine



3D Scanner



3D Printer

Rotary Fatigue Testing Machine

PO Target levels for continuous improvement

S.No	COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	ENGLISH-1		2.33	2		3	2.5	2	2.75		2.6	2	3		
2	MATHEMATICS-1	2.6	2.8	2	2.67	2	2.2	2		2			2.6	3	3
3	ENGINEERING PHYSICS-1	2.6	2.67	2.2	2			2.5	2			2	2.6	3	3
-	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
-	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
-	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
-	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
85	PROJECT WORK	3	3	3	3	3	2	3	1.6	3	3	3	3	3	2.8
86	COMPREHENSIVE VIVA	3		2		3	2	3	1	3	3		3	3	2.25
	AVERAGE	2.89	2.76	2.68	2.68	2.36	2.25	2.54	1.99	2.48	2.50	2.28	2.52	2.61	2.59
	TARGET LEVEL	2.02	1.93	1.87	1.88	1.65	1.58	1.78	1.39	1.74	1.75	1.60	1.76	1.83	1.82

TARGET LEVEL= 70% of CO-PO Mapping Average Value

ACTIONS INITIATED FOR PO and PSO IMPROVEMENT

- Keeping in view the employability of the students, change in syllabus in some of the courses like Mathematics-I, ICS & Engineering Graphics is proposed .
- More emphasis on carrying out the industry oriented live projects to learn latest edge technology .
- Problem analyzing skills can be improved by encouraging students to attend expert talks .
- Placement training programs are proposed to be organized in the technical and psychometric domain areas.
- Professional ethics are to be inculcated through lectures. Open elective course on this subject is proposed to improve the important traits among the student community.
- Proposed to offer elective courses on specialized Design domain subjjects.
- Team work spirit is instilled during industry visits, internships and other extra cultural activities organized in the college.

Academic audit

S.No.	Academic Practices	2020-21	2019-20	2018-19
1	Success index of students	0.89	0.89	0.90
2	Student Faculty Ratio (SFR)	19.27	19.64	20.51
3	No.of faculty with PhD	12	10	8
4	No.of Faculty registered for PhD	--	2	5
5	Grants/ funds received for research	--	14,96,078	10,39,000
6	FDPs/ STTPs attended	13	39	57
7	Total No.of patents	13	9	8
8	Faculty research publications	16	24	12

OBE
Philosophy of the Department

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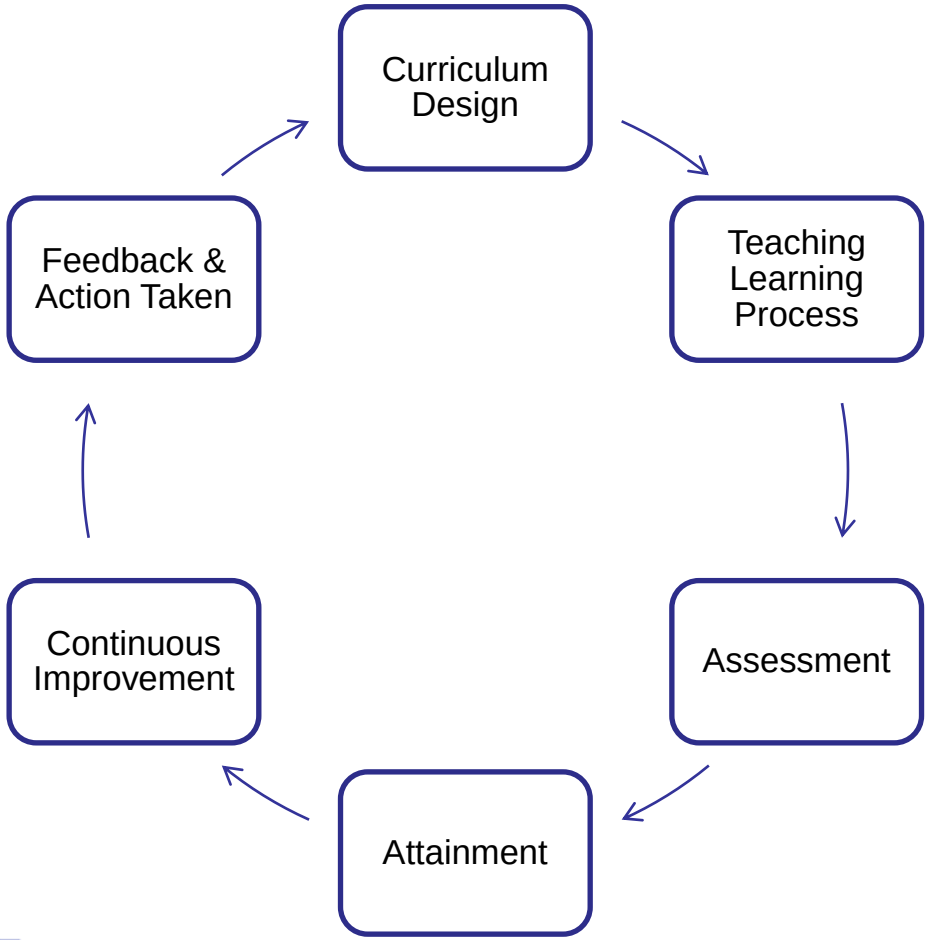

OBE OUTCOME-BASED EDUCATION

Components of the Curriculum

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Course Component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of Credits
Basic Sciences	15.6	28	25
Engineering Sciences	13.1	24	21
Humanities and Social Sciences	5.6	14	9
Program Core	41.8	78	67
Program Electives	7.5	12	12
Open Electives	5.6	9	9
Project(s)	8.1	20	13
Internships/Seminars	0.12	2	2
Any other (Please specify)	0.12	8	2
Total Number of Credits			**160**

CO-PO/PSO mapping

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Mechanics of Solids (A13308)

	Mechanics of Solids													
CO	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	Understand the concepts of stress, strain and material properties. Derive basic stress strain equations with appropriate assumptions.	3	2	3	3	3	3	3	2		2		3	3	3
CO2	Appreciate the concepts of shear force and bending moments. Generate shear force and bending moment diagrams for any given beam problem.	2	3	3	3	3			3		2		3	3	3
CO3	Determine the stresses and strains in the members subjected to bending and shear and interpret the stress distribution across various beams like rectangular, circular, triangular, I, T and angle sections.	2	3	3	3			3	2		2		3	3	3
CO4	Calculate and analyze the slope and deflection of beams under different types of loadings.	3	3	2	2				2		2		3	2	3
CO5	Analyze and compute stresses and strains in thin and thick cylinders.	3	3	3	3	3	3		2		2		3	3	2
AVG		**2.6**	**2.8**	**2.8**	**2.8**	**3**	**3**	**3**	**2.2**		**2**		**3**	**2.8**	**2.8**

Dissemination

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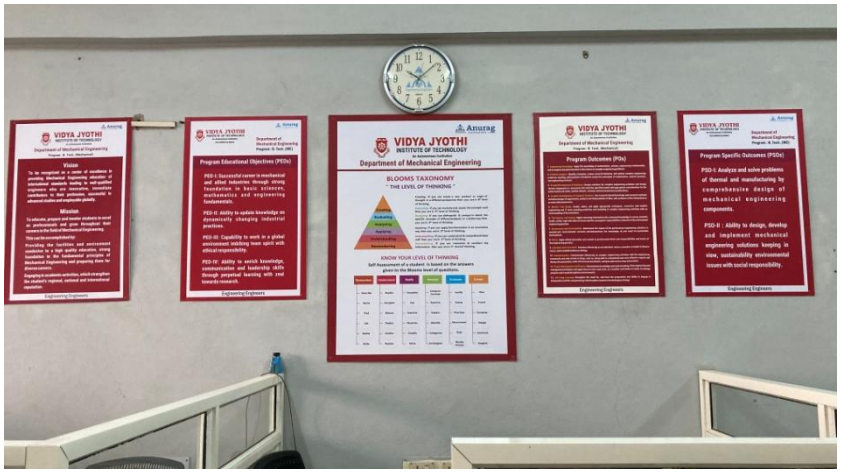
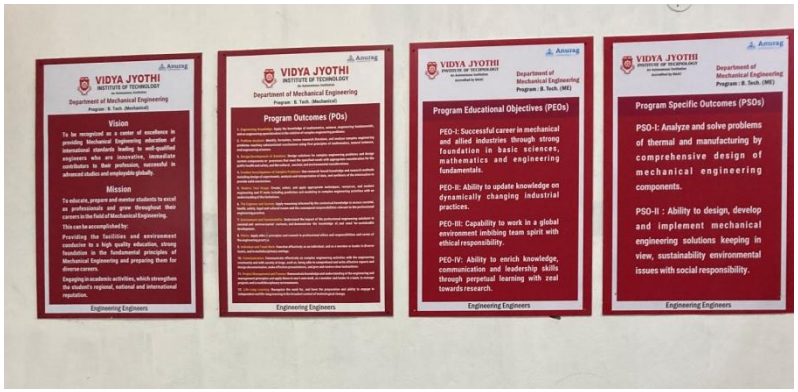
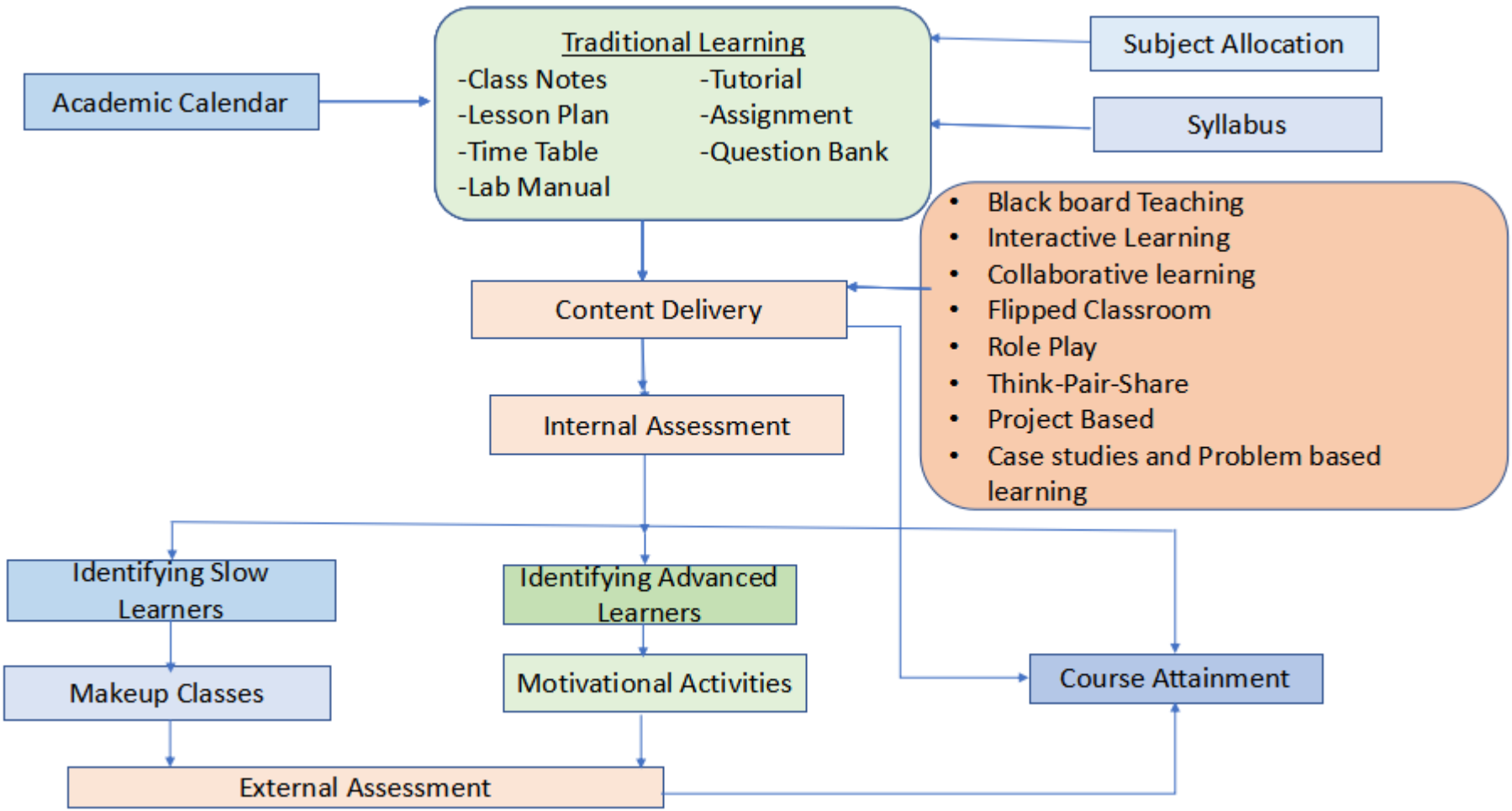




Teaching Learning Process



Teaching Learning Process

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Innovative Teaching Methods

S.No.	Teaching Methods
1	Seminars
2	Collaborative learning
3	Video
4	Workshops
5	Review Web Literature
6	PPT

S.No.	Teaching Methods
7	Think pair Share
8	Flipped Classroom
9	Project Based Learning
10	Group Discussion
11	Debate
12	Fishbowl Technique

Innovative Teaching Methods - sample

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S.NO	A.Y.	FACULTY	COURSE	TOPIC	TEACHING METHOD	SIGNIFICANCE OF RESULTS	GOALS
1	2018-19	Ms.J. Emeema	Power plant engineering	Nuclear power plant	Collaborative learning	Enables the students to actively think and process their ideas Better understanding of concepts rather than role memorization of facts and figures	To enhance learning throw working together. To increase personal growth and confidence level leading To better performance and contribute individually and as a team
2	2019-20	Mr.J. Pradeep Kumar	DMM-I	Shaft design	Fishbowl Technique	It enables the design from the strength and stiffness point of view for a given material	To distinguish the design from the strength and stiffness of the shaft during its usage
3	2020-21	Dr.V. Phanindra Bogu	CAD/CAM	3D printing	Project based Learning	3D printing creates a lot less waste material for a single part plus materials used in 3D printing generally are recyclable. The main advantages of 3D printing are realized in its Speed, Flexibility, and Cost benefits 3D Printing is enabled with CAD modeling software's to design the customized implants and prototypes	3D printing enables you to produce complex shapes using less material than traditional manufacturing methods 3D Printing manufacture customized implants and functional prototypes.

Assessment Tools

S.No.	Assessment Tool	Maximum marks
1	Theory Courses	100 (*25 -Internal & 75 External*)
2	Laboratory Courses	75 (*25 -Internal &50- External*)
3	Industry Oriented Mini Project	50
4	Technical Seminar	50
5	Comprehensive Viva	100
6	Major Project	200 (*50 -Internal &150 -External*)
7	Program Exit Survey	Indirect Assessment
8	Course End Survey	
9	Internship Feedback Survey	
10	Value Added Courses Impact survey	

Assessment Tools contd…

Sample Mid Exam Question Paper

Vidya Jyothi Institute of Technology (Autonomous)

(Accredited by NAAC & NBA, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)
(Aziz Nagar, C.B.Post, Hyderabad -500075)

IV B. Tech I Semester Mid-II Examination, January-2022

Subject: Operation Research **Branch: Mechanical**
Time: 90 Minutes **Max Marks: 20**

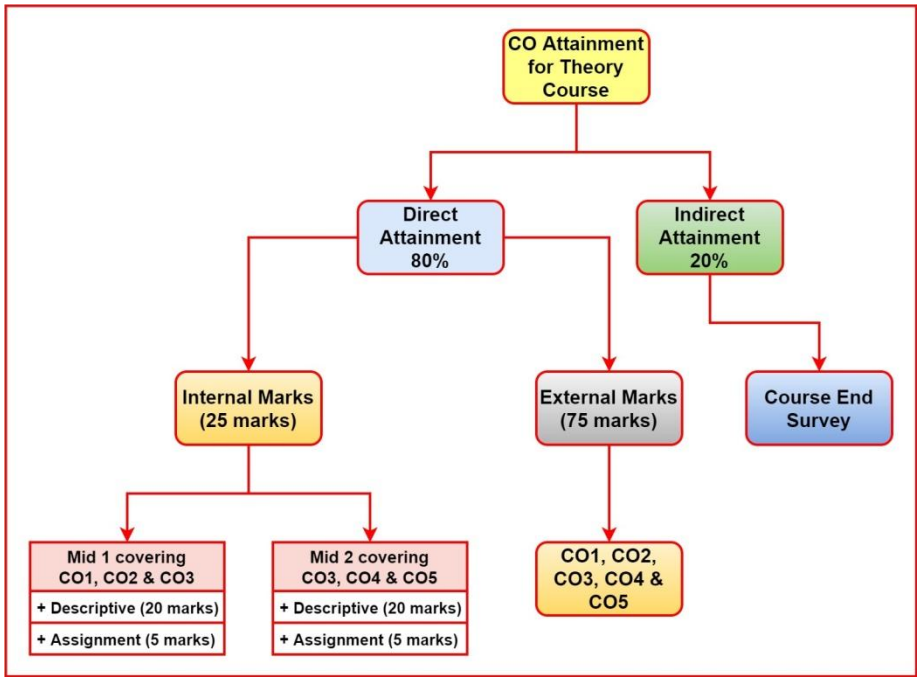
Bloom's Level:

Remember	L1
Understand	L2
Apply	L3
Analyze	L4
Evaluate	L5
Create	L6

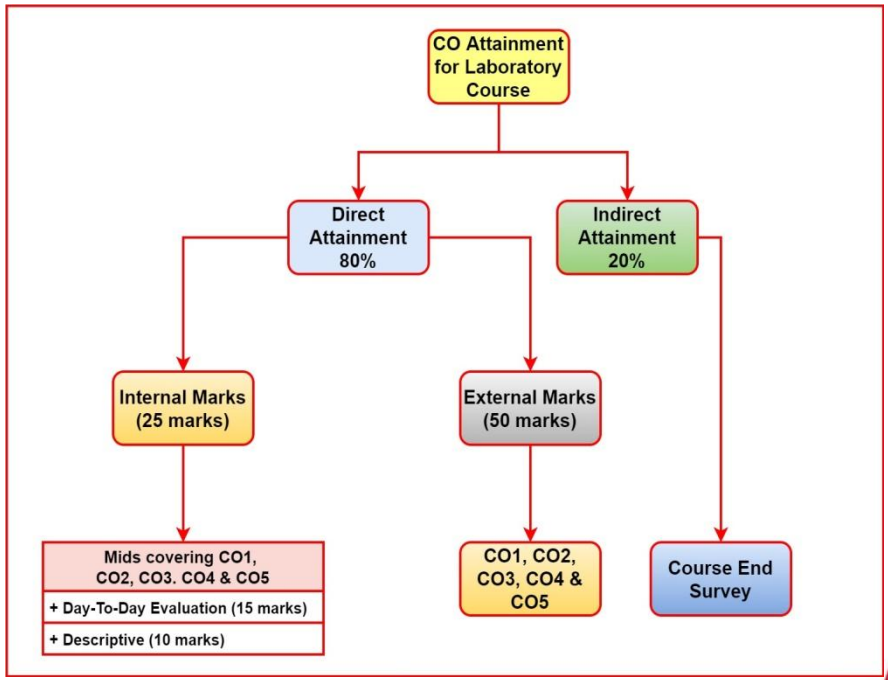
Q. No.	PART-A	B L	CO	PO	Marks
	ANSWER ALL THE QUESTIONS (3Q x 2M = 6M)				
1	Write the assumptions in sequencing problems?	L2	CO3	PO3, PO6, PO8	2M
2	What are the assumptions of Queuing model?	L2	CO4	PO2, PO5, PO6	2M
3	Define the uses of PERT and CPM.	L1	CO5	PO3, PO4, PO6	2M
	PART-B				
	ANSWER ALL THE QUESTIONS (5+5+4=14M)				
3.i)	The cost of a machine is Rs.60000.The resale value and maintenance costs every year are given below: **Year** 1 2 3 4 5 6 **Maintenance cost** 1000 1200 1400 1800 2300 2800 **Resale Value** 3000 1500 750 325 200 200 Determine the best time for replacing the machine?	L5	CO3	PO1, PO2, PO4, PO6	5M
	(OR)				
ii)	In a machine shop 6 different products are being manufactured each requiring time on two different machines A and B are given in the table below: Product 1 2 3 4 5 6 Machine-A 30 120 50 20 90 110 Machine-B 80 100 90 60 30 80 Find an optimal sequence of processing of different	L4	CO3	PO1, PO2, PO3, PO6	
	product in order to minimize the total manufactured time for all product. Find total ideal time for two machines and elapsed time.				
4.i)	Solve the game using dominance property $A=\begin{bmatrix} 5 & 20 & -10 \\ 10 & 6 & 2 \\ 20 & 15 & 18 \end{bmatrix}$	L4	CO4	PO1, PO2, PO4, PO8	5M
	(OR)				
ii)	The annual consumption of an item is 2000 units. The ordering cost is Rs.100 per order. The carrying cost is Rs.0.80 per unit, per year. Assuming working days as 200, lead time as 20 days, and safety stock as 100 units, calculate i) EOQ, ii) The number of orders per year.	L5	CO4	PO1, PO3, PO4, PO8	
5. i)	Explain the terminology of dynamic programming.	L2	CO4	PO1, PO2, PO4, PO6	4M
	(OR)				
ii)	What are the different Phases of Project Management?	L2	CO4	PO1, PO2, PO4, PO8	

VJIT (A)

Attainment of Outcomes



Theory course



Laboratory Course

Attainment of Outcomes

Course Outcome Attainment Sheet

Attainment level 1: 50% students gets more than 60% marks.

Attainment level 2: 60% students gets more than 60% marks.

Attainment level 3: 70% students gets more than 60% marks.

Attainment of Outcomes

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Course Outcome – Direct Attainment

Mid 1												
MOS_M1	Part A			Part B			Assignment					Total
Roll No:	Q1	Q2	Q3	Q4	Q5	Q6	A_Q1	A_Q2	A_Q3	A_Q4	A_Q5	Marks
17911A0301	2	2	2	5	5	4	1	1	1	1	1	25
17911A0302	2	2		2	2	3	1			1	1	14
17911A0303	1	2		1	1	1	1		1			8
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18915A0351	2	2	2	5	5	4	1	1	1	1	1	25
18915A0352	2	2	2	4	4	4	1	1	1	1	1	23
18915A0353	2	2	2	5	5	4	1	1	1	1	1	25
No of students attempted	235	229	226	239	239	250	256	256	256	256	256	
No of students who scored >= 60% Marks	195	193	197	131	131	234	249	183	211	148	228	
% of students who scored >= 60% Marks	83	84	87	55	55	94	97	71	82	58	89	
Attainment	3	3	3	1	1	3	3	3	3	1	3	

Attainment of Outcomes

VIDYA JYOTHI Institute of Technology
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Course Outcome – Direct Attainment

Mid 2												
MOS_M2	Part A			Part B			Assignment					Total
Roll No:	Q1	Q2	Q3	Q4	Q5	Q6	A_Q1	A_Q2	A_Q3	A_Q4	A_Q5	Marks
17911A0301	2	2	2	3	3	4	1	1	1	1	1	21
17911A0302	2	2		1	1	3	1			1	1	12
17911A0303	2	2		1	1	1	1			1	1	10
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18915A0351	2	2	2	4	4	4	1	1	1	1	1	23
18915A0352	2	2	2	4	5	5	1	1	1	1	1	25
18915A0353	2	2	2	4	4	4	1	1	1	1	1	23
No of students attempted	234	235	236	244	244	253	256	256	256	256	256	
No of students who scored >= 60% Marks	188	205	213	156	156	241	253	195	217	156	234	
% of students who scored >= 60% Marks	80	87	90	64	64	95	99	76	85	61	91	
Attainment	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**2**	**3**	

Attainment of Outcomes

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Course Outcome – Direct Attainment

External	
Roll No	**External Marks**
17911A0301	73
17911A0302	44
17911A0303	42
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18915A0351	72
18915A0352	70
18915A0353	74
No of students attempted	255
No: of students who scored more than 60%	176
% of students who scored more than 60%	69
Attainment	2

Attainment of Outcomes

VIDYA JYOTHI Institute of Technology
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Course Outcome – Direct Attainment

CO	Method	Value	Average	Attainment Level (Internal)	Attainment Level (External)	CO Direct Attainment (25%Int+75%Ext)
CO1	M1_D_Q1	3	2.50	2.57	2.00	**2.14**
	M1_D_Q4	1				
	M1_A_Q1	3				
	M1_A_Q2	3				
CO2	M1_D_Q2	3	2.00			
	M1_D_Q5	1				
	M1_A_Q3	3				
	M1_A_Q4	1				
CO3	M1_D_Q3	3	2.83			
	M1_D_Q6	3				
	M1_A_Q5	3				
	M2_D_Q1	3				
	M2_D_Q4	2				
	M2_A_Q1	3				
CO4	M2_D_Q2	3	2.75			
	M2_D_Q5	2				
	M2_A_Q2	3				
	M2_A_Q3	3				
CO5	M2_D_Q3	3	2.75			
	M2_D_Q6	3				
	M2_A_Q4	2				
	M2_A_Q5	3				

Attainment of Outcomes

Course Outcome – Indirect Attainment

VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

Home

COURSE END SURVEY

B.Tech (Mech) | 2017-21 | II-I

Roll Number(Opt)

Populate Course End Survey Form

Course Name/Code: ES/C201				
COs	**Description**	**Rating**		
CO1	Understanding the importance of Ecosystem and its Resources.	Poor	Average	Good
CO2	Appreciate different types of natural resources and the means to utilize them.	Poor	Average	Good
CO3	Identify diiferent root causes for pollution of environment and their control.	Poor	Average	Good
CO4	Understand the impact of global environmental problems and their assessment.	Poor	Average	Good
CO5	Know environmental policy, legislation, rules and regulations	Poor	Average	Good

Course Name/Code: NM/C202				
COs	**Description**	**Rating**		
CO1	Develop skills in solving engineering problems involving Algebraic and transcendental equations.	Poor	Average	Good
CO2	Acquires the knowledge of interpolation in predicting future out comes based on the present knowledge.	Poor	Average	Good
CO3	Evaluating the Numerical Solutions for Integrals and Fitting of different types of curves to the given data	Poor	Average	Good
CO4	Understand the various Numerical Methods to solve Initial Value Problems.	Poor	Average	Good
CO5	To solve the initial and boundary value problems of differential equations which are essential in engineering applications	Poor	Average	Good

Attainment of Course Outcomes

VIDYA JYOTHI Institute of Technology

Course	CO Attainment	Mapping Level													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO 11	PO 12	PSO1	PSO2
English-I	2.31	-	2.33	2	-	3	2.5	2	2.75	-	2.6	2	3	-	-
Mathematics - I	1.74	2.6	2.8	2	2.67	2	2.2	2	-	2	-	-	2.6	3	3
Engineering Physics-I	2.22	2.6	2.67	2.2	2	-	-	2.5	2	-	-	2	2.6	3	3
C Programming	1.74	2.8	2.8	2.8	3	2	-	-	-	-	-	1	1.75	-	-
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Plant Layout And Material Handling	2.21	3	3	2.8	2.2	3	2	2.75	2			3	2.5		3
Unconventional Machining Processes	2.19	3	2				2	3	2				3		2
Technical Seminar	3.00	2	3	3	3	3	1.5	3	1.8	2	3		3	3	2
Project Work	3.00	3	3	3	3	3	2	3	1.6	3	3	3	3	3	2.8
Comprehensive Viva	3.00	3	3			3	2	3	1.2	3	3		3	3	2.25

Attainment of PO/PSO-direct

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Course	PO Attainment													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2
English-I		1.80	1.54		2.31	1.93	1.54	2.12		2.00	1.54	2.31		
Mathematics - I	1.51	1.62	1.16	1.55	1.16	1.28	1.16		1.16			1.51	1.74	1.74
Engineering Physics-I	1.93	1.98	1.63	1.48			1.85	1.48			1.48	1.93	2.22	2.22
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Plant Layout And Material Handling	2.21	2.21	2.06	1.62	2.21	1.47	2.03	1.47			2.21	1.84		2.21
Unconventional Machining Processes	2.19	1.46				1.46	2.19	1.46				2.19		1.46
Technical Seminar	2.00	3.00	3.00	3.00	3.00	1.50	3.00	1.80	2.00	3.00		3.00	3.00	2.00
Project Work	3.00	3.00	3.00	3.00	3.00	2.00	3.00	1.60	3.00	3.00	3.00	3.00	3.00	2.80
Comprehensive Viva	3.00	3.00			3.00	2.00	3.00	1.20	3.00	3.00		3.00	3.00	2.25
Direct PO Attainment	**2.29**	**2.20**	**2.12**	**2.12**	**1.91**	**1.79**	**2.04**	**1.65**	**2.09**	**2.12**	**1.80**	**2.05**	**2.13**	**2.09**
Indirect PO Attainment	**2.78**	**2.82**	**2.85**	**2.84**	**2.86**	**2.82**	**2.84**	**2.78**	**2.84**	**2.80**	**2.76**	**2.86**	**2.87**	**2.82**
Overall PO Attainment	**2.39**	**2.33**	**2.27**	**2.27**	**2.10**	**2.00**	**2.20**	**1.87**	**2.24**	**2.26**	**1.99**	**2.21**	**2.28**	**2.24**

Attainment of PO/PSO-Indirect

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PO/ PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2
Program Exit Survey	2.80	2.72	2.86	2.79	2.89	2.78	2.78	2.72	2.83	2.75	2.82	2.84	2.84	2.81
Value Added Courses Survey	2.79	2.86	2.83	2.85	2.83	2.82	2.86	2.86	2.88	2.77	2.72	2.89	2.92	2.79
Internships Survey	2.76	2.88	2.85	2.88	2.85	2.86	2.89	2.77	2.81	2.88	2.74	2.85	2.84	2.86
Indirect PO attainment	**2.78**	**2.82**	**2.85**	**2.84**	**2.86**	**2.82**	**2.84**	**2.78**	**2.84**	**2.8**	**2.76**	**2.86**	**2.87**	**2.82**

Continuous Improvement of Programme Outcomes

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PO/ PSO Attainments for Batches 2015-2019 to 2017-2021

PO/ PSO	2015-2019	2016-2020	2017-2021
PO1	2.39	2.40	2.41
PO2	2.33	2.31	2.32
PO3	2.27	2.24	2.25
PO4	2.27	2.26	2.25
PO5	2.10	2.09	2.09
PO6	2.00	1.98	2.00
PO7	2.20	2.19	2.20
PO8	1.87	1.85	1.86
PO9	2.24	2.21	2.21
PO10	2.26	2.26	2.25
PO11	1.99	1.99	2.00
PO12	2.21	2.21	2.19
PSO1	2.28	2.26	2.26
PSO2	2.24	2.25	2.22

Feedback & Action Taken

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ACTIONS TAKEN BASED ON STAKE HOLDERS FEEDBACK
ACADEMIC YEAR: 2019-2020

S.No.	Department	Suggestions given	Feedback Obtained from	Stakeholder details	Actions Taken
1	EEE	As there will be less interaction between students and college in IV-II, please ensure that good reference books,for all subjects are available for self preparation of students	Students	SHRAVANI, Roll No:16911A0223,EEE Student	Course wise, Syllabus matching with text books and reference books is done by faculty to ensure that all the topics of the syllabus are covered in the text books and reference books proposed in syllabus books
2	CIVIL	coaching for competitive exams	Alumni	M.Akshitha, Student ,CIVIL	Students are trained on Civil courses for GATE examination.
3	EEE	support for higher education and competitive exams		Mr.B.Vijay Kumar, Roll No:1691A50203, EEE student, currently pursuing MTech	Competitive exams oriented training classes were conducted for IV year students during November 2020
4	Mechanical	The students should know theoretical and pratical knowledge		Jongoni.pavan goud,Apprentice, Adani power Maharashtra	Value added courses are included for students to acquire practical skills in addition to revision in syllabus in R18 regulations.
5	IT	Concepts like frameworks and web services can be added to web technologies and more UNIX can be focused. These 2 are what helps the student in transforming to an employee.		Himaja Kokkiligadda, Associate Engineer - Tata Consultancy Services, Roll No: 16911A1224	Introduced new courses like IOT, Machine Learning, Block chain technologies
6	MBA	I have gained abundant knowledge throughout my course, however the only request I would make is to conduct more activities and programmes which helps the students to excel beyond academics.		Harshitha Gangalam, Quality Analyst, Amazon	Management Clubs are established for conducting more activities and programs to improve the skills of MBA students

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Best Practices

- Course Description Document (CDD)
- In-House Projects

Perspective Plan

- Improving the Rapport/consultancy by closely working on live projects with industries.
- Working towards research projects supported by DST/CSIR.
- Setting up of centers of excellence with industry partnership.
- Augmenting the training facilities to improve the internship and placement of students.
- Incorporating additional courses leading to minor degree

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Thank you