VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA

SELF ASSESSMENT REPORT(TIER - I) FOR Production Engg.

Part A : Institutional Information

1   Name and Address of the Institution

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA,
PO. BURLA ENGINEERING COLLEGE DIST. SAMBALPUR (ODISHA)

2   Name and Address of Affiliating University

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY

3   Year of establishment of the Institution:

2009

4   Type of the Institution:

○ Institute of National Infortance	○ Autonomous
◉ University	○ Any other(please specify)
○ Deemed University	

5   Ownership Status:

○ Central Government	☐ Trust
◉ State Government	☐ Society
○ Government Aided	☐ Section 25 Company
○ Self financing	☐ Any Other(Please Specify)

6   Other Academic Institutions of the Trust/Society/Company etc., if any

Name of Institutions	Year of Establishment	Programs of Study	Location

7   Details of all the programs being offered by the Institution under consideration:

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
M Tech in Production Engineering (Manufacturing System Engineering)	PG	2012	2012	18	No	18	Withdrawn (specify visit dates, year)	--	--	No	2
M Tech in Production Engineering (Robotics & CAD-CAM)	PG	2018	2018	18	No	18	Not eligible for accreditation	--	--	No	2
B Tech in Production Engineering	UG	1996	1996	30	Yes	60	Granted accreditation for 5 years for the period (specify period)	2017	2022	Yes	4

Sanctioned Intake for Last Five Years for the B Tech in Production Engineering	
Academic Year	**Sanctioned Intake**
2023-24	60
2022-23	60
2021-22	60
2020-21	60
2019-20	60
2018-19	60

8   Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Civil Engg.
2	Under Graduate	Engineering & Technology	Electrical Engg.
3	Under Graduate	Engineering & Technology	Mechanical Engg.
4	Under Graduate	Engineering & Technology	Production Engg.
5	Under Graduate	Engineering & Technology	Electronics & Telecommunications Engineering

9   Total number of employees

A. Regular* Employees (Faculty and Staff):

Items	2023-24		2022-23		2021-22	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	119	122	122	124	124	125
Faculty in Engineering (Female)	56	56	56	56	56	56
Faculty in Maths, Science & Humanities teaching in engineering program (Male)	31	32	32	32	32	33
Faculty in Maths, Science & Humanities teaching in engineering program (Female)	6	6	6	6	6	6
Non-teaching staff (Male)	110	117	117	129	129	139
Non-teaching staff (Female)	11	11	11	11	11	11

B. Contractual* Employees (Faculty and Staff):

Items	2023-24		2022-23		2021-22	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	12	12	11	11	10	10
Faculty in Engineering (Female)	7	7	6	7	5	5
Faculty in Maths, Science & Humanities teaching in engineering Programs (Male)	10	10	11	11	9	9
Faculty in Maths, Science & Humanities teaching in engineering Programs (Female)	12	12	13	14	10	12
Non-teaching staff (Male)	60	76	76	91	91	114
Non-teaching staff (Female)	06	08	08	08	08	11

10   Total number of Engineering students:

Engineering and Technology- UG	☑ Shift1	☐ Shift2
Engineering and Technology- PG	☑ Shift1	☐ Shift2
Engineering and Technology- Polytechnic	☐ Shift1	☐ Shift2
MBA	☐ Shift1	☐ Shift2
MCA	☑ Shift1	☐ Shift2

Engineering and Technology- UG Shift-1

Course Name	2023-24	2022-23	2021-22
Total no. of Boys	2859	2790	2671
Total no. of Girls	1132	1025	962
Total	**3991**	**3815**	**3633**

Engineering and Technology- PG Shift-1

Course Name	2023-24	2022-23	2021-22
Total no. of Boys	149	197	240
Total no. of Girls	117	118	146
Total	**266**	**315**	**386**

Engineering and Technology- MCA Shift-1

Course Name	2023-24	2022-23	2021-22
Total no. of Boys	57	49	43
Total no. of Girls	21	20	17
Total	**78**	**69**	**60**

11   Vision of the Institution:

To emerge as an internationally acclaimed Technical University to impart futuristic technical education and creation of vibrant research enterprise to create quality engineers and researchers, truly world class leader and unleashes technological innovations to serve the global society and improve the quality of life.

12 Mission of the Institution:

The Veer Surendra Sai University of Technology, Odisha, Burla strives to create values and ethics in its products by inculcating depth and intensity in its education standards and need based research through

§ Participative learning in a cross-cultural environment that promotes the learning beyond the class room.

§ Collaborative partnership with industries and academia within and outside the country in learning and research.

§ Encouraging innovative research and consultancy through the active participation and involvement of all faculty members.

§ Facilitating technology transfer, innovation and economic development to flow as natural results of research where ever appropriate.

§ Expanding curricula to cater broader perspectives.

Creation of service opportunities for upliftment of the society at large.

13 Contact Information of the Head of the Institution and NBA coordinator, if designated:

Head of the Institution	
Name	Prof. Banshidhar Majhi
Designation	Vice-Chancellor
Mobile No.	8056201404
Email ID	vc@vssut.ac.in

☑**NBA Coordinator, If Designated**

Name	Dr. Sasmita Behera
Designation	Assistant Professor
Mobile No.	9437367106
Email ID	sbehera_eee@vssut.ac.in

PART B: Criteria Summary

Critera No.	Criteria	Total Marks	Institute Marks
1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	50	50.00
2	PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES	100	100.00
3	COURSE OUTCOMES AND PROGRAM OUTCOMES	175	175.00
4	STUDENTS' PERFORMANCE	100	80.43
5	FACULTY INFORMATION AND CONTRIBUTIONS	200	173.54
6	FACILITIES AND TECHNICAL SUPPORT	80	80.00
7	CONTINUOUS IMPROVEMENT	75	75.00
8	FIRST YEAR ACADEMICS	50	45.89
9	STUDENT SUPPORT SYSTEMS	50	50.00
10	GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	120	120.00
		Total	**1000**	**950**

Part B : Criteria Summary

| 1 VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (50) | Total Marks 50.00 |

1.1 State the Vision and Mission of the Department and Institute (5)

Total Marks 5.00

Institute Marks : 5.00

Vision of the institute	To emerge as an internationally acclaimed Technical University to impart futuristic technical education and creation of vibrant research enterprise to create quality engineers and researchers, truly world class leader and unleashes technological innovations to serve the global society and improve the quality of life.
Mission of the institute	The Veer Surendra Sai University of Technology, Odisha, Burla strives to create values and ethics in its products by inculcating depth and intensity in its education standards and need based research through § Participative learning in a cross-cultural environment that promotes the learning beyond the class room. § Collaborative partnership with industries and academia within and outside the country in learning and research. § Encouraging innovative research and consultancy through the active participation and involvement of all faculty members. § Facilitating technology transfer, innovation and economic development to flow as natural results of research where ever appropriate. § Expanding curricula to cater broader perspectives. Creation of service opportunities for upliftment of the society at large.
Vision of the Department	To be recognized as a center of excellence in education and research in the field of Production Engineering by producing innovative, creative and ethical Production Engineering professionals for socio-economic upliftment of society in order to meet the global challenges.

Mission of the Department	Mission No.	Mission Statements
	M1	Maintaining state of the art research facilities to provide conducive environment to create, analyze, apply and disseminate knowledge.
	M2	Fortifying collaboration with world class R&D organizations, educational institutions, industry and alumni for excellence in teaching, research and consultancy practices to fulfil 'Make In India' policy of the Government and impart social responsibility among the graduates.
	M3	Providing the students with academic environment of excellence, leadership, ethical guidelines and lifelong learning needed for a long productive career.

1.2 State the Program Educational Objectives (PEOs) (5)

Total Marks 5.00

Institute Marks : 5.00

PEO No.	Program Educational Objectives Statements
PEO1	To acquire competency in solving real-life problems and to design/develop sustainable and cost-effective products according to the prevailing socio-economic context.
PEO2	To make them enable to excel in their professional career/entrepreneurial skill/research and higher studies.
PEO3	To provide opportunity to work and communicate effectively in a team and to engage in the process of life-long learning.

1.3 Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (15)

Total Marks 15.00

Institute Marks : 15.00

The vision and mission of the University is available at: https://www.vssut.ac.in/vision_mission.php (https://www.vssut.ac.in/vision_mission.php)

The vision and mission of the University are also displayed through notice boards across the campus.

The vision, mission and the PEOs of the B. Tech Program in Production Engineering of the department are available at: https://www.vssut.ac.in/department.php?url=production-engineering (https://www.vssut.ac.in/department.php?url=production-engineering)

The vision, mission and the PEO of the department are also displayed through notice boards inside the department and in the Syllabus book of the program.

The vision, mission and PEOs are reviewed every 3-4 years to ensure they are relevant and are aligned with missions of both the University, School and the department, Program outcomes and Program Specific Outcomes and the program curricula. This review is done through feedbacks taken from faculty members, students, alumni, parents, industry experts, eminent academicians, members of Board of Studies and the academic audit team.

Information on the vision, mission and the PEOs are also disseminated during

> Freshers' orientation/induction program

> Students Interaction and meets

> Alumni meets

> During training and placement activities of the university

> Faculty meetings

> Academic audits

> Meetings of Board of Studies

> And any other dissemination method deemed fit.

Locations where the Vision, Mission and PEOs are published and disseminated.

Sl. No.	Location	Institute		Department		
		Vision	Mission	Vision	Mission	PEOs
1	Institute Website/ Departmental Webpage	✔	✔	✔	✔	✔
2	Department Newsletter & Notice Board	✔	✔	✔	✔	✔
3	Course file			✔	✔	✔
4	Lab Manual			✔	✔	✔
5	Conference workshop/Brochures	✔	✔	✔	✔	
6	Outside Department Office			✔	✔	✔
7	HOD Chamber			✔	✔	✔
8	Laboratories	✔	✔	✔	✔	✔

1.4 State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)   Total Marks 15.00

Institute Marks : 15.00

The department established the vision and mission through a consultative process involving the stakeholders of the department as depicted in Figure 1.1.

To set up the vision and mission of the department and PEOs of the program, the accompanying steps are taken after

Step 1: The vision and mission of the Department have been framed by considering short- and long-term goals for the School (School of Mechanical Sciences) keeping alignment with the vision and mission of the University. A committee is set up to propose the vision, mission, PEOs of the department.

Step 2: The Department collects feedback and inputs from the entire stakeholder mainly from Graduates, Alumni, Parents, faculty members, Industry representatives, Eminent academicians, Academic and Research partners, Internal Quality Assurance Cell etc.

Step 3: A school level committee had drafted the vision and mission statements after performing the SWOT analysis for the School and ensuring that the mission statements of the University were aligned with the PEOs of the different programs offered, the curricula and vice versa.

Step 4: The consolidation of all the inputs passes through the Department Academic Committee and put in the meeting of Board of Studies (BoS) for their recommendations and subsequently, passed through the academic council meeting for necessary modifications.

Step 5: Finally, the vision and mission of the Department is settled after endorsement of the competent authority.

The process for redefining Vision and Mission Statements and subsequently the PEOs is depicted in the following figure.
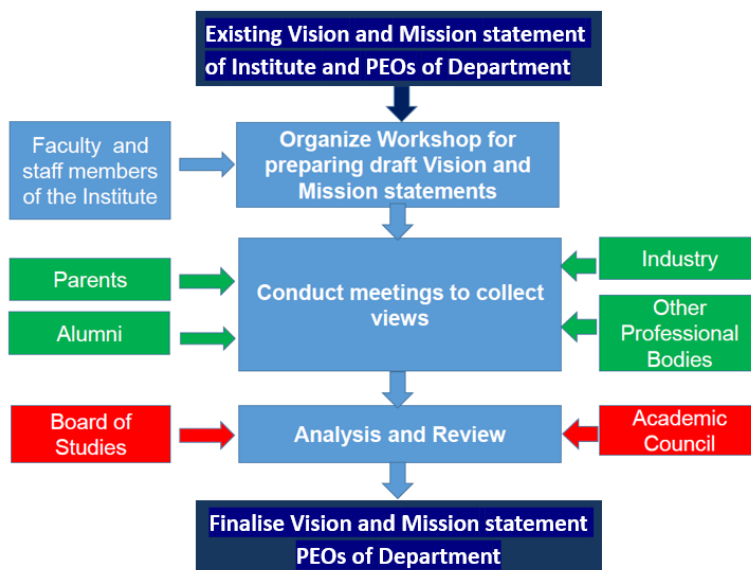

Figure 1.2 Process for redefining Vision and Mission Statements and PEOs

The justification of consistency of the Department Vision and Mission with the Institute Vision and Mission is provided in the following table.

Table 1.1: Consistency of Vision of the department with that of the University	
Components of Vision Statement of the University	Components of Vision Statement of the Department
To emerge as an internationally acclaimed Technical University	To create an advanced centre of professional learning of international standing
To impart futuristic technical education and creation of vibrant research enterprise to create quality engineers and researchers, truly world class leader	For crafting engineers and researchers with skill sets matching the requirement of industries, healthcare and commerce in a diverse society.
Unleashes technological innovations to serve the global society and improve the quality of life	
Consistency of Mission of the department with that of the University	
Components of Mission Statement of the University	Components of Mission Statement of the Department
Participative learning in a cross-cultural environment that promotes the learning beyond the class room.	To design curricula towards addressing contemporary needs in industries, academia and entrepreneurship.
Collaborative partnership with industries and academia within and outside the country in learning and research.	To develop collaborations with industries and academia within and outside the country towards promoting exchange in students, faculty and technical know-how
Encouraging innovative research and consultancy through the active participation and involvement of all faculty members.	To encourage students and faculty members for active participation and involvement in innovative research and consultancy.

Facilitating technology transfer, innovation and economic development to flow as natural results of research where ever appropriate.	To prepare students for analysing and solving problems, and apply these abilities to generate new knowledge, ideas or products in academia, industry or government by utilizing fundamental technical knowledge and skills in Production Engineering
Expanding curricula to cater broader perspectives.	To promote independent learning among students so that they take in themselves in high end research work through continuous learning and build skills beyond curriculum
Creation of service opportunities for upliftment of the society at large.	To inculcate vital skills of leadership, team spirit, communication and ethics among students from diverse groups. To encourage students and faculty to engage in imparting appropriate skill to the socially and economically backward persons.

1.5 Establish consistency of PEOs with Mission of the Department (10) Total Marks 10.00

Institute Marks : 10.00

Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

PEO-1 To acquire competency in solving real-life problems and to design/develop sustainable and cost-effective products according to the prevailing socio-economic context.

Graduates shall demonstrate professional responsibility and thrive to reinforce their knowledge being a part of formal or informal education programs.

The institute and the department focus on providing and facilitating technical education of high quality and international standard to its students thereby producing able graduates in their field of expertise. The graduates are expected to possess analytical and creative skills based on their years of study in the program which includes an appropriate mix of professional core courses, wide choice of elective courses, laboratory sessions, industrial trainings, hands-on projects and open-ended exercises. They are also expected to keep themselves up dated with emerging technologies and industrial revolutions in their respective fields so as to provide or suggest suitable solutions to different Production Engineering problems, and lead a successful career in their area.

Students can gain domain knowledge in manufacturing, design, heat power, and operational management by immersing themselves in fundamental technical knowledge and skills in mechanical engineering fields in order to solve real-world problems and develop new ideas or products in academia, industry, or government sector. Students were also involved in high end research work through continuous learning, critical thinking, hands on project and open-ended problems which inculcate research spirit and creative abilities in them. This also helps students prepare for obstacles in their professional, further education, or entrepreneurship careers.

PEO-2 To make the graduates enable to excel in their professional career/entrepreneurial skill/research and higher studies.

The graduates will be able to perceive the limitation and impact of engineering solutions in different contexts (as mentioned in PEO 2) in a better way if they maintain close interaction with industries, alumni and community partners, and keep themselves updated with state-of-the-art technologies. Consequently, they are expected to take decisions in deploying engineering solutions or promoting entrepreneurship keeping social, legal, environmental and economical aspects in consideration. This will also help them to inculcate global perspective in attitude.

PEO-3 To provide opportunity to work and communicate effectively in a team and to engage in the process of life-long learning.

All these mission statements directly reflect the professional responsibilities of a graduate for the concerned undergraduate engineering program. The professionals are expected to keep on learning and remain updated with emerging technologies from time to time. They should also emphasize on upgrading their academic qualification through different short term or long-term educational programs.

PEO Statements	M1	M2	M3
To acquire competency in solving real-life problems and to design/develop sustainable and cost-effective products according to the prevailing socio-economic context.	3	2	3
To make them enable to excel in their professional career/entrepreneurial skill/research and higher studies.	2	3	3
To provide opportunity to work and communicate effectively in a team and to engage in the process of life-long learning.	3	3	3

2 PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (100) Total Marks 100.00

2.1 Program Curriculum (30) Total Marks 30.00

2.1.1 State the process for designing the program curriculum (10)

<div align="right">Institute Marks : 10.00</div>

The department has taken several measures through a process for designing the program curriculum in order to accomplish the program outcomes. The inputs from various processes such as workshops, seminars, board of studies, and academic council as well as from academicians and industry are collected and subsequently analyzed for enriching the curriculum. The activity for designing the curriculum is explained in Figure 2.1.

The curriculum for the programme is basically designed by a centralize board of studies (BOS) involving academicians from IITs, NITs and expert from industry with a view to accomplish the stated POs, as per the guidelines issued by AICTE/UGC from time to time and approved by the academic council of the University.

However, curriculum design process is initiated by the Curriculum review committee (CRC, faculty council) that prepares a curricular frame (Course structure and course contents) considering feedbacks from stake holders including faculty, students and guardians under the category of educational experience. The CRC also consults PEOs, POs, Graduate attributes, Program specific criteria laid out by ABET/ASME and benchmark the existing curricula of similar program run by leading educational institutions (IITs, NITs and foreign universities) before designing the curriculum. Information from prospective employers are also sought for to generate 'data on future'. Considering the input information the CRC prepares a draft and sends to the program assessment committee (PAC) for review comments. The draft curriculum with review comments is sent to the Program Coordinator for detailing with help of course module coordinators. At this stage the course outcomes (COs) are discussed along with delivery and assessment methods. The CO/PO and PEO/PO alignment is done in coordination with the IQAC. In case of deficiencies it is sent back to the CRC. After acceptance, it is placed in front of Department Board of Studies (DBOS) for discussion, rectifications or any other incorporation. It further is routed through the Academic Council for final review. New curriculum comes to force only on approval from the Academic Council.

The curriculum is periodically refined/revised by the members of BOS according to the feedbacks, suggestion and recommendation of the stake holders, industry requirements (data collected from placement cell), latest technological development and faculty expertise available in the department in consultation with the IQAC. During every revision, the members of BOS suggest changes in curriculum, which are then finalized by the senate and members of Board of Management (BOM).
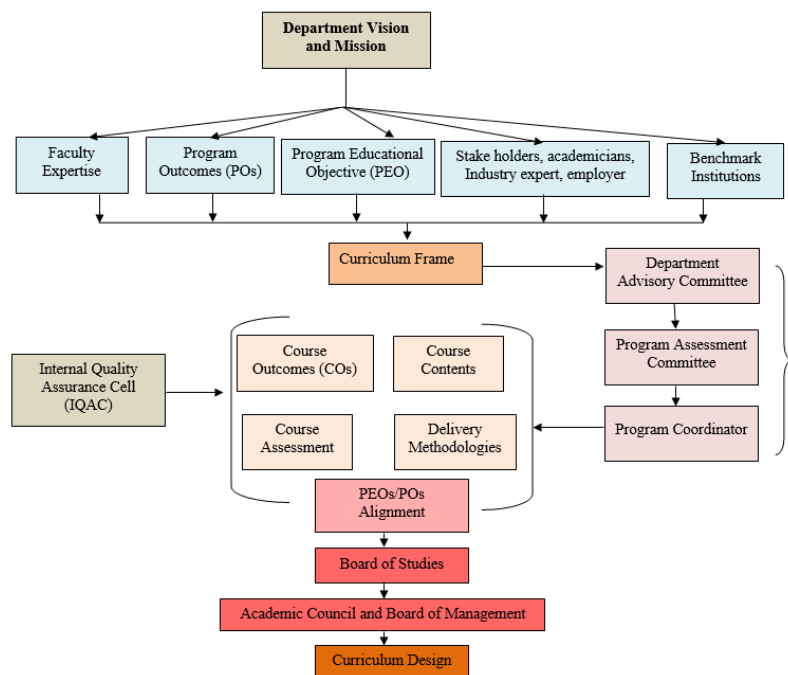

Figure 2.1. Curriculum development process

2.1.2 Structure of the Curriculum (5)

<div align="right">Institute Marks : 5.00</div>

ID	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	Theory Credits	Practical Credits	Total Credits
1	BMA01001	Mathematics-I	3	1	0	4	4	0	4
2	BCH01001	Chemistry	3	0	0	3	3	0	3
3	BEC01001	Basic Electronics	3	0	0	3	3	0	3
4	BIT01001	Programming for Problem Solving	3	0	0	3	3	0	3
5	BCE01001	Basic Civil Engg.	3	0	0	3	3	0	3
6	BCH01002	Chemistry Lab	0	0	3	3	0	1.5	1.5
7	BEC01002	Basic Electronics Lab	0	0	3	3	0	1.5	1.5
8	BIT01002	Programming Lab	0	0	3	3	0	1.5	1.5
9	BCE01002	Engineering Graphics & Design	0	0	3	3	0	1.5	1.5
10	BNC01001	Induction Programme and Participation in Clubs/Societies	0	0	0	0	0	0	0
11	BMA02001	Mathematics - II	3	1	0	4	4	0	4
12	BPH02001	Physics	3	0	0	3	3	0	3
13	BEE02001	Basic Electrical Engg.	3	0	0	3	3	0	3
14	BHU02001	English For Business Communication	3	0	0	3	3	0	3
15	BME02001	Engineering Mechanics	3	0	0	3	3	0	3
16	BPH02002	Physics Lab	0	0	3	3	0	1.5	1.5
17	BEE02002	Basic Electrical Engg. Lab	0	0	3	3	0	1.5	1.5
18	BHU02002	Business Communication Skills Lab	0	0	3	3	0	1.5	1.5
19	BME02002	Workshop & Manufacturing Practices	0	0	3	3	0	1.5	1.5
20	BNC02001	NSS/NCC/Yoga	0	0	0	0	0	0	0
21	BMA03001	Math-III	3	1	0	4	4	0	4
22	BPE03001	Thermodynamics	3	0	0	3	3	0	3
23	BPE03002	Material Engineering & Metallurgy	3	0	0	3	3	0	3
24	BPE03003	Basic Manufacturing Processes	3	0	0	3	3	0	3
25	BHU03001	Economics For Engineers	3	0	0	3	3	0	3
26	BEE03004	Instrumentation and Sensor Technology for Engg. Applications	0	0	3	3	0	1.5	1.5
27	BPE03004	Production Practice-I	0	0	3	3	0	1.5	1.5
28	BPE03005	Computer Aided Machine Drawing	0	0	3	3	0	1.5	1.5
29	BPE03006	Thermal & Materials Engineering Lab.	0	0	3	3	0	1.5	1.5
30	BNC03001	Essence of India Traditional Knowledge/ Environmental Sciences	0	0	0	0	0	0	0
31	BMA04001	Math IV	3	0	0	3	3	0	3
32	BPE04001	Theory of Machine	3	1	0	4	4	0	4
33	BPE04002	Strength of Materials	3	0	0	3	3	0	3
34	BPE04003	Theory of Metal Cutting	3	0	0	3	3	0	3
35	BHU04001	Organizational Behavior	3	0	0	3	3	0	3
36	BPE04004	Production Practice-II	0	0	3	3	0	1.5	1.5
37	BPE04005	Metal Cutting Lab.	0	0	3	3	0	1.5	1.5
38	BPE04006	Dynamics Lab	0	0	3	3	0	1.5	1.5
39	BPE04007	Material Testing Lab.	0	0	3	3	0	1.5	1.5
40	BNC04001	Environmental Sciences/ Essence of India Traditional Knowledge	0	0	0	0	0	0	0
41	BNC04002	Summer Internship/ Training	0	0	0	0	0	0	0
42	BPE05001	Design of Machine Elements	3	0	0	3	3	0	3
43	BPE05002	Inspection and Metrology	3	0	0	3	3	0	3

44	BPE05003	Tool Design	3	0	0	3	3	0	3
45	BPEPE501 ,BPEPE502	Measurement & Instrumentation ,Advanced Casting & Welding	3	0	0	3	3	0	3
46	BPEOE501	Maintenance Engineering & Management	3	0	0	3	3	0	3
47	BHU2501	Professional Ethics	2	0	0	2	2	0	2
48	BPE05004	Machine Design Sessional	0	0	3	3	0	1.5	1.5
49	BPE05005	Metrology Lab.	0	0	3	3	0	1.5	1.5
50	BPE05006	Tool Design Sessional	0	0	3	3	0	1.5	1.5
51	BPE06001	Theory of Metal Forming	3	0	0	3	3	0	3
52	BPE06002	Principle of Machine Tools	3	0	0	3	3	0	3
53	BPEPE601, BPEPE602	Fluid Mechanics & Fluid Power Engineering, Manufacturing & Design of Composites	3	0	0	3	3	0	3
54	BPEPE605, BPEPE606	Statistical Methods and Design of Experiments, Finite Element Method in Manufacturing	3	0	0	3	3	0	3
55	BPEOE602	Production and Operation Management	3	0	0	3	3	0	3
56	BHU2502	Financial Management Costing	2	0	0	2	2	0	2
57	BPE06003	Metal Forming Lab	0	0	3	3	0	1.5	1.5
58	BPE06004	Fluid Dynamics Lab	0	0	3	3	0	1.5	1.5
59	BPE06005	Simulation Lab.	0	0	3	3	0	1.5	1.5
60	BPE07001	Automation and NC Machine	3	0	0	3	3	0	3
61	BPE07002	Non Traditional Machining	3	0	0	3	3	0	3
62	BPEPE701, BPEPE702	Engineering Ergonomics, Surface Engineering Principles &Systems	3	0	0	3	3	0	3
63	BPEOE702	Total Quality System and Engineering	3	0	0	3	3	0	3
64	BPE07003	NTM & FMS Lab	0	0	3	3	0	1.5	1.5
65	BPE07004	Project – I	0	0	6	6	0	3	3
66	BPE07005	Seminar on internship	0	0	3	3	0	1.5	1.5
67	BPEPE801, BPEPE804	Robotics & Flexible Manufacturing Systems, Quality Assurance & Reliability	3	0	0	3	3	0	3
68	BPEPE805, BPEPE806	Rapid Prototyping & Tooling, Computer Integrated Manufacturing	3	0	0	3	3	0	3
69	BEPEOE802	Entrepreneurship & E-Business	3	0	0	3	3	0	3
70	BPE08001	Project II	0	0	12	12	0	6	6
71	BPE08002	Seminar on Project	0	0	2	2	0	1	1
		Total	**115**	**4**	**92**	**211**	**119**	**46.0**	**165.0**

2.1.3 State the components of the curriculum (5)   Institute Marks : 5.00

Course Components	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Basic Sciences	14.5	27.00	24
Engineering Sciences	18.2	33.00	30
Humanities and Social Scienc	8.8	16.00	14
Program Core	32.4	72.00	54
Program Electives	10.9	18.00	18
Open Electives	7.3	12.00	12
Project(s)	5.4	18.00	9
Internships/Seminars	1.5	5.00	4
Any other (Please specify)	1	0.00	0
Total number of Credits			**165**

2.1.4 State the process used to identify extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I (10)   Institute Marks : 10.00

The curriculum for B. Tech. in Production Engineering maintains a balance among various categories of courses from Science, Mathematics, Engineering Science, Humanities and Management, Professional core, professional electives, open elective Projects and Internship components. The syllabus for each course has been designed to comply with the curriculum for attaining the POs and PSOs defined for the program. The components of the curriculum contributing towards each required segments are shown in Fig. 2.2.
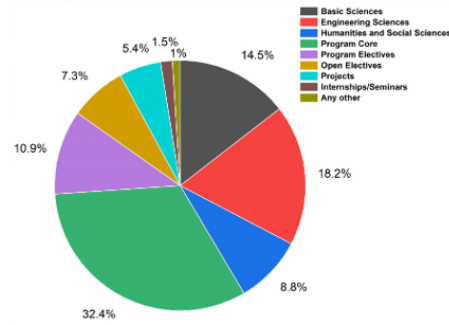

Figure 2.2 Curriculum Content (%)

The process used to identify extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes is depicted in Figure 2.3.

The curriculum development process is illustrated in Figure 2.1. Program curriculum and syllabus is approved by Board of Studies and the assessment of the curriculum and syllabus is done by internal and external members.

Each subject has five Course Outcomes (COs). The course outcomes are mapped to relevant Program Outcomes (POs) namely PO 01 to PO12 along with three Program Specific Outcomes (PSOs). The mapping is done by team of faculty along with Head of the Department. All course outcomes of the courses are mapped with the POs and PSOs along with their level of correlation: 1 (low), 2(medium) and 3 (high). It is ensured that all POs/PSOs are adequately covered by the courses being taught and each course is mapped to high correlation level with at least one PO. It also ensured that all POs/PSOs have high correlation with adequate number of courses.

After CO-PO and CO-PSO mapping, discussion with faculty members regarding the compliance of the curriculum is done through department meeting. The collected views are taken to Internal Quality Assurance Cell (IQAC). The POs and PSOs attainment are calculated considering cumulative internal assessment and end semester assessment. Feedbacks are also collected from Alumni, graduates and employers for indirect attainment of POs and PSOs. Finally, the POs and PSOs attainment is calculated considering the relative weightage of direct attainment and indirect attainment.

The attainments are discussed in the Department Academic Committee and BOS meeting; if any modifications are required in the curriculum will be modified.

The IQAC conducts a curriculum workshop in every four years with the stake holders. The cell collects feedback, suggestions, and modifications from stakeholders and submits the same to the Departmental Syllabus Committee (DSC) to prepare/modify the curriculum. The DSC members analyze whether the curriculum meets the desired program outcome and program specific outcome. If necessary, it will suggest the introduction of new electives and one credit courses to meet specific program or program specific outcome.

The views expressed by DSC will be expressed in the Board of Studies (BoS). The BoS members will analyze the recommendation so that the contents fulfil all the statutory requirements, else it is again returned for review.

Redrafting the curriculum is made on the basis of valuable comments of BoS, the final draft is sent for Academic Council approval.

Taking the comments from the members of Academic Council into consideration, final draft syllabus is put to the approval of Board of Management. The approved curriculum is circulated to various stakeholders for implementation.
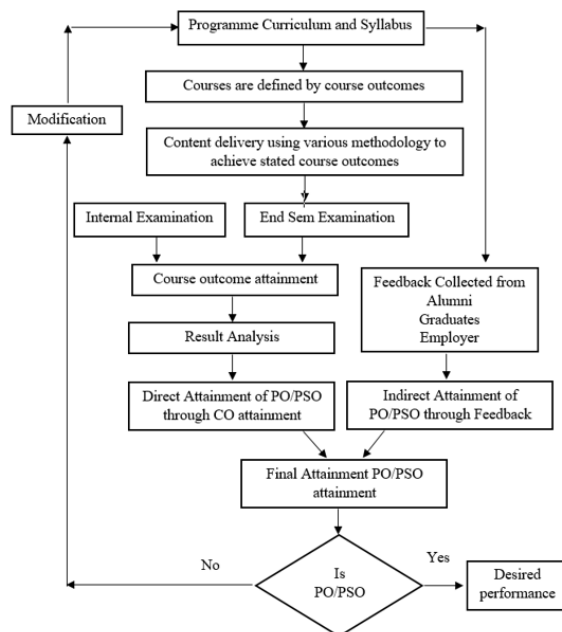
Fig. 2.3 Process for Identifying extent of compliance of curriculum.

2.2 Teaching-Learning Processes (70)   Total Marks 70.00

2.2.1 Describe Processes followed to improve quality of Teaching & Learning (15)   Institute Marks : 15.00

1. A systematic and holistic procedure is adopted to improve the Teaching learning process through regular evaluation of outcomes, which indicate gradual improvement in students' performance. The detailed steps of the Teaching-Learning Process, Pedagogical Initiatives, and Methodologies to support weak students and encouraging bright students are depicted in Figure 2.3, Figure 2.4 and Figure 2.5, respectively.
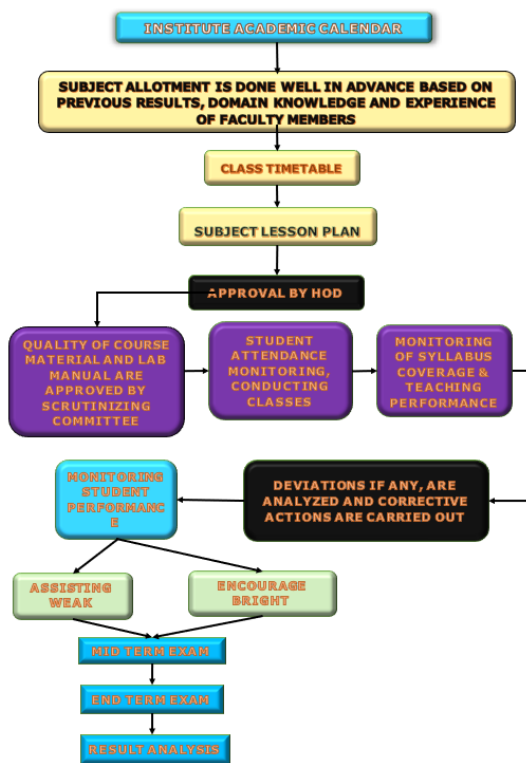
Figure. 2.3 Teaching-Learning Process

Figure. 2.4 Pedagogical Initiatives
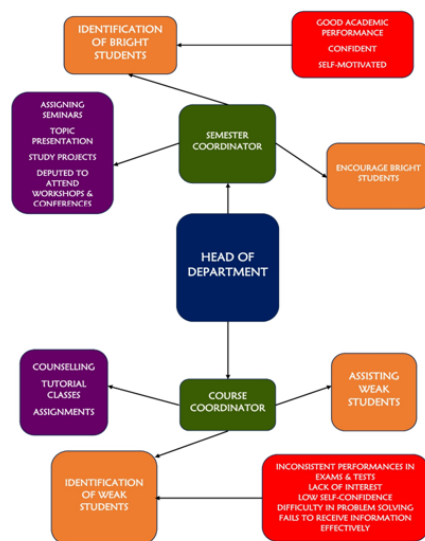
Figure. 2.5 Methodologies to support weak students and encouraging bright students

2. Based on rate of gradual progress in learning outcomes of students, the teaching process is modified, aided, regularlyto enable improvement in learning outcome.

3. The Course allotment for each course takes place in the previous semester in a particular academic year, so that the concerned faculty members get sufficient time to plan their overall pedagogical approach in terms of developing course materials. They can plan about the teaching and visualization tools, use of relevant online course explanatory aids, software/hardware tools, think about real world problems related to the course etc.

4. Each Faculty Member maintains a course file to record the progress of Course throughout the semester.

5. In this regard, the Junior Faculty staffs take the help of seniors who had the experience of teaching the same or a similar course in the past. The lesson plans are prepared after consulting with senior faculty members and following the academic calendar prepared and distributed by the University. The Academic Calendar is circulated by the office of Dean Academic of the University twice in a academic session (Once every Semester). The academic calendar schedule is strictly adhered by the department in order to plan all the departmental academic activities. Both staff members and students diligently adhere to the calendar of events, aligning their activities with the departments planned initiatives.

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY BURLA
ଵୀର ସୁରେନ୍ଦ୍ର ସାଏ ବୈଷୟିକ ବିଶ୍ୱବିଦ୍ୟାଳୟ

(A UGC Recognized State Government University by an Act of Assembly, Estd. -1956)
P.O. Engineering College, Burla, Dist: Sambalpur, Odisha, (India) -768 018
www.vssut.ac.in, e-mail: vc@vssut.ac.in

No.VSSUT/ACD/ 30 /2024   Dated:09/01/2024

ACADEMIC & ACTIVITY CALENDAR OF EVEN SEMESTER (JAN'2024 TO JUNE'2024)
PART - A

Sl. No.	Details of Academic Events	2nd Semester B.Tech / B.Arch / MCA
1	Registration of Regular students and Re-admission of eligible backlog students to Even Semester. Registration of students shall be done in respective department.	16/01/2024 to 17/01/2024
2	Commencement of Even Semester classes	16/01/2024
3	Athletic Meet	27/01/2024 & 28/01/2024
4	Last date of intimation of attendance status by respective faculty member to the students and concerned HOD before the Mid-semester examination.	24/02/2024
5	Mid-Semester Examination	29/02/2024
6	Student Function (Samavesh & Cultural Function)	23/03/2024 & 24/03/2024
7	Last date of showing evaluated Mid semester answer scripts to the students by the concerned subject teacher	09/03/2024
8	Last date of completion of sessional/Lab/Project & Viva Examination and Theory Classes	19/04/2024
9	Last date of submission of consolidated attendance shortage report to the office Dean, Academic Affairs by HODs in proper format.	20/04/2024
10	Date of Notification of debarring students from appearing End Semester Examination for Attendance Shortage by the office of Dean, Academic Affairs	24/04/2024
11	Repeat Mid Semester Examinations	26/04/2024
12	End Semester Examination (Theory Papers)	26/04/2024
13	Last date of Submission of Answer Book (Mid-Semester & End Semester) in the office of COE and on line submission of marks.	15/05/2024
14	Last date of Publication of Even Semester results	20/05/2024
15	Registration of students for Backlog Examination / Supplementary Examination	21/06/2024 to 26/06/2024
16	Commencement of Backlog Examination / Supplementary Examination	02/07/2024
17	Last date of showing evaluated Answer Book of Backlog / Supplementary Examination to the students & submission of marks	26/07/2024
18	Publication of Backlog results	02/08/2024

PART – B

Sl. No.	Details of Academic Events	3rd Semester B.Tech / B.Arch / MCA
1	Date of Subject Registration for Odd Semester 2024-25	22/07/2024 to 27/07/2024
2	Date of commencement of Odd Semester classes 2024-25	22/07/2024

Dean, Academic Affairs
Dated: 09/01/2024

Memo No.VSSUT/ACD/ 31 /2024
Copy to:
1. University Notice Board /All Deans/All HODs/Registrar/Wardens of All Halls of Residence/ COE/COF/All PICs for information & necessary action.
2. Dean, F&P for information with a request to facilitate in uploading this notice in the University Website for wide circulation.
3. P.A. to V.C.for kind information of Hon'ble Vice Chancellor.

Dean, Academic Affairs

6. For each course, the detailed lesson wise courseplan is prepared which describes the details of the topics to be covered in eachlecture hour, portions to be covered before Mid Semester Examinations, number of tutorials to be conducted and, thenumber of hours needed for completing each topic. Sample Course delivery Plan and Lesson Plan.

7. Each Faculty member prepares Lecture Notes, Power Point Presentation and other teaching aids clearly defining the concepts of the portions of topics covered. It also aims to develop the problem solving abilities of the students. Lecture notes contents also focus on the technology adopted in the field of real world industry, power sector, the best practices of standards and protocols followed by industry, relating them to the syllabus contents. Case studies, and real world problems are also encouraged to be researched and discussed. However, the main objective for design of such lecture notes is more concerned to develop each student's ability to perform well in both end semester examination as well as any nationallevel competitive examination like GATE etc.

8. Information and Communication Technology(ICT), has become a powerful medium of communication in recent times. The University has taken care of the same by furnishing all classrooms with smart boards as a first step. The department faculty members use several software tools like MATLAB, ANSYS, Dig-Silent, OPAL-RT, LABVIEW, HOMER, etc., as pedagogical aid to achieve better outcomes.

9. The faculty members provide sufficient video lecture contents of eminent faculty members from around the nation by sharing video lectures and study materials of NPTEL and of reputed university around the world. The faculty members themselves usually enrol in these courses to gain proficiency, knowledge and additional certification to improve their teaching continuously.

10. The Internal Quality Assurance Cell (IQAC) of the university takes periodic internal academic audit of the teaching-learning activities of the department/faculties to ensure improvement in teaching learning process every three years.

11. A detailed formative assessment plan is formulated for continuous evaluation of the students over the semester. It carries 50% weightage in total marks, divided into three categories

     i. Classroom performance evaluation through periodic tests and quizzes, home assignments, Viva (10 marks)

     ii. Attendance and participation in classroom discussion (10 Marks)

     iii. Mid Semester Examination (30 Marks)

Pedagogical approaches play a crucial role in delivering course content, and their application varies according to the target audience. The assignment of courses is determined a minimum of one month prior to the start of the semester, based on the faculty members preferences and expertise. After course allocation, faculty members meticulously create a comprehensive course plan, including assignments, questions, quiz materials, and other relevant content. Course handouts and materials are developed in alignment with the lesson plan and desired course outcomes. Faculty members employ diverse pedagogical methods to facilitate an engaging teaching and learning process. The department follows a well-defined procedure for course allocation and workload distribution

Each lecture within the teaching plan is meticulously outlined in lesson plans by faculty members before the semester begins. These plans undergo thorough scrutiny by the department head, receiving approval before being accessible to students. The lesson plans encompass learning objectives and the assessment of these objectives. Course coordinators design the lesson plans for each course, aligning them with the departments calendar of events.

Real-time examples

     i. To demonstrate the complexity and unpredictability of real issues, and to stimulate critical thinking, real-world examples are discussed.

     ii. Inter- and multi-disciplinary approaches are used for problem-solving.

     iii. To demonstrate that there is no perfect solution to a particular problem, real-world problems are invoked.

     iv. Real-world examples help students think more analytically about the

solutions.

Interactive classrooms

Classes are made more interactive by encouraging student participation as follows:

     i. Asking students to elaborate on something they have written in a response paper or on the class' discussion board.

     ii. Having students to answer other students' questions.

     iii. Punctuating the lecture with questions.

     iv. Interrupting the lecture with a sample exam question.

     v. Asking students to interpret a statistic, a graph, a chart, or another visual image.

     vi. Integrating a case study or an inquiry or a problem-solving exercise into the class.

     vii. Integrating student presentations into the class.

     viii. Asking questions that involve higher-order thinking skills like diagnostic, challenge, evaluation, or prediction questions.

     ix. Asking students to summarize the main points that they learned in class that day and the points they found most confusing.

     x. Asking the students to explain the relevance, utility, or significance of the information presented in the class.

Slide Presentation

A slide presentation is used to benefit the students by engaging in multiple learning styles, increasing visual impact, improving audience focus and providing annotations and highlights.

Video Lectures

Video lectures are imparted that are archived and can be accessed anytime anywhere. For specific topics and concepts, video can be used by the novice students who have lower knowledge to process the concepts. The teachers recommend NPTEL lectures for different topics, which can be accessed by the students in the hostels and the institute computer centre.

Collaborative learning (Theory subjects and Laboratory)

    i.   Groups comprising a maximum of five to six students are formed in each class.

    ii.   One from the group is designated as the group leader.

    iii.   The faculty may assign each group tasks and the respective group leader provides a report on the activity.

    iv.   An assessment of the report is done by the faculty to analyze the expected outcome from the activity is achieved.

    v.   The tasks assigned could be a minimum of three in each semester as decided by the faculty member.

    vi.   The focus of the tasks is on learning new technologies, enhance the knowledge on a particular topic, studying new tools to be in pace with the industry, doing some minor projects, etc.

    vii.   Additional experiments could be assigned to each group in lab sessions.

    viii.   The faculty encourages each group to disseminate the knowledge they have gathered to others.

Assignments

The purpose of writing an assignment is to help each student develop research and communication skills, so they obtain the necessary information and literary skills to complete the engineering curriculum.

Writing assignments is a flexible means of demonstrating learning as well as a method of exploring ones thinking to stimulate learning. The mechanical engineering department strictly follows this method.

    i.   A minimum of two to four assignment is given for each course in a semester.

    ii.   The assignment given could be theoretical or practical.

    iii.   The assignments are designed so that the COs, POs, and PSOs are covered in the questions asked in the assignments.

Conducting Quiz

    i.   Quizzes are conducted for all courses in all semesters.

    ii.   At least one quiz competition is held per course in semester.

    iii.   The faculty keeps a document of the quiz questions.

    iv.   The mode of conducting a quiz is oral/written in the class.

    v.   Quiz Competitions are organized to promote academic excellence and to provide a venue for interaction amongst students.

Tutorials

Tutorials are generally intended to -

    i.   Enables the students to pursue their academic interests within the context of the subject.

    ii.   Helps the students to gain a deep understanding of the subject matter.

    iii.   Develop students' ability to think and act like a professional in their discipline.

    iv.   Develop students' necessary academic skills like identification and evaluation of relevant resources, effective communication, effective time-management etc.

    v.   For each subject, at least one hour every week is allotted for conducting tutorials, as shown under the heading "Structure of Curriculum" above.

    vi.   A tutorial register is maintained for each subject and regularly maintained by the concerned faculty.

Lectures/ Seminars

Every year many eminent personalities are invited from a variety of fields, articulating their thoughts and elaborating on their well-known works, ranging from current rages to the age-old topics.

Internal Assessment Tests

    i.   One internal assessment test is conducted in every semester.

    ii.   The duration of each test is one hour.

    iii.   The results of each test are analyzed to identify weak and bright students.

    iv.   The bright students are assigned some tasks by the faculty to encourage their performance.

    v.   Remedial classes and tests are conducted for the weaker students after each test, and the remedial test results are analyzed to identify the impact.

Methodologies to support weak students and encouraging bright students:

i. The students scored above 80% marks belong to the group of bright students. The respective faculty will decide the measures taken to encourage bright students.

ii. The measures taken include the following, and additional actions may be added according to the requirement.

iii. Recommend some quality references.

iv. Provide details of books to be referred.

v. Suggest e-resources and journals.

vi. Introduce a new tool/ software.

vii. Bright students are asked to help weak students to boost their morale.

viii. Prepare a quiz on topics from the subject.

Industrial Training and Industrial Visits

The objectives of the industrial training are to expose the students to the engineering practice which is specific to their course specialization and to the nature of the industry selected to expose the students to the responsibility of an engineer and the engineering profession to develop the students' communication skills that include daily interaction within the working environment and technical writing.

i. The students of the mechanical engineering department are deputed to renowned industries for undergoing industrial training of a minimum of 6 weeks, at 5th and 6th semester levels.

ii. The same is evaluated at the end of the 7th semester.

Also, the students have several industrial visits alongwith faculty members.

12. Depending upon requirements of a particular course, faculty members usually adopt many interactive methods like, group discussion, seminar based approaches, besides usual classroom teaching. In some courses, short introductory 6-7 hours study tours to a nearby industry installation (AdityaAlumina, Hindalco, NTPC, OHPC Power House, Grid substation) situated in the vicinity of University. In order to develop interest and zeal among students, faculties in some courses assign the students with seminars based on topics related to technological advancements and industry practices which are more contemporary in the practical field, so that students get motivated to know more and may create interest to try and be innovative in practical problem solution and develop their entrepreneurial spirit in future.

13. Develop a habit of self learning for lifelong among students:

To develop a habit of self-lifelong learning among the students, they are encouraged with the following practices.

a. Visit Library to refer to latest as well as old classical books, reference materials, journal, video lectures and prepare assignments summarizing their learning.

b. They are encouraged to participate in technical festivals, hackathon being conducted throughout in reputed Institutes and Industries in the nation. The University organizes technical festival SAMAVESH every year under the mentorship of a Prof-in-Charge and technical committee. The department students' participation is encouraged. Moreover, the department also conducts Departmental Technical Festival undertaken by Production Engineering Society, where various competitions related to Model presentation, Technical Seminar, Quizzing, GD etc. are organized and evaluated by committee of faculty members.

c. Through invited guest lectures by Industry personnel and Faculty members of reputed Institutes like IITs, IIMs, NITs etc, the students are exposed to latest technological advancements in their topics of interest.

Academic Year : 2023-24

Sl. No.	Event Type	Event Title/ Name	Resource Person	Duration / Date
01	Guest Lecture	3-Dimensional Stress Analysis in Structural Application	Prof. S. K. Panigrahi, Professor, Defense Institute of Advanced Technology, Pune	13.02.2024
02	Guest Lecture	Renewable Energy Technology by Harnessing Wind Power	Prof. Niranjan Sahoo, Professor, Department of Mechanical Engineering, IIT Guwahati	03.02.2024

Academic Year : 2022-23

Sl. No.	Event Type	Event Title/ Name	Resource Person	Duration / Date
01	Guest Lecture	Advances in machining and machinability studies under sustainable environment	Prof. Ashok Kumar Sahoo, KIIT University	24.03.2023
02	Expert Talk	Challenges, opportunity and future aspects in aluminum industry	Er. Debasish Mallik, HINDALCO, Hirakud	08.02.2023

Academic Year : 2021-22

Sl. No.	Event Type	Event Title/ Name	Resource Person	Duration / Date
01	Guest Lecture	Four-dimensional printing for Innovative design	Dr. Rupinder Singh, NITTTR Chandigarh	2 hrs
02	Expert Talk	Transforming Design and Manufacturing: 3D Printing Transformation	Mr. Janardanan Venkat, Redington India Limited	2 hrs
03	Guest Lecture	3D printing Future homes: From project to product mindset	Dr Biranchi Panda, IIT Guwahati	2 hrs
04	Guest Lecture	3D Printing Data File Formats	Dr. Y. Ravi Kumar, NIT Warangal	2 hrs
05	Guest Lecture	Rapid Tooling: An Industrial application of 3-D printing	Dr. S. Kanmani Subbu, IIT Indian Palakkad, Kerala	2 hrs
06	Guest Lecture	Addressing Some Technological Challenges in Laser Additive Manufacturing	Prof. Asish Kumar Nath, IIT Kharagpur	2 hrs
07	Guest Lecture	Shaping the future of a nation through smart and additive manufacturing	Dr. Pulak Mohan Pandey, IIT Delhi	2 hrs
08	Guest Lecture	3D printing: Opportunity and challenges	Dr. Chandra Sekhar Tiwary, IIT Kharagpur	2 hrs
09	Guest Lecture	Biomaterials Implants: Status, and Challenges	Prof. Bikramjit Basu, IISC Bangalore	2 hrs
10	Expert Talk	Concept of Data Sciences	Prof. P. Radha Krishna, Professor, Department of Computer Science and Engineering, NIT, Warangal, India	2 hrs
11	Expert Talk	Data Analysis for reliability quantification of safety critical system	Dr. Lalit Singh, Scientist, NPCIL-BARC, DAE, Govt. of India	2 hrs
12	Expert Talk	Evolutionary multi-objective optimization – Case study	Dr. Probir Saha, IIT, Patna	2 hrs
13	Guest Lecture	Prediction Tools in Manufacturing Processes	Prof. Siba Sankar Mohapatra, NIT, Rourkela	2 hrs
14	Guest Lecture	Machine learning approach for fault diagnosis	Prof. Arun Kumar Samantaray, IIT Kharagpur	2 hrs
15	Expert Talk	Applications of Data Science in Supply Chain Analytics	Mr. Srichandan Sahu, Business & SCM Transformational Leader, Mumbai	2 hrs
16	Guest Lecture	Significance of ISM (Interpretive Structural Modeling) in Data Science	Prof. Sushant Tripathy, KIIT DU	2 hrs
17	Guest Lecture	Input-Output Modeling of Manufacturing Process	Prof. D. K. Pratihar, IIT Kharagpur	2 hrs
18	Guest Lecture	Regression Techniques and their Implementations	Dr. Sanjay Panda, Assistant Professor, NIT, Warangal	2 hrs
19		Mind Management	Prof. Alok Satapathy, NIT, Rourkela	2 hrs
20	Guest Lecture	Industry 4.0	Prof. Surjya K Pal, IIT Kharagpur	2 hrs
21	Guest Lecture	Smart Factory with Digital Twin	Mr. Aravind Ramachandran	2 hrs
22	Guest Lecture	Sustainable Manufacturing towards Industry 4.0	Prof. Shibendu Shekhar Roy	2 hrs
23	Guest Lecture	Experimental Investigations in Micro Forming	Dr. Kakandikar Ganesh M., Professor and Associate Head School of Mechanical Engineering, MIT World Peace University, Pune	2 hrs
24	Guest Lecture	Micro-forming using Lasers	Dr. Ravi Kant, Assistant Professor, Department of Mechanical Engineering, IIT Ropar	2 hrs
25	Guest Lecture	Relevance of Indentation Tests in Materials Research	Dr. B. Sridhar Babu, Professor Department of Mechanical Engineering, CMRIT, Hyderabad	2 hrs
26	Guest Lecture	3D and 4D Manufacturing Processes	Dr. Kaushik Kumar, Associate Professor Department of Mechanical Engineering, BIT Mesra, Ranchi	2 hrs

27	Guest Lecture	Tribology – A Tool for Material Characterization	Prof. Prasanta Sahoo, Professor Department of Mechanical Engineering, Jadavpur University, Kolkata	2 hrs
28	Guest Lecture	Abrasive Flow Finishing of Complex Features	Dr. Mamilla Ravi Sankar, Associate Professor Department of Mechanical Engineering, IIT Tirupati	2 hrs
29	Guest Lecture	Functionally Graded Materials (FGM): Design, Processing, & Applications	Dr. A. K. Chaubey, Sr. Principal Scientist Department of Advanced Materials Technology, CSIR-IMMT, Bhubaneswar	2 hrs
30	Guest Lecture	Application of textured cutting tools in Machining	Dr. Sudarsan Ghosh, Professor Department of Mechanical Engineering, IIT Delhi	2 hrs
31	Guest Lecture	Micromachining: New Challenges	Prof. Bijoy Bhattacharyya, Professor Department of Production Engineering Jadavpur University, Kolkata	2 hrs
32	Guest Lecture	Laser and Tungsten Inert Gas (TIG) welding for surface modification	Dr. Manoj Masanta, Assistant Professor Department of Mechanical Engineering, NIT Rourkela	2 hrs

14. For assisting the weak students a committee of faculty members i.e., SMCC (Student Mentoring and Counselling Committee) is formed for monitoring them academically. Students are grouped and mentored by individual teachers from the department. For mentoring the weak students extra classes and remedial classes are conducted. Further, the bright students are given the responsibility of mentoring the weaker students, as they belong to the same peer group. Their behavioural and psychological issues are also addressed through counselling.
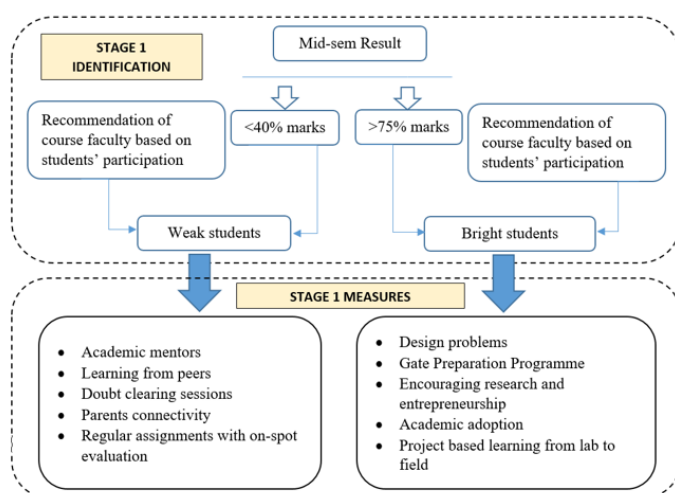
Figure 2.6: Identification and measures for weak and bright students in stage 1
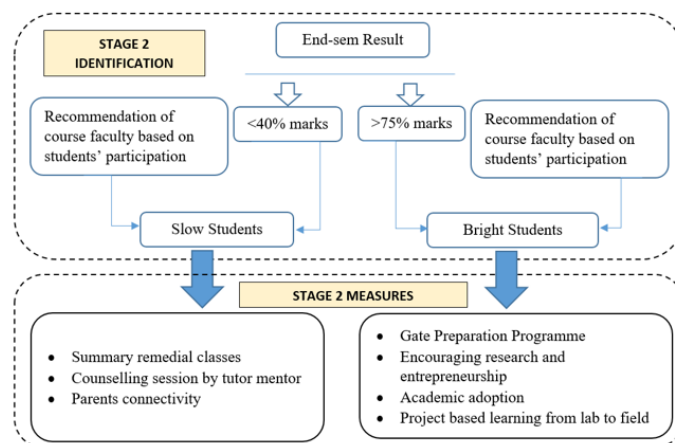
Figure 2.7: Identification and measures for weak and bright students in stage 2

15. Instruction Methodology in the Laboratory Sessional Course: The main objective of developing overall pedagogical approach and instruction for specific practical based sessional, is focused on inculcating the following attributes and skills among the students.

    i. To be able to develop confidence, in performing the experiment all by himself/herself.

    ii. To be able to relate with the original theoretical concepts, and be able to critically analyse to understand whether the experiments are same or different from theory.

    iii. Not only to develop leadership skills in performing a task, but also be able to work in team to achieve the same.

For achieving the above mentioned objective, the following approach is adopted to plan and conduct a particular Laboratory course.

    i. Since the load distribution among faculty members for a particular semester are completed well in advance, the faculty members get ample time, to prepare the list of experiments to be conducted taking into account CO-PO PSO mapping.

    ii. Laboratory manuals are prepared clearly to elucidate, fundamental theory and concept behind the Lab experiment. These manuals describe the theoretical background, related circuit and specifications, procedure, tabulation etc., at the end each experiment. Further, there are ample numbers of questionnaire to examine each student's understanding and critical thinking ability.

    iii. The students are provided with requisition slips, which mentions Aim of the Experiment, Machine Specification, Measuring equipment and other meters, CROs, Sensors, transducers etc to be filled and verified by the assigned faculty members before conducting the experiments.

    iv. The students are divided into as many numbers of groups as there are experiments and assigned with experiments which they conduct rotation wise over the weeks. The students are required to come prepared to the Laboratory with all relevant theory and concepts related to the experiments and each student is being asked with relevant questions to verify and grade their preparedness. Weaker students are explained with the details of the experiment.

v. After satisfactory discussion with students, they start the experiments after issuing the equipment and meters and connecting the circuit. While performing the experiments, each student's involvement in conduct of experiment is also assessed by the assigned faculty member. At the completion of the experiment, each student is required to note down readings and plot graph, trace from CROs and perform a short discussion among themselves to explain and discuss about the correctness of the results and data with the faculty member. They are required to submit, the complete documentation of experiment along with conclusions and review questions within 48 hours of the conduct of experiment.

vi. All the students maintain a rough record, to perform experiments, and get their findings verified from the faculty members.

vii.   It has been observed that this method of instruction made students prepare and understand the correlation of the experiments with the related theory and also made them to be confident on conducting the experiment on their own.

16. Student's Feedback of Teaching Learning Process :

i. For every course, student's feedback is obtained from all the enrolled students. The students are asked with varieties of questions related to their satisfaction in terms of various factors. The students are asked to give their score in the range of 1-5 for each of the questions.

Sample Student's Feedback Form collected as google spreadsheet.

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY:BURLA

DEPARTMENT OF PRODUCTION ENGINEERING

Students Feedback fir the session :2022-23   Programme:B.Tech 5th Semester

SL	FACULTY NAME	DESIGNATION	SCORE OBTAIN	TOTAL SCORE	REMARKS
1	Dr.Debadutta Mishra	Professor			
2	Dr.Debabrata Dhupal	Professor			
3	Dr.Kamal Pal	Associate Professor	12	14	
4	Dr.Nirmal Kumar Kund	Associate Professor			
5	Dr.Arun Kumar Rout	Associate Professor	14	14	
6	Dr.Pankaj Charan Jena	Associate Professor	11	14	
7	Dr.Sudhansu Ranjan Das	Associate Professor	13	14	
8	Dr.Trupti Ranjan Mahapatra	Associate Professor	9.5	14	
9	Mrs. Lipsamayee Mishra	Assistant Professor			
10	Mrs. Smita Padhan	Assistant Professor	10	14	
11	Mrs. Sunita Sethy	Assistant Professor			
12	Miss Anisha Ekka	Assistant Professor			
13	Mr. Sambeet Kumar Sahu	Assistant Professor	8	14	
14	Mr. Premananda Ekka	Assistant Professor			
15	Mr. Birendra Kumar Barik	Assistant Professor			

17.   Impact Analysis

(a) The quality of teaching is exhibited in terms of attaining POs, PEOs to the extent of 70-80%.

(b) In terms of the academic outcome, more than 90% of students are completing their course with in the stipulated time of four years.

c) Because of the extra support of slow learning weaker students, the pass percentage is gradually improving and the number of backlogs of

students is decreasing.

2.2.2 Quality of end semester examination, internal semester question papers, assignments and evaluation (15)   Institute Marks : 15.00

The courses taken up by the student are classified into theory, practical and sessional courses. A set of assessments are conducted for each of these courses through which the students' performance is currently evaluated as summarized below:

Courses	Assessment
Theory courses	The assessment is done in three stages: Continuous assessment (20 marks): Student is evaluated based on different tasks and learning activities throughout the semester for the course. The management, assignment and evaluation of tasks, assignments are done through different learning management systems like Google Classroom , Moodle etc. Mid semester examination (30 marks): Student is evaluated based on mid semester examination (closed book examination) conducted towards the middle of the semester based on a part of the syllabus decided and announced by the course coordinator in discussion with other course teachers. End Semester examination (50 marks): Student is evaluated based on end semester examination (closed book examination) conducted towards at the end of the semester based on the entire syllabus for the course. The mid semester and end semester examinations are conducted centrally under the supervision of the Controller of Examinations . All evaluations are done, marks are communicated to the students and grievances if any are immediately resolved.
Practical courses	The assessment is done in 2 stages: Continuous or Internal assessment (70 marks): Student is evaluated based on their performance, concepts, performance as a group member, viva and documentation corresponding to different experimental tasks, simulations, programming and learning activities prescribed and carried out throughout the semester. End Semester examination (30 marks): Student is evaluated based on their performance on a given experimental or hands-on task that has to be completed within a stipulated time under constant proctoring, and on their performance in the end semester viva examination.
Sessional Courses	Continuous assessment (100 marks): Student is evaluated based on different tasks, learning activities, group tasks and /or reviews and viva conducted throughout the semester for the course. The management, assignment and evaluation of tasks, assignments are done through different learning management systems like Google Classroom , Moodle etc.

The University has set guidelines for conducting examinations including setting up the question papers of mid-semester and end-semester examination and continuous evaluation through activities. The guidelines of each component of assessment are given below.

A. Continuous Evaluation through learning activities for each theory course:

The activities in continuous assessments have been designed to facilitate/strengthen learning among the students. 20 marks have been assigned to the activities category in each course. The activities are to be designed such that the course teacher will be to assess the student on following categories as well as to the intended course outcomes.

Problem solving/ Critical Thinking/ Creation Focus	Interactivity Focus	Quiz	Reflection
05	05	05	05

B. Quality of the Internal Question Paper

Regular midterm exams are held in adherence to the academic calendar of the institute. Following processes is in place in the department to maintain the quality of the internal question paper. The process is reviewed over the years and updated.

The course coordinator decides the syllabus for the internal examination and requests question pool from the respective committee members.

After collecting the questions from respective committee members, the course coordinator prepares the internal question paper and evaluates each question through following parameters.

    Mapping of individual questions of the question paper with the respective Course Outcomes (COs).

    Mapping of individual question paper with the respective levels of questions based on the Blooms Taxonomy.

    Mapping of individual question paper with the respective chapters of the course.

    Finally, the quality of the question is analyzed based on the prevalent guidelines to related to the Bloom's Taxonomy requirement and the coverage of chapter and course outcomes.

Then, the course coordinator shares the evaluation sheets with the committee members for review and feedback.

After the evaluation sheet data found to meet the quality standards, the question paper is submitted to the Controller of Examination.

C. Quality of assignments and its relevance to COs

    The respective faculty members announce the assignment issue and submission dates.

    A minimum of two assignments are given for each subject. To ensure the quality of the assignments following procedure is adopted.

    The assignments are designed to map the COs of the course.

    The assignments are designed to cover both the theoretical and numerical portion of the course.

    The questions given are categorized into knowledge, comprehension, application, analysis, evaluation and synthesis levels.

    To ensure maximum exposure in the subject, it is a departmental practice that a minimum of 5 different questions is asked for each assignment.

    Faculty can choose the type of assignment to be given (questions/ open book test/ seminars or presentations).

    In the evaluation of the assignment, the required feedback corresponding to each answer is provided by the faculty, so that the student can understand the mistake.

    The faculty, after submission of every assignment, explains the solution of the questions in the class, which enables the students to perform well in the final examination.

    For any genuine reason, if a student is unable to perform well in the given internal assessment tests or assignments, and improvement test is given to him/her.

    If a student remains absent for all the tests conducted, they are marked as "Absent" in the result.

    Assignments are used as a tool for practice, and evaluation is based purely on internal assessment.

    The marks scored by each student are recorded separately for each Course Outcome.

    The CO attainment level is calculated after each test and assignment.

D. Quality of *Question Paper for End-semester examination*

End-semester examination is conducted at the end of each semester to evaluate the students comprehensive understanding of the whole subject covering the whole syllabus. It has a weightage of 50 marks. The following method is adopted for question paper preparation.

The Course Coordinator recommends the name of two faculty members from outside for setting up the end semester question paper. By the scheduled date of End Semester examinations, the Board of Studies(BOS) of the department, has already finalized and ratified the names of question setters (external examiner) from reputed Institutes across the nation for each course and the names of internal examiners as well as the moderator.

The Controller of Examinations(COE), selects a particular expert's name out of the list to request for question papers as per the syllabus. In case of non-availability of question setter due to some reason, the internal examiner/ senior faculty member sets the question paper inline with the COs of the particular course.

The previous years questions are also taken into consideration to avoid repetition and maintain their standard and quality.

The faculty members/internal examiners as well as the external examiner are advised to prepare questions following Bloom's taxonomy. Approximately, one third of the questions are based on fundamentals of a course, which can be answered by an average student. Another one third of the questions aims to test the deeper understanding of the core knowledge, which may demand analytical, conceptual and information based competency of the student. The final third category examines the problem solvingability of the student, which requires clarity and critical thinkingby the student.The moderator reviews the question paper by

    1. Mapping of individual questions of the question paper with the respective Course Outcomes (COs). The mapping is quantified through a score.

    2. Mapping of individual question paper with the respective levels of questions based on the Blooms Blooms Taxonomy. The mapping is quantified through a score.

    3. Mapping of individual question paper with the respective chapters of the course. The mapping is quantified through a score

    4. Finally, approving the quality of the question paper to be satisfactory.

E. Procedure followed for Answer Script evaluation of both Mid-Semester and End Semester Examinations:

The evaluation process of theory subjects is followed as per the guidelines laid by The Dean, Academics of the university.

The scheme of evaluation for the question papers are prepared by the respective faculty members/internal examiners in advance. The CO coverage and the marks allotted for each of the COs are recorded by the faculty members for preparing mapping on CO-PO-PSO at the end.

It is the statutory procedure of the university to show the evaluated answer scripts to the students. Once the students have seen the answer scripts and satisfied by signing, the marks are forwarded to the examination section for final declaration of results.

2.2.3 Quality of student projects (20)   Institute Marks : 20.00

A. Process for identification/alocation of student's projects

The theoretical knowledge as well as practical skill of the students can be discovered through student projects. A great emphasis is given to student projects. As per the curriculum, the final (4th) year students are required to carry out two numbers of projects, i.e., Minor Project (Project-I) during 7th Semester and a Major Project (Project-II) during 8th Semester. The projects are divided into 4 major groups depending on the availability of the specialization of the faculty:

1. Material Science

2. Machining and optimization

3. Robotics and AI

4. Industrial Engineering and Management

A.1 Identification of project and allocation methodology to faculty members

Project Identification and Faculty Members allocation

The process of project identification and supervisor alocation is depicted in figure 2.8.
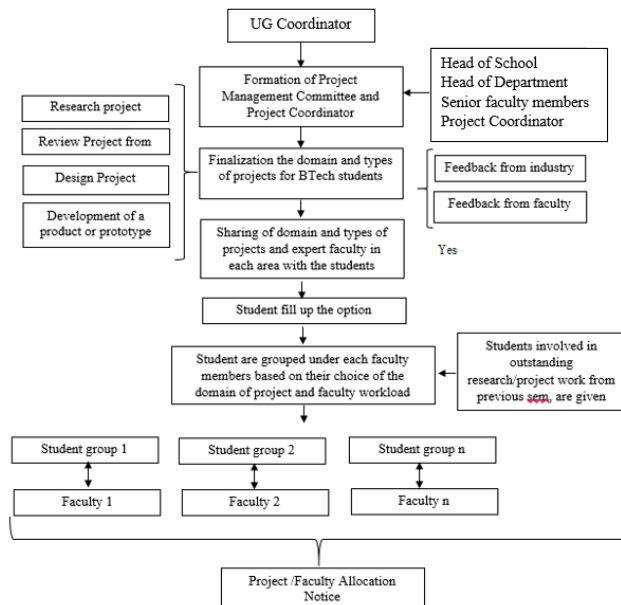
Figure 2.8 Process for Project Allocation methodology

i. The Head of Department /Project Coordinator provides the list of faculty members and their area of specialization to the students at least one month before the end of the 6th semester. The Head of Department/PC also identifies the industry professionals/alumni for guiding the students.

ii. The project coordinator advises the students to form a group of 4-5 members, and identify the project area/title, obtain the consent of faculty/industry professionals to guide them. The Project coordinator collects these details from the students at least two weeks before the end of the 6th semester. The group of students includes students from weak, average and bright student categories.

iii. The Head of Department/PC/project coordinator finalizes project titles, project guides, groups of students and displays the allocation at least one week before the end of the 6th semester.

iv. The Head of the Department/PC/project coordinator allocates laboratory resources for in-house projects and assigns the number of days per week for working on the projects in the industry (if the project is being carried out in industry).

v. The Head of Department/PC/project coordinator lists the types of projects based on Environment, Safety, Ethics, Cost and category of the project i.e. whether it is application-based, Product Development based or Research-based projects.
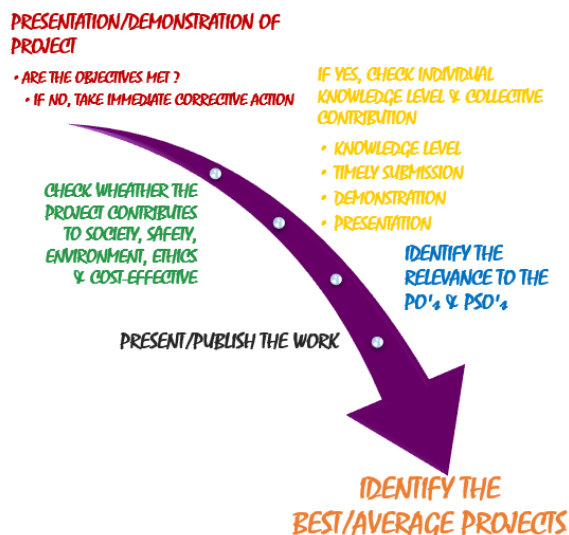
Figure 2.9: Evaluation Process of the Student Project

A.2 Process for continuous monitoring of student projects

Students are directed to maintain a project diary to record the activities on day-to-day basis regarding the project work. The recorded included the details of their interactions with the project supervisor.

The process to ensure the quality of student projects

i. The Project evaluation committee and the project guide together will analyze the nature of the project during the different stages of evaluation and make sure that the work is environment-friendly, ensures safety, ethics, and is cost-effective.

ii. The projects are classified into different areas, and their relevance to PO's and PSO's are identified to ensure its quality.

B. Project related to industry

The students are encouraged to take up industry-related projects. To facilitate the same, industrial visits as well as industry expert talks are scheduled for the 3rd year students. This objective is also attained by choosing a problem from the industry where the students have undergone practical training at the lower semester. During the practical training, the students encounter different

problems in which they choose their final year project.

C. Process for monitoring and evaluation

The project work is divided into small components. Each component of the work is assigned to each student in the group. The supervisor maintains a diary regarding the work carried out by the students working under him. The supervisor interacts periodically, usually after 1 week with the students to determine the progress and to evaluate the contribution of each student. Thus, foolproof monitoring and evaluation are ensured. The departmental project evaluation committee meets twice in the 7th and 8th semester to assess the progress of the projects. The major projects addressing various PO and PSO are evaluated and diseminated.

Process of Interim and Final Evaluation of Students' Projects

COs To be Evaluated	CO1	CO2	CO3	CO4	CO5	Total
POs To be Evaluated	PO2-PO5	PO6-PO7,PO11	PO1-PO5, PO9-PO11	PO1-PO4	PO8, PO10	
Attributes Evaluated	Knowledge and skills in Tools and Techniques	New Dimension Society, Ethics, Environment	Application/ Implementation/ Group Activity/ Communication and Management skills	Analyze and Find Solution	Ability of presenting and concluding	
Interim Evaluation						
Final Evaluation						

All the committee members, project guides and HOD, finally scale up the above table based score in terms of appropriate marks to be awarded as per the following tables.

Evaluation Marks Rubrics for 7th Semester project(Project-I)

Faculty	Marks	Area examined
Senior Faculty	30	Examines the scope and objectives of the work along with quality of results obtained and the approach used for it.
HOD	20	Examines the level of overall understanding, the layout of the report and the writing style.
Project Guide	50	Examines originality in the analysis (theoretical and/or empirical) and the future scope.

Evaluation Marks Rubrics for 8th Semester project(Project-II)

Faculty	Marks	Area examined
External Examiner	30	Examines the scope and objectives of the work along with quality of results obtained and the approach used for it.
HOD	20	Examines the level of overall understanding, the layout of the report. the writing style, plagiarism report etc.
Project Guide	50	Examines originality in the analysis (theoretical and/or empirical) and the future scope.

2.2.4 Initiatives related to industry interaction (10)   Institute Marks : 10.00

The university emphasizes on institute-industry interactions which keeps all the stakeholders' (faculty & students) to remain abreast with the latest developments in the industry.Further, a continuous institute-industry interaction leads to joint research from academia partnering with industry in the longer run and it results in considerable improvement in learning outcome of students.

Apart from overall development in curriculum by introducing new industry oriented courses, it helps in value addition for students, as there is exposure to various opportunities to stay updated about latest trends and technologies. The faculties can utilize industrial testing facilities and help industries to solve their problems through research, training and consultancy.

Signing of MOUs with Industry/ Research Centres:

TheUniversity has signed MOU with the following Industries, R&D Lab, PSUs and Reputed Educational Institutions, IITs, IIMs, NITs, IIIT, BPUT, IGIT Sarang, NISER, IISER, MCL, PGCIL, OHPC, OPGC, NALCO, HINDALCO, OPTCL, Tata Power, CIPET Balasore, ISRO, Bengaluru, DELNET, Tech Mahindra Ltd. Etc.

A. Faculty-Student-Industry Interaction:

In order to initiate a working relation with resource persons of Industry/Research Centres etc, to keep possibility of developing a communicating bond, for any possible future MOUs, Guest lectures by various industry Experts are arranged from time to time. In this regard, few experts have delivered guest lectures, as organized by the department. Industry tour for field experience for different courses is also undertaken.

B. Industry involvement in the program design and curriculum

As has been stated in the process for designing the program curriculum (2.1.1), valuable feedback is sought from the employer (industry) where the students have been placed so that the performance of the students is enquired. Depending upon the performance as revealed by the feedback of the employer, necessary changes are made in the curriculum.

An industry personel is assigned as the member of board of studies.

Guest lectures/seminars/workshops are arranged involving various industry Experts for Partial delivery of the Courses.

C. Industry involvement in partial delivery of any courses for students

i. Expert talks enrich the students and faculty members with the latest updates from the industry.

ii. The eminent personalities of various fields and stalwarts of the industry are invited to lend valuable information from their first-hand experience, which serves as an ideal platform for the students.

iii. The department organizes expert lectures on various topics and issues related to the curriculum of Engineering in which distinguished technocrats are invited to deliver their expert lecture for the academic enhancement of the students and the staff.

iv. There is always an endeavor to create opportunities for students to learn and interact with industry experts.

D. Impact Analysis of Industry Institute Interaction and action taken

i. Interaction between the student and the industry improves upon the attitude, knowledge and skills, such as to fit any desirable organization in the future.

ii. The ability to apply engineering knowledge is improved by the internship program since it provides a platform to apply theoretical knowledge learned in the classroom practically.

iii. Practical knowledge is improved, which in turn helps to elevate their career opportunities.

iv. Placement opportunities are improved.

v. The effectiveness of this practice can be gauged by the great response of the participants for the workshops.

vi. The feedback is obtained from the students at the end of 8th semester to assess the achievement of the objectives of the industrial training/ summer training/internship/ industrial tour.

2.2.5 Initiatives related to industry internship/summer training (10)   Institute Marks : 10.00

The university has a training and placement department. The T&P department collaborates with industry to arrange summer internships for students of 2nd and 3rd year which are integral part of the curriculum. Further, after the students are placed, some companies require the students to undergo internship program for varying duration. For such students, the T&P department makes arrangement of classes, midterm and end term examinations.

A. Industry Training /Tours for students

Industrial training/tours are organized at 7th and 8th-Semester levels when the students are fully acquainted with the different streams of mechanical engineering.

B. Industrial / internship/ summer training of more than two weeks and post training assessment

It constitutes an important component of the curriculum of the department.

Post-training assessment of the practical training is evaluated at the end of the 7th semester by a committee constituted by the HOD. The students give a PPT wherein they provide a detailed report of the work done. An interaction session follows the presentation. The students are compulsorily supposed to submit a hard copy of the work done and are maintained in the department as a record. The credits are awarded based on the presentation, interaction and practical training record.

C. Impact Analysis of Industrial Training

The students are provided with the feedback forms to rate their industrial training/internship. It is done to identify the level of achievement. The feedback is obtained from the students at the end of the 7th semester to assess the achievement of the objectives of the industrial training/ summer training/internship/ industrial tour. It is observed that

- The student's technical skills are improved.

- Student's placement in core companies is improved.

- The student's placement percentage has improved compared to the previous years.

- Students learn to appreciate the inter-disciplinary nature of work environment

- Students also develop a network of associations / relationships in the organizations they intern with, which translates into industry mentor-mentee relationships

- Students gain valuable work experience.

- Students have an edge in the job market

- Students participate in more technical events

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3 COURSE OUTCOMES AND PROGRAM OUTCOMES (175)   Total Marks 175.00

Define the Program specific outcomes

:

PSO1	Identify, formulate design and investigate Production Engineering problems using first principles of mathematics, basic science and engineering.
PSO2	Establish themselves as practicing professionals in core service or research sector or entrepreneurial endeavors by solving real life engineering problems to offer techno-commercially feasible and socially acceptable solutions using contemporary knowledge and tools.
PSO3	Communicate ethically and effectively as well as demonstrate aspiration to learn and ability to handle problems with professional attitude.

3.1 Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (25)   Total Marks 25.00

Institute Marks : 25.00

No. of Core Courses : 6	C2 : 2	C3 : 2	C4 : 2

Note : Number of Outcomes for a Course is expected to be around 6.

Course Name :	C2 03	Course Year :	2021-2022

Course Name	Statements
C2 03.1	Relate the processing-structure-property-performance of various materials.
C2 03.2	Interpret different equilibrium diagrams with various transformation phases.
C2 03.3	Make use of iron- carbon equilibrium diagram.
C2 03.4	Analyze heat treatments techniques and their effects in the engineering materials
C2 03.5	Decide materials for various applications and beyond room temperature application.

Course Name :	C2 04	Course Year :	2021-2022

Course Name	Statements
C2 04.1	Implement and design various types of linkage mechanisms for obtaining specific motion and analyze them for optimal functioning.
C2 04.2	Analyze the velocity and acceleration of a plane mechanism.
C2 04.3	Evaluate and estimate the power of screw and clutches.
C2 04.4	Analyze and evaluate the speed ratios of gears and gear trains.
C2 04.5	Analyze and evaluate the effort and power of governor.

Course Name :	C3 05	Course Year :	2021-2022

Course Name	Statements
C3 05.1	Analyze and apply the domain knowledge in selection of materials, manufacturing consideration in design.
C3 05.2	Design riveted, welded, bolted, cotter and knuckle joints.
C3 05.3	Design shafts, keys, couplings, belt drives
C3 05.4	Design close coiled helical springs, leaf springs and theories of failure application in machine components.
C3 05.5	Design cylinder, piston and connecting rod of IC engines.

Course Name :	C3 06	Course Year :	2021-2022

Course Name	Statements
C3 06.1	Recall the state of stress and strain at a point in 3D, stress tensors and invariants
C3 06.2	Demonstrate the theory of plasticity such as flow curve, yield criterions etc
C3 06.3	Select the different methods for the analysis of deformation process.
C3 06.4	Analyze the effects of temperature, strain rate, forces and lubrication on metal forming process.
C3 06.5	Determine the load requirement in forging and cold rolling process.

Course Name :	C4 07	Course Year :	2021-2022

Course Name	Statements
C4 07.1	Design and analyze graphics systems (Packages and Modelling).
C4 07.2	Design and analysis of manufacturing automation process.
C4 07.3	Solve practical problems using NC part programing.
C4 07.4	Analyze automated material handling system in a manufacturing industry.
C4 07.5	Apply group technology concept in production environment.

Course Name :	C4 08	Course Year :	2021-2022

Course Name	Statements
C4 08.1	Demonstrate the concept of open system in computer integrated manufacturing.
C4 08.2	Develop common database for integration in CIM systems.
C4 08.3	Apply the knowledge to monitor using shop floor control in flexible manufacturing systems.
C4 08.4	Describe the CIM automation protocols and its architecture for specific industries.
C4 08.5	Construct database networks for different applications.

Course Articulation Matrix :

1 . course name : C203

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C203.1	Relate the p	3	2	3	3	3	2	2	1	2	1	1	3
C203.2	Interpret dif	3	2	2	3	2	1	1	2	1	1	1	2
C203.3	Make use o	3	3	3	1	2	2	2	1	2	1	1	3
C203.4	Analyze hea	2	2	3	3	3	1	3	2	1	2	1	1
C203.5	Decide mat	2	2	2	3	2	3	2	2	2	1	1	2
Average		**3.00**	**3.00**	**3.00**	**3.00**	**3.00**	**2.00**	**2.00**	**2.00**	**2.00**	**1.00**	**1.00**	**3.00**

2 . course name : C204

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C204.1	Implement a	3	3	3	3	2	2	2	3	1	1	2	1
C204.2	Analyze the	2	3	3	3	2	1	3	2	3	3	1	2
C204.3	Evaluate an	3	3	2	3	2	2	3	3	1	2	1	2
C204.4	Analyze and	3	3	3	3	2	1	1	2	2	3	2	1
C204.5	Analyze and	3	3	3	3	2	1	3	3	3	2	2	2
Average		**3.00**	**3.00**	**3.00**	**3.00**	**2.00**	**2.00**	**3.00**	**2.00**	**3.00**	**3.00**	**2.00**	**2.00**

3 . course name : C305

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C305.1	Analyze and	3	3	2	1	3	1	2	3	1	2	3	1
C305.2	Design rive	3	2	3	3	2	1	2	1	1	2	2	3
C305.3	Design sha	3	3	3	2	1	1	1	3	3	1	2	2
C305.4	Design clos	2	3	2	3	2	2	1	2	1	2	2	2
C305.5	Design cylir	3	2	3	3	2	1	3	3	2	1	1	2
Average		**3.00**	**3.00**	**3.00**	**3.00**	**2.00**	**1.00**	**2.00**	**3.00**	**2.00**	**2.00**	**2.00**	**2.00**

4 . course name : C306

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C306.1	Recall the s	3	3	3	3	2	1	3	3	3	2	2	3
C306.2	Demonstrat	3	2	3	3	1	3	1	1	1	3	3	2
C306.3	Select the c	3	3	3	3	2	1	2	2	2	2	2	1
C306.4	Analyze the	3	3	2	2	1	2	1	1	2	1	1	2
C306.5	Determine t	3	3	3	3	2	2	1	1	1	1	2	3
Average		**3.00**	**3.00**	**3.00**	**3.00**	**2.00**	**2.00**	**2.00**	**3.00**	**2.00**	**2.00**	**2.00**	**2.00**

5 . course name : C407

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C407.1	Design and	2	2	3	1	3	3	1	2	1	3	3	3
C407.2	Design and	3	3	3	2	3	2	2	1	1	2	3	2
C407.3	Solve practi	2	1	3	1	2	3	1	1	2	3	3	3
C407.4	Analyze aut	1	2	3	2	3	3	3	3	1	1	2	2
C407.5	Apply group	3	1	1	3	2	2	2	2	2	1	1	2
Average		**2.00**	**2.00**	**3.00**	**1.00**	**3.00**	**3.00**	**2.00**	**2.00**	**1.00**	**3.00**	**3.00**	**2.00**

6 . course name : C408

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C408.1	Demonstrat	3	2	3	3	3	2	3	2	1	1	3	3
C408.2	Develop co	3	3	2	1	2	3	2	3	3	3	2	2
C408.3	Apply the k	2	3	3	1	2	2	3	1	2	1	2	2
C408.4	Describe th	3	3	3	2	3	3	3	3	3	2	1	3
C408.5	Construct d	3	2	2	1	2	2	2	2	2	1	3	2
Average		**3.00**	**3.00**	**3.00**	**1.00**	**2.00**	**3.00**	**3.00**	**3.00**	**3.00**	**1.00**	**2.00**	**2.00**

1 . Course Name : C203

Course	PSO1	PSO2	PSO3
C203.1	3	3	3
C203.2	3	3	2
C203.3	2	2	3
C203.4	2	3	3
C203.5	3	2	3
Average	**3.00**	**3.00**	**3.00**

2 . Course Name : C204

Course	PSO1	PSO2	PSO3
C204.1	2	2	2
C204.2	3	3	3
C204.3	2	1	3
C204.4	3	3	2
C204.5	2	3	3
Average	**3.00**	**3.00**	**3.00**

3 . Course Name : C305

Course	PSO1	PSO2	PSO3
C305.1	3	3	3
C305.2	3	3	2
C305.3	2	2	3
C305.4	3	3	2
C305.5	2	3	3
Average	**3.00**	**3.00**	**3.00**

4 . Course Name : C306

Course	PSO1	PSO2	PSO3
C306.1	2	2	2
C306.2	3	3	3
C306.3	3	3	3
C306.4	2	2	3
C306.5	2	2	3
Average	**3.00**	**3.00**	**3.00**

5 . Course Name : C407

Course	PSO1	PSO2	PSO3
C407.1	3	2	3
C407.2	2	3	3
C407.3	3	3	3
C407.4	2	2	2
C407.5	2	3	3
Average	**3.00**	**3.00**	**3.00**

6 . Course Name : C408

Course	PSO1	PSO2	PSO3
C408.1	3	3	3
C408.2	3	2	3
C408.3	3	3	3
C408.4	3	3	2
C408.5	3	2	3
Average	**3.00**	**3.00**	**3.00**

Program Articulation Matrix   :

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BMA0100	3	3	2	2	1	3	2	1	3	1	1	1
BCH0100	3	3	1	1	2	3	3	1	3	1	2	1
BEC0100	3	2	3	3	2	2	1	1	2	1	1	1
BIT01001	3	3	3	3	2	1	2	2	3	1	2	3
BCE0100	3	2	2	2	1	2	1	1	3	2	2	3
BCH0100	3	1	2	1	1	3	3	2	3	2	1	1
BEC0100	3	2	3	3	2	3	3	1	3	1	3	1
BHU0100	3	3	3	3	2	1	1	2	3	1	2	3
BCE0100	3	2	2	2	2	3	3	1	1	2	2	2
BMA0200	3	3	2	2	2	3	3	1	3	1	3	1
BHU0200	2	1	1	2	1	3	3	1	3	3	3	1
BPH0200	3	3	3	3	2	2	1	2	2	2	3	3
BEE0200	3	3	2	1	1	1	2	1	2	1	3	1
BME0200	3	3	2	1	2	2	3	2	3	1	2	1
BPH0200	3	3	2	1	3	2	1	1	2	3	1	1
BEE0200	3	3	2	1	3	1	2	1	2	3	2	1
BHU0200	1	2	1	2	2	3	2	2	1	3	1	1
BME0200	2	1	1	1	2	3	3	1	3	1	2	1
BMA0300	3	3	2	2	1	1	1	2	2	2	1	1
BPE0300	3	3	3	1	2	1	1	2	3	1	3	3
BPE0300	2	2	3	3	2	2	3	2	3	2	2	3
BPE0300	3	3	3	3	2	2	3	2	3	1	3	3
BHU0300	2	1	1	1	2	2	3	1	1	1	3	2
BPE0300	3	3	3	3	3	3	1	2	2	1	2	2
BPE0300	2	2	3	3	2	3	3	1	3	1	2	3
BMA0400	3	3	2	1	2	3	3	1	1	2	3	1
BPE0400	3	3	3	3	3	1	3	2	3	3	2	2
BPE0400	3	3	3	3	1	3	1	1	1	1	2	2
BPE0400	3	2	3	3	2	3	1	3	3	3	3	3
BHU0400	1	2	2	1	2	2	2	1	2	2	3	2
BPE0400	3	3	3	3	1	2	2	2	1	2	2	2
BPE0400	3	2	3	2	3	2	3	2	2	3	3	2
BPE0400	3	3	3	3	2	2	1	2	1	3	3	2
BPE0400	3	3	3	3	2	3	3	3	2	2	3	2
BPE0500	3	3	3	3	2	3	3	3	3	1	3	2
BPE0500	3	3	3	3	3	3	2	3	2	1	2	2
BPE0500	3	2	3	2	3	3	2	2	3	3	3	2
BPEPE50	3	3	3	3	3	2	3	3	3	2	2	2
BPEPE50	3	3	3	3	3	2	2	3	2	1	2	2
BPEOE50	1	1	3	2	2	2	2	2	3	2	2	2
BPE0500	3	3	3	3	2	1	3	3	1	2	2	2
BPE0500	3	2	1	3	3	3	2	2	3	1	3	1
BPE0500	3	3	3	3	3	3	3	3	2	1	3	2
BPE0600	3	3	3	3	1	3	3	2	3	1	3	2
BPE0600	3	3	3	3	2	2	3	3	2	2	3	2
BPEPE60	3	3	3	3	2	3	2	3	3	1	3	2
BPEPE60	3	2	3	3	2	3	2	3	2	3	3	3
BPEPE60	2	3	3	3	3	3	2	2	1	2	3	2
BPEPE60	3	2	3	3	3	2	2	3	2	3	3	3
BPEOE60	3	2	2	3	3	3	2	3	2	3	3	3
BPE0600	3	3	3	3	2	2	3	2	2	2	2	2
BPE0600	3	3	3	3	2	2	3	3	3	1	2	2
BPE0600	2	2	3	3	2	3	3	1	2	1	2	2
BPE0700	2	2	3	1	3	3	3	2	1	3	3	2
BPE0700	3	2	3	3	3	3	2	3	2	3	2	3
BPEPE70	2	3	3	2	3	2	1	2	1	2	3	3
BPEPE70	2	2	3	3	2	1	3	2	3	2	3	2
BPEOE70	2	2	3	3	3	1	3	2	2	1	3	3

Course												
BPE0700:	3	3	3	3	3	3	2	2	3	2	2	2
BPEPE80	2	2	3	2	3	2	1	2	2	2	2	3
BPEPE80	2	2	3	3	3	2	3	2	1	1	3	3
BPEPE80	2	3	2	3	2	1	1	2	2	2	3	2
BPEPE80	3	3	3	1	2	2	3	3	2	1	2	2
BPEOE80	3	2	3	3	3	2	2	3	3	3	3	3

Course	PSO1	PSO2	PSO3
BCE0100	3	2	3
BCE0100	3	3	2
BCH0100	3	3	3
BCH0100	2	3	1
BEC0100	3	2	3
BEC0100	3	3	2
BEE0200	3	2	3
BEE0200	3	3	2
BEE0300	2	3	3
BHU0100	3	3	2
BHU0200	3	2	3
BHU0200	3	3	2
BHU0300	2	3	1
BHU0400	3	2	3
BIT01001	3	3	2
BMA0100	2	3	3
BMA0200	3	2	3
BMA0300	3	3	2
BMA0400	2	3	3
BME0200	3	2	3
BME0200	3	3	2
BPE 0300	2	3	3
BPE0300	3	2	3
BPE0300:	3	3	1
BPE0300	2	3	3
BPE0300	3	2	3
BPE0300	3	3	2
BPE0400	1	3	3
BPE0400:	3	2	3
BPE0400	2	3	3
BPE0400	3	2	3
BPE0400	3	3	2
BPE0400	2	3	3
BPE0400:	3	2	3
BPE0500	3	3	2
BPE0500:	2	3	3
BPE0500	3	2	3
BPE0500	2	3	2
BPE0500	3	3	2
BPE0500	3	2	3
BPE0600	3	3	3
BPE0600:	3	3	3
BPE0600	2	3	3
BPE0600	3	2	3
BPE0600	3	3	2
BPE0700	2	3	3
BPE0700:	3	2	3
BPE0700	3	2	3
BPEOE50	2	3	1
BPEOE60	3	1	3
BPEOE70	2	3	3

BPEOE80	3	3	1
BPEPE50	1	3	3
BPEPE50	3	2	3
BPEPE60	3	3	2
BPEPE60	3	2	3
BPEPE60	2	3	3
BPEPE60	3	2	3
BPEPE70	3	3	2
BPEPE70	3	2	3
BPEPE80	2	3	3
BPEPE80	3	3	2
BPEPE80	3	3	3
BPEPE80	1	3	3
BPH0200	3	2	3
BPH0200	2	3	3

3.2 Attainment of Course Outcomes (75)   Total Marks 75.00

Institute Marks : 10.00

The curriculum for B. Tech. in Production Engineering has been approved in the academic council after thorough assessment by the internal and external members. It is intended to maintain a balance among various categories of subjects like professional core, program elective, open elective and project works such that the program outcomes (POs) as stated in Section 2.1 are substantially attained.

An engrained process (as portrayed in Figure 3.1) is employed to identify extent of compliance of the University curriculum for attaining the POs. The process is initiated by Curriculum review committee by considering the inputs from the stakeholders (Students, Faculties, Alumni, and Industry/employer), PO assessment, the coordinators and the Department Academic Committee (DAC). The departmental Board of Studies (DBOS) scrutinizes the suggestion and identifies the extent of compliance of the University curriculum for attaining the stated POs. Subsequently, it recommends redefining/improvement/updating of the curriculum to be put before University BOS followed by the Academic Council for approval.

The Program Outcomes (POs) for the Bachelor's Degree Course (B.Tech.) in Production Engineering are demarcated. The process of reviewing and identifying the extent of compliance of the University curriculum for attaining the POs is periodic and takes place once a year, usually in the last month of the academic year. From the data obtained from Students' attainment, students' contribution in publications, research, interaction outside and the projects, academic and placements' outcomes, the program assessment committee analyses the attainment of the concerned PO. After thorough survey and review, curriculum/POs revision is suggested to the DBOS.
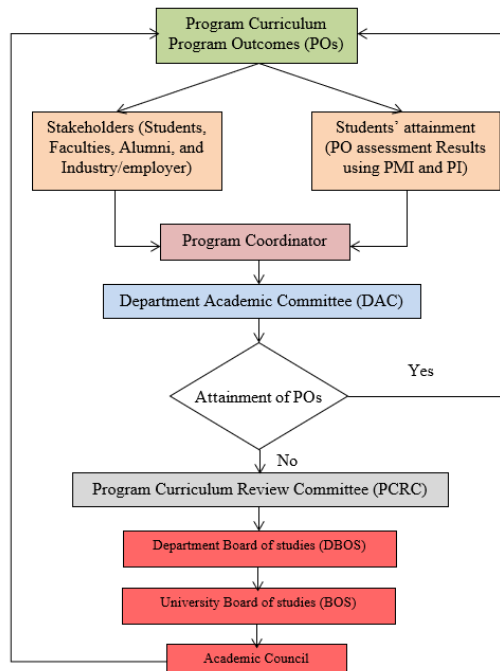
Figure 3.1 Process to identify extent of compliance of the curriculum for attaining the POs

All the courses offered in the program curriculum are broadly classified into 4 categories with their individual assessment methods:

1. Theory courses

2. Practical courses

3. Sessional courses

4. Project

The performance of student in each semester is assessed for a maximum of 100 marks for theory, practical and sessional/project components. These different categories of courses have different assessment schemes as discussed in the table below

Course category:	Assessment Methods:	Evaluator

Theory courses (assessed out of 100 marks)	**- Continuous assessment of 20 marks:**
	
	  - Assessment is done through student's performance in different assignments/tests/tasks/learning activities given by the course faculty-member. The tasks are designed to address all the course outcomes almost uniformly. These tasks are given at different times in the semester.
	
	- Mid semester examination/assessment of 30 marks (questions corresponding to attainment of different COs):
	
	  - Assessment is done through student's performance in the mid-semester examination which is conducted once in a semester which is currently of one hour duration. As the name implies, this examination is conducted in the middle of the semester.
	
	  - Frequency: once in a semester.
	
	  - Questions are set to assess the attainments of certain course outcomes defined for the course, through the students' marks or scores.
	
	- End semester examination/assessment of 50 marks (questions correspond to attainment of different COs):
	
	  - Assessment is done through student's performance in the end-semester examination which is conducted at the end of every semester. This examination is currently of two hours duration.
	
	  - Frequency: once in a semester.
	
	  - Questions are set to assess the attainments of course outcomes defined for the course through the students' marks or scores.
		- Continuous assessment is done by the concerned faculty member for the course teaching the student.
		
		- Answer script for mid semester examination is evaluated by the designated faculty member and marks passed on to the examination cell for further compilation.
		
		- Answer script for end semester examination is evaluated by the designated faculty member and marks passed on to the examination cell for further compilation.

Practical courses (assessed out of 100 marks)	**- Continuous assessment of 70 marks** - Assessment is done through student performance in day to day laboratory activities where the student's involvement, conduct of the experiment, recording of observations and analysis/ design outputs, documentation of results and observations, clarity of concept is taken into account by the designated laboratory faculty member. - All the laboratory tasks are designed to assess the attainments of different course outcomes defined for the course through students' marks or scores. **- End semester examination/ assessment of 30 marks** - Assessment is done through conduct of a given experiments tasks, viva, etc. This is normally conducted at the end of the semester and is normally of three hour duration. - Frequency: once in a semester. - The tasks, questionnaires are mapped to course outcomes and the students' marks or score is used to compute the attainment.	- Continuous assessment is done by the concerned faculty member for the laboratory course teaching the student. - End semester examinations, tasks, viva are conducted by the concerned faculty member. - Marks from continuous assessment and performance in the end semester examination are passed onto the examination cell for further compilation.
Sessional courses (assessed out of 100 marks)	**- Continuous assessment of 100 marks:** - Assessment is done through student's performance in different assignments/tests/tasks/learning activities given by the course faculty-member. The tasks are designed to address all the course outcomes almost uniformly. - Frequency: Assessed throughout the semester. - Different tasks are mapped to different outcomes and the students' marks or score in that category is used to compute the attainment	- Continuous assessment is done by the concerned faculty member for the sessional course teaching the student and marks passed onto the examination cell for further processing.
Projects (assessed out of 100 marks)	- The project evaluation process is indicated below and includes consideration of factors related to contribution both as a group and as an individual in the process. Markings are based on: - Model or prototype/product development or software application (10 marks by panel and 10 marks by the Project guide/supervisor). - Modern tools, software and their usage (10 marks by panel). - Quality of project and innovation (10 marks by panel). - Presentation given by the student illustrating individual contribution (10 marks by panel). - Performance of the student in the viva (10 marks by panel) - Project report (20 marks) - Individual contribution report (10 marks by guide). - Performance of the student as a member of the group (10 marks by guide). - The panel reviewing the project work are external members from academia and industry. Suggestions made by the external members are noted by the project guides for future reference.	- Evaluators are already mentioned. The logistics for undergraduate programs is looked after by a Project Monitoring Committee (PMC). Marks from different assessment components are compiled by the PMC are passed on to the examination cell.

Attainment of course outcomes for theory courses:

Course Category	Type of Assessment	Assessment Tools	Marks	Category	CO Attainment type
Theory	Direct	Assignments, Quiz tests (Formative assessments)	20	Cumulative Internal Examination (CIE)	Formative type
		Mid Semester Examination	30	Cumulative Internal Examination (CIE)	Direct CO Att. (70% weightage)
		End Semester Examination	50	Semester End Examination (SEE)	
	Indirect	Course Completion feedback/ Survey forms			Indirect CO Att. (30% weightage)

Data Acquisition Process CO attainment of theory courses:

- For direct CO attainment, all the questions of mid-semester and end semesters are mapped with course outcomes during the preparation of the question paper.

- For the indirect CO attainment, semester-end feedbacks are collected by the department to acquire opinions about each CO from the students.

- During Covid 19, marks obtained by all the students from the online examinations are shared by the exam coordinator for CO attainment analysis.

- Final computation of course outcomes is done through spreadsheets by the concerned faculty. CO attainment information will be compiled by the course coordinators and information passed on to the School Quality Assurance Cell and Program Assessment Committee for subsequent decisions and actions.

- The calculation for attainments is performed after the declaration of end-semester examination results. All documentations related to attainments are maintained by the course coordinators.

Attainment Process of a Theory Course:

Threshold levels for direct CO Attainment	
Level= 3	$100 \geq$ Percentage attainment in each CO $\geq$ Threshold$_1$
Level= 2	Threshold$_1$ > Percentage attainment in each CO $\geq$ Threshold$_2$
Level= 1	Threshold$_2$ > Percentage attainment in each CO > 0

(Threshold$_1$ =70%,   Threshold$_2$=40%)

Threshold values are decided by the Board of Study and may be altered to other values depending on the complexities and hardness of questions in the Mid and End Semester Examinations. Direct CO attainment is calculated for each student as shown below

$$\text{Percentage attainment in each CO} = \frac{\text{Total marks obtained by the student corresponding to the particular CO}}{\text{Total marks allotted to questions mapped the particular CO}}$$

Attainment of each CO = Average of the levels obtained by all the students

Direct CO attainment of a course= Average of all five COs

Threshold levels for indirect CO Attainment	
Level= 3	100 ≥ Percentage attainment in each CO ≥ Threshold$_1$
Level= 2	Threshold$_1$ > Percentage attainment in each CO ≥ Threshold$_2$
Level= 1	Threshold$_2$ > Percentage attainment in each CO > 0

(Threshold$_1$ =70%,   Threshold$_2$=40%)

Attainment of each CO = Average of the levels obtained by all the students

Indirect CO attainment of a course= Average of all five COs

Final CO Attainment level= (0.7) * Direct CO Attainment + (0.3) * Indirect CO Attainment

Attainment of course outcomes for Practical/Sessional courses:

The course outcome attainment is assessed based on the student's performance in cumulative internal examination (which included continuous assessment through experimental activities/tasks) and semester-end examination. A summary of different assessment components and respective weightage is given in the table below.

Course Category	Assessment Tools	Marks	Category	CO Attainment type
Sessional	For every experiment, evaluation is to be done for corresponding Course Outcomes through the performance of students, viva, record marks	80	Cumulative Internal Examination (CIE)	Direct CO Att. (70% weightage)
	End Semester Examination (Viva/ Test / Quiz)	20	Semester End Examination (SEE)	
	Course Completion feedback			Indirect CO Att. (30% weightage)

The experimental activities and tasks are mapped to different Course Outcomes (COs) and are used to compute the class average corresponding to every CO in the course as described below: Cumulative Internal Examination: The class average corresponding to each CO is assessed as below.

Threshold levels for Attainment		
Level 3	100 ≥ Percentage attainment in each CO ≥ Threshold$_1$	Threshold$_1$ = 80% Threshold$_2$ = 60%
Level 2	Threshold$_1$ > Percentage attainment in each CO ≥ Threshold$_2$	
Level 1	Threshold$_2$ > Percentage attainment in each CO > 0	

(Threshold$_1$ =70%,   Threshold$_2$=40%)

Threshold values are decided by the Board of Study and may be altered to other values depending on the complexities and hardness of experiments.

Final CO Attainment level= (0.7) * Direct CO Attainment + (0.3) * Indirect CO Attainment

Attainment of course outcomes for Projects:

A summary of different assessment components and respective weightage is given in the table below.

Course Category	Assessment Tools	Marks	Category	CO Attainment type
Project	For a project done by a student, evaluation is to be done for corresponding Course Outcomes through the performance of students. This evaluation is done by the respective guide.	80	Cumulative Internal Examination (CIE)	Direct CO Att. (70% weightage)
	End Semester Examination (presentation, QnA)	20	Semester End Examination (SEE)	
	Course Completion feedback			Indirect CO Att. (30% weightage)

Final CO Attainment level= (0.7) * Direct CO Attainment + (0.3) * Indirect CO Attainment

Example of Course Outcomes (COs) Attainment of a theory course:

Subject: **Strength of Materials (Subject Code: BPE04002)**

COURSE OUTCOMESS: At the end of this course, students will demonstrate the ability to

CO1	Apply and analyze composite bars in tension and compression, temperature stresses, 2D stress system, principal stresses, Mohr's circle, principal strains, measurement of strains.
CO2	Construct shear force and bending moment diagrams for statically determinate beams.
CO3	Analyze problems of simple bending in initially straight beams and composite beams.
CO4	Solve problems of torsion in solid and hollow shafts and to calculate slope and deflection of beams by integration and Macaulay's method.
CO5	Write buckling load in columns and to evaluate stress in the columns and to calculate dimensions of the component using theories of failure.

Course Articulation Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	1	1	2	1	2	3	1
CO2	3	3	3	3	1	2	2	1	1	2	2	3
CO3	3	3	3	3	1	2	1	1	2	1	1	2
CO4	3	3	3	3	2	1	1	1	1	2	2	2
CO5	3	3	3	3	1	1	1	2	1	2	2	3

1: Slight (Low); 2: Moderate (Medium); 3: Substantial (High); "---": No Correlation

Program Articulation Matrix row for this Course

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Course	3	3	3	3	2	2	1	1	2	2	2	3

Mid Term Examination

<div align="center">MID-TERM EXAMINATION</div>

Program	B.Tech.
Subject	Strength of Materials
Semester	4th
Branch	Production Engineering
AY	2022-23

								Automatically Calculated		
Course Outcome	CO1	CO2	CO3	CO1	CO2	CO3	CO1	CO2	CO3
Maximum Marks	2	2	2	8	8	8	10	10	10
Question No	1			2	3	4			
Reg. No. / Name	a	b	c						

#	Reg. No.	Name	a	b	c	2	3	4	CO1	CO2	CO3
1	2102110001	ROSHAN SAHOO	2	2	2	4	6	5	6	8	7
2	2102110004	PAYAL PANDA	2	2	2	6	8	6	8	10	8
3	2102110005	SOUMYA SAGAR DEHURY	2	2	2	0	0	0	2	2	2
4	2102110007	ADYASHA PALLAI	2	2	2	6	8	6	8	10	8
5	2102110010	MUKUL KUMAR SAHU	2	2	2	5	5	5	7	7	7
6	2102110011	CHINMAYA MISHRA	1	1	1	5	6	4	6	7	5
7	2102110012	SUBHAM DEEP DHAL	1	1	1	4	5	7	5	6	8
8	2102110013	ABHIJEET RATH	0	0	0	0	0	0	0	0	0
9	2102110014	SHUBHAM GOURAV MISHRA	1	1	1	7	4	6	8	5	7
10	2102110015	SHANKAR CHANDRA MARANDI	1	1	1	6	6	6	7	7	7
11	2102110016	AMRITA DUBEY	2	2	2	7	5	5	9	7	7
12	2102111018	MOUSUMI HOTA	2	2	2	6	7	5	8	9	7
13	2102111019	LOKESH KUMAR PANDA	2	2	2	7	8	7	9	10	9
14	2102110020	MOHIT MUKHI	2	2	2	8	6	7	10	8	9
15	2102110022	AYUSH KUMAR BEHERA	1	1	1	5	4	5	6	5	6
16	2102110023	TEJESH PATNAIK	2	2	2	8	6	7	10	8	9
17	2102110026	SATYABRATA JENA	2	2	2	7	6	7	9	8	9

MT | ET | Attainment | PO Attainment | PSO Attainment | (+)

End Term Examination

<div align="center">END TERM EXAMINATION</div>

Program	B.Tech.
Subject	Strength of Materials
Semester	4th
Branch	Production Engineering
AY	2022-23

											These cells are automatically calculated				
Course Outcomes	CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
Maximum Marks	2	2	2	2	2	8	8	8	8	8	10	10	10	10	10
Question No	1					2	3	4	5	6					
Reg. No. / Name	a	b	c	d	e										

#	Reg. No.	Name	a	b	c	d	e	2	3	4	5	6	CO1	CO2	CO3	CO4	CO5
1	2102110001	ROSHAN SAHOO	2	2	2	2	2	4	8	6	4	5	6	10	8	6	7
2	2102110004	PAYAL PANDA	2	2	2	2	2	8	6	8	6	6	10	8	10	8	8
3	2102110005	SOUMYA SAGAR DEHURY	2	2	2	2	2	0	0	0	0	0	2	2	2	2	2
4	2102110007	ADYASHA PALLAI	2	2	2	2	2	6	8	6	7	6	8	10	8	9	8
5	2102110010	MUKUL KUMAR SAHU	2	2	2	2	2	5	7	5	7	5	7	9	7	9	7
6	2102110011	CHINMAYA MISHRA	1	2	1	2	2	4	6	6	4	5	5	8	7	6	7
7	2102110012	SUBHAM DEEP DHAL	2	1	2	2	1	7	4	4	6	4	9	5	6	8	5
8	2102110013	ABHIJEET RATH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2102110014	SHUBHAM GOURAV MISHRA	1	2	1	2	1	4	6	5	6	5	5	8	6	8	6
10	2102110015	SHANKAR CHANDRA MARANDI	1	2	1	2	2	6	7	6	6	6	7	9	7	8	8
11	2102110016	AMRITA DUBEY	2	2	2	2	2	8	5	5	7	5	10	7	7	9	7
12	2102111018	MOUSUMI HOTA	2	2	2	2	2	5	6	5	5	5	7	8	7	7	7
13	2102111019	LOKESH KUMAR PANDA	2	2	2	2	2	8	7	8	7	7	10	9	10	9	9
14	2102110020	MOHIT MUKHI	2	2	2	2	2	6	6	6	6	6	8	8	8	8	8
15	2102110022	AYUSH KUMAR BEHERA	2	1	2	1	1	4	4	4	4	4	6	5	6	5	5
16	2102110023	TEJESH PATNAIK	2	2	2	2	2	8	6	7	6	8	10	8	9	8	10
17	2102110026	SATYABRATA JENA	2	2	2	2	2	6	7	8	6	6	8	9	10	8	8

MT | ET | Attainment | PO Attainment | PSO Attainment | (+)

CO Attainment

							CO Attainment			

Program	B.Tech.
Subject	Strength of Materials
Semester	4th
Branch	Production Engineering
AY	2022-23

	0-3 scale	%
Final Attainment	2.65	0.88
Define Attainment Levels	0.6	0.3
Levels	3	2

Average attainment of Course Outcomes -->						2.62	2.71	2.67	2.62	2.62
		Percentage Attainment				Attainment in (0-3) scale				
Reg. No.	Name	CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5

	Reg. No.	Name	CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
1	2102110001	ROSHAN SAHOO	0.60	0.90	0.75	0.60	0.70	2	3	3	2	3
2	2102110004	PAYAL PANDA	0.90	0.90	0.90	0.80	0.80	3	3	3	3	3
3	2102110005	SOUMYA SAGAR DEHURY	0.20	0.20	0.20	0.20	0.20	1	1	1	1	1
4	2102110007	ADYASHA PALLAI	0.80	1.00	0.80	0.90	0.80	3	3	3	3	3
5	2102110010	MUKUL KUMAR SAHU	0.70	0.80	0.70	0.90	0.70	3	3	3	3	3
6	2102110011	CHINMAYA MISHRA	0.55	0.75	0.60	0.60	0.70	2	3	2	2	3
7	2102110012	SUBHAM DEEP DHAL	0.70	0.55	0.70	0.80	0.50	3	2	3	3	2
8	2102110013	ABHIJEET RATH	0.00	0.00	0.00	0.00	0.00	1	1	1	1	1
9	2102110014	SHUBHAM GOURAV MISHRA	0.65	0.65	0.65	0.80	0.60	3	3	3	3	2
10	2102110015	SHANKAR CHANDRA MARANDI	0.70	0.80	0.70	0.80	0.80	3	3	3	3	3
11	2102110016	AMRITA DUBEY	0.95	0.70	0.70	0.90	0.70	3	3	3	3	3
12	2102110018	MOUSUMI HOTA	0.75	0.85	0.70	0.70	0.70	3	3	3	3	3
13	2102111019	LOKESH KUMAR PANDA	0.95	0.95	0.95	0.90	0.90	3	3	3	3	3
14	2102110020	MOHIT MUKHI	0.90	0.80	0.85	0.80	0.80	3	3	3	3	3

MT | ET | **Attainment** | PO Attainment | PSO Attainment | ⊕

PO Attainment

Program	B.Tech.
Subject	Strength of Materials
Semester	4th
Branch	Production Engineering
AY	2022-23

			PO Attainment											

CO Attainment	PO Attainment	2.65	2.65	2.65	2.65	1.77	1.77	0.88	0.88	1.77	1.77	1.77	2.65
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
2.65	PAM Row	3	3	3	3	2	2	1	1	2	2	2	3

CO-PO Mapping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	1	1	2	1	2	3	1
CO2	3	3	3	3	1	2	2	1	1	2	2	3
CO3	3	3	3	3	1	2	1	1	2	1	1	2
CO4	3	3	3	3	2	1	1	1	1	2	2	2
CO5	3	3	3	3	1	1	1	2	1	2	2	3

MT | ET | Attainment | **PO Attainment** | PSO Attainment | ⊕

PSO Attainment

Program	B.Tech.
Subject	Strength of Materials
Semester	4th
Branch	Production Engineering
AY	2022-23

			PO Attainment		

CO Attainment	PSO Attainment	2.65	2.65	2.65
		PSO1	PSO2	PSO3
2.65	PSO Mapping	3	3	3

CO-PSO Mapping	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

MT | ET | Attainment | PO Attainment | **PSO Attainment** | ⊕

Final PO Attainment

Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct	2.58	2.67	2.62	2.58	2.46	2.42	2.52	2.78	2.32	2.48	2.42	2.58
Exit Survey	2.71	2.87	2.65	2.91	2.74	2.35	2.87	2.33	2.73	2.78	2.46	2.76
Alumni Survey	2.57	2.69	2.14	2.67	2.84	2.94	2.87	2.39	2.54	2.56	2.87	2.31
Employer Survey	2.47	2.54	2.68	2.57	2.64	2.78	2.43	2.62	2.67	2.39	2.76	2.41
Final Attainment	2.58	2.69	2.52	2.68	2.67	2.62	2.67	2.53	2.57	2.55	2.63	2.52
Final Attainment (%)	86.08	89.75	84.08	89.42	89.00	87.42	89.08	84.33	85.50	85.08	87.58	83.83

... | PO Attainment Tool | PSO Attainment Tool | **Final PO Attainment** | Final PSO Attainment | ⊕ | ◀

Final PSO Attainment

Method	PSO1	PSO2	PSO3
Direct	2.58	2.58	2.58
Exit Survey	2.71	2.87	2.65
Alumni Survey	2.57	2.69	2.14
Employer Survey	2.47	2.54	2.68
Final Attainment	2.58	2.67	2.51
Final Attainment (%)	86.08	89.00	83.75

▶ ... | PO Attainment Tool | PSO Attainment Tool | Final PO Attainment | **Final PSO Attainment**

3.2.2 Record the attainment of Course Outcomes of all courses with respect to set attainment levels (65)   Institute Marks : 65.00

The target or the expected level of attainment for all course outcomes defined for each course: 2.55

The attainment of course outcomes for all courses with respect to set attainment levels is computed using the steps as oulined in section 3.2.1. The steps are also put forward in the following lines.

1. The program though its Board of Studies recrords the attainment level for all the programs in its Board of Studies meetings.

2. Based on the attainment level, the course outcome attainment level is computed for all the courses form mid semester and end semester examinations.

3. The target is set based on the percentage of marks for achieving the attainment level 1/2/3.

4. The final attainment is a combination of attainment in both mid semester (CIE) and end semester examinations (SEE).

5. The summative assessment only are used for direct attainment computation. Formative assessments are considered to be enabling the students to perform well in CIE and SEEs and hence are implicit to CO outcome attainment.

6. The indirect attainment for Course Outcomes is measured based on survey questionairre based on CO statements though various methods such as google forms, printed questionairre or directly asking the students.

7. The final course outcome attainment is computed giving 70% weightage to direct attainment though examination and 30% weightage to indirect attainment through surveys.

3.3 Attainment of Program Outcomes and Program Specific Outcomes (75)   Total Marks 75.00

3.3.1 Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10)   Institute Marks : 10.00

The assessment of attainment of Program Outcomes and Program Specific Outcomes are done both through direct and indirect methods as depicted in Section 3.2. The steps are concisely illustrated in the following lines.

1. From the direct and indirect attainment of COs, the final attainment of COs is obtained for each course.

2. Using the PAM row for that course, the direct attainment of Program Outcomes is obtained.

3. Various surveys are conducted for obtaining the indirect attainment of Program Outcomes, namely, Student Exit Survey, Alumni Survey and Employer Survey.

4. The final attainment is the average of the direct and indirect attainment of Program Outcomes.

5. The attainment of Program Specific Outcomes are obtained using steps similar to those of Program Outcomes.

3.3.2 Provide results of evaluation of each PO & PSO (65)   Institute Marks : 65.00

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BMA01001	3	3	2	2	1	3	2	1	3	1	1	1
BCH01001	3	3	1	1	2	3	3	1	3	1	2	1
BEC01001	3	2	3	3	2	2	1	1	2	1	1	1
BIT01001	3	3	3	3	2	1	2	2	3	1	2	3
BCE01001	3	2	2	2	1	2	1	1	3	2	2	3
BCH01002	3	1	2	1	1	3	3	2	3	2	1	1
BEC01002	3	2	3	3	2	3	3	1	3	1	3	1
BHU01002	3	3	3	3	2	1	1	2	3	1	2	3
BCE01002	3	2	2	2	2	3	3	1	1	2	2	2
BMA02001	3	3	2	2	2	3	3	1	3	1	3	1
BHU02001	2	1	1	2	1	3	3	1	3	3	3	1
BPH02001	3	3	3	3	2	2	1	2	2	2	3	3
BEE02001	3	3	2	1	1	1	2	1	2	1	3	1
BME02001	3	3	2	1	2	2	3	2	3	1	2	1
BPH02002	3	3	2	1	3	2	1	1	2	3	1	1
BEE02002	3	3	2	1	3	1	2	1	2	3	2	1
BHU02002	1	2	1	2	2	3	2	2	1	3	1	1
BME02002	2	1	1	1	2	3	3	1	3	1	2	1
BMA03001	3	3	2	2	1	1	1	2	2	2	1	1
BPE03001	3	3	3	1	2	1	1	2	3	1	3	3
BPE03002	2	2	3	3	2	2	3	2	3	2	2	3
BPE03003	3	3	3	3	2	2	3	2	3	1	3	3
BHU03001	2	1	1	1	2	2	3	1	1	1	3	2
BPE03004	3	3	3	3	3	3	1	2	2	1	2	2
BPE03006	2	2	3	3	2	3	3	1	3	1	2	3
BMA04001	3	3	2	1	2	3	3	1	1	2	3	1
BPE04001	3	3	3	3	3	1	3	2	3	3	2	2
BPE04002	3	3	3	3	1	3	1	1	1	1	2	2
BPE04003	3	2	3	3	2	3	1	3	3	3	3	3
BHU04001	1	2	2	1	2	2	2	1	2	2	3	2
BPE04004	3	3	3	3	1	2	2	2	1	2	2	2
BPE04005	3	2	3	2	3	2	3	2	2	3	3	2
BPE04006	3	3	3	3	2	2	1	2	1	3	3	2
BPE04007	3	3	3	3	2	3	3	3	2	2	3	2
BPE05001	3	3	3	3	2	3	3	3	3	1	3	2
BPE05002	3	3	3	3	3	3	2	3	2	1	2	2
BPE05003	3	2	3	2	3	3	2	2	3	3	3	2
BPEPE501	3	3	3	3	3	2	3	3	3	2	2	2
BPEPE502	3	3	3	3	3	2	2	3	2	1	2	2
BPEOE501	1	1	3	2	2	2	2	2	3	2	2	2
BPE05004	3	3	3	3	2	1	3	3	1	2	2	2
BPE05005	3	2	1	3	3	3	2	2	3	1	3	1
BPE05006	3	3	3	3	3	3	3	3	2	1	3	2
BPE060012	3	3	3	3	1	3	3	2	3	1	3	2
BPE06002	3	3	3	3	2	2	3	3	2	2	3	2
BPEPE601	3	3	3	3	2	3	2	3	3	1	3	2
BPEPE602	3	2	3	3	2	3	2	3	2	3	3	3
BPEPE605	2	3	3	3	3	3	2	2	1	2	3	2
BPEPE606	3	2	3	3	3	2	2	3	2	3	3	3
BPEOE602	3	2	2	3	3	3	2	3	2	3	3	3
BPE06003	3	3	3	3	2	2	3	2	2	2	2	2
BPE06004	3	3	3	3	2	2	3	3	3	1	2	2
BPE06005	2	2	3	3	2	3	3	1	2	1	2	2
BPE07001	2	2	3	1	3	3	3	2	1	3	3	2
BPE07002	3	2	3	3	3	3	2	3	2	3	2	3
BPEPE701	2	3	3	2	3	2	1	2	1	2	3	3
BPEPE702	2	2	3	3	2	1	3	2	3	2	3	2

BPEOE702	2	2	3	3	3	1	3	2	2	1	3	3
BPE07003	3	3	3	3	3	3	2	2	3	2	2	2
BPEPE801	2	2	3	2	3	2	1	2	2	2	2	3
BPEPE804	2	2	3	3	3	2	3	2	1	1	3	3
BPEPE805	2	3	2	3	2	1	1	2	2	2	3	2
BPEPE806	3	3	3	1	2	2	3	3	2	1	2	2
BPEOE802	3	2	3	3	3	2	2	3	3	3	3	3

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Student Por	2.56	2.67	2.55	2.53	2.64	2.58	2.53	2.64	2.78	2.68	2.73	2.65
Graduate S	2.53	2.57	2.65	2.76	2.65	2.68	2.58	2.65	2.75	2.53	2.54	2.63
Alumni Surv	2.63	2.67	2.69	2.69	2.57	2.73	2.68	2.75	2.71	2.61	2.63	2.59
Employer S	2.84	2.86	2.78	2.86	2.87	2.64	2.86	2.82	2.78	2.74	2.57	2.85

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
InDirect Attainment	2.64	2.69	2.67	2.71	2.68	2.66	2.66	2.72	2.76	2.64	2.62	2.68
Direct Attainment	2.69	2.48	2.59	2.41	2.20	2.28	2.25	1.98	2.25	1.80	2.41	2.03

PSO Attainment

Course	PSO1	PSO2	PSO3
BCE01001	3	2	3
BCE01002	3	3	2
BCH01001	3	3	3
BCH01002	2	3	1
BEC01001	3	2	3
BEC01002	3	3	2
BEE02001	3	2	3
BEE02002	3	3	2
BEE03004	2	3	3
BHU01002	3	3	2
BHU01002	3	3	2
BHU02001	3	2	3
BHU02002)	3	3	2
BHU03001	2	3	1
BHU04001	3	2	3
BIT01001	3	3	2
BMA01001	2	3	3
BMA02001	3	2	3
BMA03001	3	3	2
BMA04001	2	3	3
BME02001	3	2	3
BME02002	3	3	2
BPE 03003	2	3	3
BPE03001	3	2	3
BPE03002	3	3	1
BPE03004	2	3	3
BPE03005	3	2	3
BPE03006	3	3	2
BPE04001	1	3	3
BPE04002	3	2	3
BPE04003	2	3	3
BPE04004	3	2	3
BPE04005	3	3	2
BPE04006	2	3	3
BPE04007	3	2	3
BPE05001	3	3	2
BPE05002	2	3	3
BPE05003	3	2	3
BPE05004	2	3	2
BPE05005	3	3	2
BPE05006	3	2	3

BPE06001	3	3	3
BPE06002	3	3	3
BPE06003	2	3	3
BPE06004	3	2	3
BPE06005	3	3	2
BPE07001	2	3	3
BPE07002	3	2	3
BPE07003	3	2	3
BPEOE501	2	3	1
BPEOE602	3	1	3
BPEOE702	2	3	3
BPEOE802	3	3	1
BPEPE501	1	3	3
BPEPE502	3	2	3
BPEPE601	3	3	2
BPEPE602	3	2	3
BPEPE605	2	3	3
BPEPE606	3	2	3
BPEPE701	3	3	2
BPEPE702	3	2	3
BPEPE801	2	3	3
BPEPE804	3	3	2
BPEPE805	3	3	3
BPEPE806	1	3	3
BPH02001	3	2	3
BPH02002	2	3	3

PSO Attainment Indirect

Survey	PSO1	PSO2	PSO3
Student Portfolio	2.76	2.57	2.74
Graduate Survey	2.59	2.84	2.71
Alumni Survey	2.64	2.78	2.81
Employer Survey	2.87	2.75	2.71

PSO Attainment Level

Course	PSO1	PSO2	PSO3
Direct Attainment	2.64	2.64	2.58
InDirect Attainment	2.72	2.74	2.74

4 STUDENTS' PERFORMANCE (100)   Total Marks 80.43

Institute Marks :

Table 4.1

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2023-24 (CAY)	2022-23 (CAYm1)	2021-22 (CAYm2)	2020-21 (CAYm3)	2019-20 (CAYm4)	2018-19 (CAYm5)	2017-18 (CAYm6)
Sanctioned intake of the program(N)	60	60	60	63	63	63	60
Total number of students admitted in first year minus number of students migrated to other programs/ institutions plus No. of students migrated to this program (N1)	59	34	26	36	44	61	58
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	5	4	6	6	6	10	13
Separate division students, If applicable (N3)	0	0	0	0	0	0	0
Total number of students admitted in the programme(N1 + N2 + N3)	64	38	32	42	50	71	71

Table 4.2

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully graduated without backlogs in any semester/ year of study (Without Backlog means no compartment or failures in any semester/ year of study)			
		I year	II year	III year	IV year
2023-24 (CAY)	64				
2022-23 (CAYm1)	38	31			
2021-22 (CAYm2)	32	24	22		
2020-21 (CAYm3)	42	35	29	28	
2019-20 (LYG)	50	44	38	36	36
2018-19 (LYGm1)	71	57	43	41	37
2017-18 (LYGm2)	71	54	52	47	44

Table 4.3

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]			
		I year	II year	III year	IV year
2023-24 (CAY)	64				
2022-23 (CAYm1)	38	31			
2021-22 (CAYm2)	32	24	24		
2020-21 (CAYm3)	42	36	35	34	
2019-20 (LYG)	50	44	44	43	37
2018-19 (LYGm1)	71	61	51	49	49
2017-18 (LYGm2)	71	58	54	53	53

4.1 Enrolment Ratio (20)

Total Marks 14.00

Institute Marks : 14.00

	N (From Table 4.1)	N1 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2023-24 (CAY)	60	59	98.33
2022-23 (CAYm1)	60	34	56.67
2021-22 (CAYm2)	60	26	43.33

Average [(ER1 + ER2 + ER3) / 3] : 66.11

Assessment : 14.00

4.2 Success Rate in the stipulated period of the program (20)

Total Marks 12.18

4.2.1 Success rate without backlogs in any semester / **year of study** (15)

Institute Marks : 8.55

Item	Latest Year of Graduation, LYG (2019-20)	Latest Year of Graduation minus 1, LYGm1 (2018-19)	Latest Year of Graduation minus 2 LYGm2 (2017-18)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and seperated division, if applicable	50.00	71.00	71.00
Y Number of students who have graduated without backlogs in the stipulated period	36.00	37.00	44.00

Average SI [(SI1 + SI2 + SI3) / 3] : 0.57

Assessment [15 * Average SI] : 8.55

4.2.2 Sucess rate in stipulated period (5)

Institute Marks : 3.63

Item	Latest Year of Graduation, LYG (2019-20)	Latest Year of Graduation minus 1, LYGm1 (2018-19)	Latest Year of Graduation minus 2 LYGm2 (2017-18)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and seperated division, if applicable	50.00	71.00	71.00
Y Number of students who have graduated in the stipulated period	37.00	49.00	53.00
Success Index [SI = Y / X]	0.74	0.69	0.75

Average SI[(SI1 + SI2 + SI3) / 3]: 0.73

Assessment [5 * Average SI] : 3.63

Note : If 100% students clear without any backlog then also total marks scored will be 20 as both 4.2.1 & 4.2.2 will be applicable simultaneously.

4.3 Academic Performance in Second Year (10)

Total Marks 6.55

Institute Marks : 6.55

Academic Performance	CAYm1 (2022-23)	CAYm2 (2021-22)	CAYm3 (2020-21)
Mean of CGPA or mean percentage of all successful students(X)	7.63	7.73	8.07
Total number of successful students (Y)	24.00	35.00	44.00
Total number of students appeared in the examination (Z)	30.00	42.00	50.00
API [X * (Y/Z)]	6.10	6.44	7.10

Average API [(AP1 + AP2 + AP3)/3] : 6.55

Assessment [AverageAPI] : 6.55

4.4 Placement, Higher Studies and Entrepreneurship (30)

Total Marks 27.70

Institute Marks : 27.70

Item	CAYm1(2022-23)	CAYm2(2021-22)	CAYm3(2020-21)
Total No of Final Year Students(N)	43.00	49.00	53.00
No of students placed in the companies or goverment sector(X)	35.00	36.00	42.00
No of students admitted to higher studies with valid qualifying scores(GATE or equivalent State or National Level tests, GRE, GMAT etc.) (Y)	4.00	5.00	4.00
No of students turned enterpreneur in engineering/technology (Z)	2.00	3.00	3.00
Placement Index [(X+Y+Z)/N] :	0.95	0.90	0.92

Average Placement [(P1 + P2 + P3)/3] :   0.92

Assessment [30 * Average Placement] : 27.70

Program Name : Production Engg.
Assessment Year : 2022-23 (CAYm1)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Akankshya Sahoo	1902110007	Capgemini SE, cummins india	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
2	Lopamudra Nayak	1902111035	Capgemini SE, TCS(NINJA)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
3	Shruti Kashyap	1902111040	Capgemini SE	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
4	Deblina Chakraborty	1902110001	Capgemini SE, Genc, JSW	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
5	Aakash Singh	1902110003	Capgemini SE, Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
6	Deepam Kumar Gouda	1902111034	Capgemini SE, Genc, ADANI	.https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
7	Ananya Mohapatra	1902111042	Capgemini SE, Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
8	Shruti Joshi	1902111045	Capgemini SE, Genc, TCS(NINJA)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
9	Swapnali Debata	1902111046	Capgemini SE, Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
10	NISHANT BADU	1902111041	Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
11	Sujnan Sekhar Mishra	1802111046	Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
12	Debans Sahu	1902110002	Genc, TCS(NINJA)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
13	Ayush Singh	1902110015	Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
14	Saswat Rout	1902110017	Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
15	Tanmay Raj	1902111055	Genc, ADANI	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
16	Chinmay Kumar Patra	1902111057	Genc	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
17	Biswajit Behera	1902111063	Genc, TCS (DIGITAL)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
18	Akankshya Nayak	1902110006	AESS SOLUTIONS LTD	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
19	Ajit Kumar Kar	1802110006	ISERVEU	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
20	TANISHA JAIN	1902110024	ISERVEU	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
21	ADITI RAY	2003111004	ISERVEU	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
22	Ashutosh Padhy	1902110032	ADANI	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
23	Amarjeet Das	1902110012	TCS(NINJA), TATA AUTOCOMP	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
24	ANSHUMAN GARNAYAK	1902111050	TCS(NINJA)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
25	Sneha Pandey	1902111053	TATA AUTOCOMP	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
26	Sudhansu Ranjan Nayak	1802111057	ACMEGRADE	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
27	Anshuman Sarangi	1902111044	ACMEGRADE	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
28	Saumya Ranjan Mohanty	1802111050	IMMENSPHERE	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
29	Bhabani shankar Panda	1903111005	Byjus BDA (the learning app)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
30	MAKBUL MOHAMMAD	1902110020	Byjus BDA (the learning app)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
31	Deepak Chandra Pandua	1902110010	Byjus BDA (the learning app)	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
32	BHARAT MOHANTY	1802110008	Shri Mahavir Alloys	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link
33	Himanshu	2003110001	Shri Mahavir Alloys	https://drive.google.com/drive/folders/1Mo_ZJ-wZulQZkSGk8GlDwEsRCHlUiv9g?usp=drive_link

Assessment Year : 2021-22 (CAYm2)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Ayush Kumar Ram	1802110001	COGNIZANT GENC	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
2	Ankita Acharya	1802110013	GenC (DN),TATA ELECTRONICS,INFOSYS (SE)	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
3	Nandini Jain	1802110016	GenC (DN),WIPRO	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
4	Muskan Mishra	1802110017	COGNIZANT GENC, WIPRO, OFF CAMPUS TCS	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
5	Sonali Senapati	1802110020	GenC (DN)	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
6	Swati Sradhanjali	1802110022	GenC (DN)	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
7	Prakruti Kanungo	1802110025	COGNIZANT GENC	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
8	Gyanesh Kumar Prusty	1802110026	ISERVEU	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
9	Satyajeet Jena	1802110027	COGNIZANT GENC, OFF CAMPUS IBM	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
10	Jayalaxmi Behera	1802110028	BYJUS	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
11	NIBEDITA MURMU	1802110030	ISERVEU	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
12	Snigdharani Nayak	1802110032	ISERVEU	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
13	Satish Kumar Nayak	1802111034	COGNIZANT GENC	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
14	DHARAMAPURI SAMPAT ALWAR	1802111035	GenC Elevate (DN)	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
15	Mantosh Patra	1802111036	OFF CAMPUS IBM	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
16	Niraj Mishra	1802111037	OFF CAMPUS IBM	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
17	Suman sekhar patri	1802111042	COGNIZANT GENC	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
18	Rishav Mishra	1802111044	COGNIZANT GENC, WIPRO	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
19	Sweta Behura	1802111048	COGNIZANT GENC, INFOSYS	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
20	Shubham Naik	1802111052	INFOSYS	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
21	Swatismita Dhal	1802111053	COGNIZANT GENC, WIPRO	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
22	Raunak Namdeo	1802111060	ISERVEU	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
23	Abhishek Kabiraj	1802111061	MINDTREE	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
24	Soubhagya Ranjan Barik	1903111004	COGNIZANT GENC	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link
25	Atul Mishra	1903111006	ISERVEU	https://drive.google.com/drive/folders/1NteGxjSpddS6Y194ORoWPYTyeuH3Yvf6?usp=drive_link

Assessment Year : 2020-21 (CAYm3)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Ankita Meher	1702110003	TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
2	Biswanath Mishra	1702110008	TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
3	DASARI PRAVEEN KUMAR	1702110009	BYJUS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
4	Nishant Pattanaik	1702110011	COGNIZANT, COGNIZANT (SAP), INFOSYS (SAP)	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
5	P.Rohan Kumar	1702110012	COGNIZANT	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
6	Priyanka Sahoo	1702110013	COGNIZANT, TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
7	Rahul Sudhakar	1702110014	COGNIZANT, TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
8	Sagnika Tripathy	1702110017	INFOSYS, ACCENTURE	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
9	Sashank Sekhar Panda	1702110020	INFOSYS, TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
10	Satyajit Behera	1702110021	INTELIBIM	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
11	Sayed Farhat Ali	1702110022	INFOSYS (SAP), Infosys (Associate Business Analyst)	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
12	Shalini Panda	1702110023	COGNIZANT, ACCENTURE	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
13	SHWETA BOSE	1702110024	IBM(SAP)	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
14	Simran Apata	1702110025	ACCENTURE	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
15	SUMAN KUMAR SARAF	1702110028	INFOSYS, COGNIZANT	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
16	Yashraj Panda	1702110030	COGNIZANT	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
17	J JAYANTA KUMAR BARIK	1702110031	TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
18	Abhijeet Naik	1702111033	COGNIZANT, TCS DIGITAL	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
19	Abhisek Jena	1702111035	INFOSYS,TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
20	Aditya Kumar Nanda	1702111036	INFOSYS, ACCENTURE	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
21	Ashutosh Dash	1702111040	BYJUS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
22	Jagannath Swain	1702111044	BYJUS, PRADAN	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
23	Rituparna Mohanty	1702111051	INFOSYS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
24	Shreyasha Pradhan	1702111056	INFOSYS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
25	Sibasish Samal	1702111057	INFOSYS, COGNIZANT, TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
26	Sudeeksha Mishra	1702111060	COGNIZANT	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
27	Suraj Das	1702111062	TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
28	Suryakanta Samal	1702111063	INFOSYS, TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
29	Sambit Sahoo	1702110018	COGNIZANT	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
30	Jyotiranjan mohapatra	1803110002	INFOSYS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link
31	Satya Sourav Patel	1702111052	COGNIZANT, TCS	https://drive.google.com/drive/folders/1S4lpwJ1j_nztoAHyvBbAS_jwdULISwHE?usp=drive_link

4.5 Professional Activities (20)   Total Marks 20.00

4.5.1 Professional societies/chapters and organizing engineering events (5)   Institute Marks : 5.00

Professional Societies/ Chapters		
1.	The Institution of Engineers (India) student chapter	
2.	Society of Production Engineering	
3.	Aero Tech	

List of engineering events

Academic Year : 2023-24

Sl. No.	Event Type	Event Title/ Name	Resource Person	Duration / Date
01	Guest Lecture	3-Dimensional Stress Analysis in Structural Application	Prof. S. K. Panigrahi, Professor, Defense Institute of Advanced Technology, Pune	13.02.2024
02	Guest Lecture	Renewable Energy Technology by Harnessing Wind Power	Prof. Niranjan Sahoo, Professor, Department of Mechanical Engineering, IIT Guwahati	03.02.2024

Academic Year : 2022-23

Sl. No.	Event Type	Event Title/ Name	Resource Person	Duration / Date
01	Guest Lecture	Advances in machining and machinability studies under sustainable environment	Prof. Ashok Kumar Sahoo, KIIT University	2 hrs
02	Expert Talk	Challenges, opportunity and future aspects in aluminum industry	Er. Debasish Mallik, HINDALCO, Hirakud	08.02.2023

Academic Year : 2021-22

Sl. No.	Event Type	Event Title/ Name	Resource Person	Duration / Date
01	Guest Lecture	Four-dimensional printing for Innovative design	Dr. Rupinder Singh, NITTTR Chandigarh	2 hrs
02	Expert Talk	Transforming Design and Manufacturing: 3D Printing Transformation	Mr. Janardanan Venkat, Redington India Limited	2 hrs
03	Guest Lecture	3D printing Future homes: From project to product mindset	Dr Biranchi Panda, IIT Guwahati	2 hrs
04	Guest Lecture	3D Printing Data File Formats	Dr. Y. Ravi Kumar, NIT Warangal	2 hrs
05	Guest Lecture	Rapid Tooling: An Industrial application of 3-D printing	Dr. S. Kanmani Subbu, IIT Indian Palakkad, Kerala	2 hrs
06	Guest Lecture	Addressing Some Technological Challenges in Laser Additive Manufacturing	Prof. Asish Kumar Nath, IIT Kharagpur	2 hrs
07	Guest Lecture	Shaping the future of a nation through smart and additive manufacturing	Dr. Pulak Mohan Pandey, IIT Delhi	2 hrs
08	Guest Lecture	3D printing: Opportunity and challenges	Dr. Chandra Sekhar Tiwary, IIT Kharagpur	2 hrs
09	Guest Lecture	Biomaterials Implants: Status, and Challenges	Prof. Bikramjit Basu, IISC Bangalore	2 hrs
10	Expert Talk	Concept of Data Sciences	Prof. P. Radha Krishna, Professor, Department of Computer Science and Engineering, NIT, Warangal, India	2 hrs
11	Expert Talk	Data Analysis for reliability quantification of safety critical system	Dr. Lalit Singh, Scientist, NPCIL-BARC, DAE, Govt. of India	2 hrs
12	Expert Talk	Evolutionary multi-objective optimization – Case study	Dr. Probir Saha, IIT, Patna	2 hrs

13	Guest Lecture	Prediction Tools in Manufacturing Processes	Prof. Siba Sankar Mohapatra, NIT, Rourkela	2 hrs
14	Guest Lecture	Machine learning approach for fault diagnosis	Prof. Arun Kumar Samantaray, IIT Kharagpur	2 hrs
15	Expert Talk	Applications of Data Science in Supply Chain Analytics	Mr. Srichandan Sahu, Business & SCM Transformational Leader, Mumbai	2 hrs
16	Guest Lecture	Significance of ISM (Interpretive Structural Modeling) in Data Science	Prof. Sushant Tripathy, KIIT DU	2 hrs
17	Guest Lecture	Input-Output Modeling of Manufacturing Process	Prof. D. K. Pratihar, IIT Kharagpur	2 hrs
18	Guest Lecture	Regression Techniques and their Implementations	Dr. Sanjay Panda, Assistant Professor, NIT, Warangal	2 hrs
19		Mind Management	Prof. Alok Satapathy, NIT, Rourkela	2 hrs
20	Guest Lecture	Industry 4.0	Prof. Surjya K Pal, IIT Kharagpur	2 hrs
21	Guest Lecture	Smart Factory with Digital Twin	Mr. Aravind Ramachandran	2 hrs
22	Guest Lecture	Sustainable Manufacturing towards Industry 4.0	Prof. Shibendu Shekhar Roy	2 hrs
23	Guest Lecture	Experimental Investigations in Micro Forming	Dr. Kakandikar Ganesh M., Professor and Associate Head School of Mechanical Engineering, MIT World Peace University, Pune	2 hrs
24	Guest Lecture	Micro-forming using Lasers	Dr. Ravi Kant, Assistant Professor, Department of Mechanical Engineering, IIT Ropar	2 hrs
25	Guest Lecture	Relevance of Indentation Tests in Materials Research	Dr. B. Sridhar Babu, Professor Department of Mechanical Engineering, CMRIT, Hyderabad	2 hrs
26	Guest Lecture	3D and 4D Manufacturing Processes	Dr. Kaushik Kumar, Associate Professor Department of Mechanical Engineering, BIT Mesra, Ranchi	2 hrs
27	Guest Lecture	Tribology – A Tool for Material Characterization	Prof. Prasanta Sahoo, Professor Department of Mechanical Engineering, Jadavpur University, Kolkata	2 hrs
28	Guest Lecture	Abrasive Flow Finishing of Complex Features	Dr. Mamilla Ravi Sankar, Associate Professor Department of Mechanical Engineering, IIT Tirupati	2 hrs
29	Guest Lecture	Functionally Graded Materials (FGM): Design, Processing, & Applications	Dr. A. K. Chaubey, Sr. Principal Scientist Department of Advanced Materials Technology, CSIR-IMMT, Bhubaneswar	2 hrs
30	Guest Lecture	Application of textured cutting tools in Machining	Dr. Sudarsan Ghosh, Professor Department of Mechanical Engineering, IIT Delhi	2 hrs
31	Guest Lecture	Micromachining: New Challenges	Prof. Bijoy Bhattacharyya, Professor Department of Production Engineering Jadavpur University, Kolkata	2 hrs
32	Guest Lecture	Laser and Tungsten Inert Gas (TIG) welding for surface modification	Dr. Manoj Masanta, Assistant Professor Department of Mechanical Engineering, NIT Rourkela	2 hrs

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4.4.2 Publication of technical magazines, newsletters, etc. (5)   Institute Marks : 5.00

Every year, three Newsletters are brought out by the office of the Dean, Students Welfare of the University. The students of the department of Production Engineering constantly contribute in the editting as well as the publishing of the Newsletters.

Every year, a **Galaxy** book is published showcasing the talents, achievements of the passing out students and the students of the department extend their contribution in the design, organizing as well as publishing of the Galaxy.

Each year one **Souvenir** book is published by the Society of Production Engineering highlighting the achievements of the faculty members as well as the students of the department. In addition to it, it consists of updated data of information regarding the department. The design, editing as well as publishing of the same is undertaken by the student members under the mentorshi of facuty advisors.

RESONANCE Souvenir: This **souvenir** book is published every year. It consists of abstracts of the presented papers in the technical fest.

4.4.3 Participation in inter-institute events by students of the program of study (10)   Institute Marks : 10.00

The ASME Club, an acronym for the American Society of Mechanical Engineers, stands as a dynamic intersection for mechanical engineering fanatics committed to fostering a community of collaboration and innovation, the club serves as a platform for students and professionals alike to connect and thrive. Through regular meetings, workshops, and events, the ASME Club develops an environment where members can share opinions, engage in projects, and create everlasting connections. Emphasizing professional development, the club furnishes valuable insights through guest lectures, seminars, and industry visits, assuring constituents stay alongside the latest advancements in mechanical engineering. The ASME Clubs commitment extends to practical learning, offering hands-on experience through workshops and projects. Participation in engineering contests showcases the mastery and skills of its fellows on a broader stage, enhancing their problem-solving capacities. Beyond its internal focus, the ASME Club actively contributes to the community by organizing outreach programs to promote STEM education. By inspiring the next era of engineers, the club plays a vital role in shaping the future of the field. In essence, the ASME Club is a vibrant community that not only nurtures the growth of its constituents in mechanical engineering but also contributes to the broader societal advancement of science and technology.

SMART INDIA HACKATHON

Veer Surendra Sai University of Technology student cell of ASME is an active technical society with numerous achievements. During the previous semester, the Smart India Hackathon was organized at the Veer Surendra Sai University of Technology. In that competition, 5 groups of students from the ASME STUDENT SECTION of VSSUT participated and all 5 groups were selected in the preliminary round. One group (Team ANUSANDHAN) was selected for the final round and participated in the SIH organized in Hyderabad. All the five projects were innovative and extraordinary. The team ANUSANDHAN led by Jyoti Ranjan Sahoo addressed the problem statement- underwater visualization of cultural and historical structures like Dwaraka, Mahabalipuram, and Ram Setu under the theme Heritage and Culture. A remotely operated underwater vehicle was proposed to capture the footage of archaeological sites. The team WELLNESS WORDSMITHS led by K. Anish worked under the theme of review websites for medical students and proposed their solution to formulate a standard medical guide to help medical students and introduced book evaluation criteria, a database of medical books, user ratings and reviews, and search and comparison. The team MOISTURE SMART CREW under the leadership of Kunima Das worked under the theme WATER CONSERVATION FOR A BETTER TOMORROW and proposed automatic regulation of valves for the release of water required based upon soil moisture availability by using artificial intelligence, in a piped and micro irrigation network of irrigation system, to reduce water waste, improve crop yields, reduce labor cost, improves crop quality and increase farm profitability.

 The team BLAZE N' LIGHTS chose SMART AUTOMATION and proposed an AUTOMATED PUBLIC LIGHTNING SYSTEM under the team leader Saroj Kumar Patro, to increase energy efficiency, reduce cost, detect damaged lights, and put an environmental impact by reducing energy consumption. The team HIGHFLYER VEERS led by DHRITISH KUMAR BEHERA worked to develop a small- scale wind energy device and started with rotary kite turbines as they are more efficient, cost- effective, and unconventional wind turbines, with cheaper installation and construction rates. It will help in revolutionizing the method of tapping sustainable energy. The team WALL-E which was by SUCHARITA PRADHAN worked on the research and development of a smart glass cleaning robot that can climb up the walls in a very convenient manner, it can also carry liquid cleaners. It could be very helpful in developing cities that have huge glass infrastructures which makes it difficult and dangerous to clean by manpower.

ASME E-FEST

Explore the heartbeat of the digital terrain at Digital E-Fests. Immerse yourself in the latest hiring and tech trends, gaining invaluable insights from seasoned professionals. These digital gatherings transcend ancestral boundaries, offering a virtual platform to navigate your engineering aspirations. Stay ahead of industry developments practising experts share their wealth of knowledge, providing a compass for your career path. Digital E-Fest Careers is your compass, addressing career anxiety with precision. Whether youre charting a course in software development, electrical engineering, or any other field, seasoned mentors guide you toward a glorious destination. Beyond technical prowess, master the art of soft skills crucial for success. Engage with experienced hiring managers and trainers to polish your interview finesse. Digital E-Fests are not just events but catalysts propelling you toward professional excellence. ASME E-Fests are annual events organized by the American Society of Mechanical Engineers (ASME). They are global engineering festivals for college students. These festivals provide exciting competitions, Skill-building Workshops, and network opportunities for engineering Students. E-Fests aim to inspire innovation, foster collaboration and enhance technical skills among participants. The exciting competitions are design robots, race 3D- Printed Cars i.e, HPVC and Present research. The events include Keynote Speakers, technical sessions, and career development sessions. There are two formats i.e. participate in E-Fest Digital, a virtual event, or ASME EFX, smaller in-person events hosted by local ASME Sections. ASME E-Fest Contributes to the Professional development of aspiring engineers by offering a dynamic environment for learning and Connecting with industry professionals.

ELECTRIC HUMAN-POWERED VEHICLE

The E-Human Powered Vehicle Challenge, or E-HPVC, is a thrilling competition that pushes the limits of environmentally friendly transportation. Participants design and build human-powered vehicles integrated with electric technology, focusing on innovation and efficiency. This challenge encourages creativity in engineering, combining human effort with cutting-edge electronic systems to create environmentally friendly and energy-efficient vehicles. Teams compete in a friendly yet competitive atmosphere, showcasing advancements in green transportation. The e-Human Powered Vehicle Challenge not only challenges engineering prowess but also promotes sustainable solutions, fostering a community dedicated to shaping the future of eco-friendly mobility.

STUDENT DESIGN COMPETITION

The 2024 Student Design Competition (SDC) Presents the challenges to design and build a remote-controlled robot to conquer a 9-hole mind golf course. In this Project, the Robot must fit in the remote-controlled robot within a 50 cm Cube. Navigate a 9-hole Course in 10 minutes, conquering obstacles with up to 5 strokes each. The robot navigates between tees and positions itself for each shot. Also remember that rechargeable batteries, proper design, and bonus points for pre-comp videos showcasing that robots genius. The spirit of the game is sportsmanship and fair play reigns supreme. The goal is to build a robot that plays mini-golf autonomously and skillfully.

IAM3D DRONE

ASME is currently working on several projects and extending the field of research in several domains including electronics, structural, and programming. These are the mediums of acquiring practical knowledge and experiencing teamwork, management, and manufacturing processes. One such important and exciting project that ASME will work on is I AM 3D DRONE. This project is both interesting and challenging as well. Our motive is to make a drone that can be used in several sectors and can help in reducing human efforts. It will have several other features such as a wireless camera system, highly efficient propellers, and many more. The entire designing, circuiting, and drone programming will be done by students and the parts will be done by 3D printers. This programmable drone can be used in several activities such as small delivery of products, aerial image analysis, and video making. The main objective behind this project is to learn designing, circuiting, 3D printing, and extended programming and carry out vast research on these topics, as well as search for solutions to several problems that can be solved by this drone.

The concise list of participation in inter-institute events by students of the program of study is provided as follows:

Academic Year: 2023-24

Sl. No.	Name of Student	Event Name	Description	Organized By	Level
01	Mahanayak Chandragupta	World Robotics Championship	RC plane competition	All India Council For Robotics & Automation, Delhi	International
02	Aditi Kar	Spring Fest	Emotica Drama Society	Indian Institue of Technology, Kharagpur	National
03	Bijay Sahoo	Krida Sports Fest	Cricket	International Institute of Information Technology, Bhubaneswar	National
04	Priyanka Priyadarshini Chhotaray	Spring Fest	Emotica Drama Society	Indian Institue of Technology, Kharagpur	National
05	Mahanayak Chandragupta	Smart India Hackathon Grand Finale	Offline AI chatbot for Industrial Application	AICTE (Veer Surendra Sai University of Technology, Burla)	National
06	Sanjeeb Mohapatra	Integrated Youth Development Programm	Basketball	Veer Surendra Sai University of Technology, Burla	Institute

Academic Year: 2022-23

Sl. No.	Name of Student	Event Name	Description	Organized By	Level
01	Bijay Sahoo	Ethos Sport Fest	Cricket	Indian Institute of Management, Sambalpur	National
02	Mahanayak Chandragupta	Aeroprix	RC plane competiton	National Institue of Technology, Rourkela	National
03	Jagdish Behera	Vriddhi Sports Fest	Cricket	National Institue of Technology, Rourkela	National
04	TANISHA JAIN	SAE-India Aero Design Challenge 2023	Aero Design Challenge	SAE INDIA	National

05	TAPAS MANDAL T	SAE-India Aero Design Challenge 2023	Aero Design Challenge	SAE INDIA	National
06	Aditi Kar	Vriddhi Sports Fest	Badminton	National Institute of Technology, Rourkela	National
07	Abhijeet Rath	Satrtup Odisha Yatra 2.0	Top 22 ideas pitched	Startup Odisha under MSME department Odsha	State
08	Abhijeet	Abhyudaya 2.0	1st Prize	BITS, Ranchi	National
09	Shubham Gourav Mishra	ASME EFx	2nd Runners	PESU, Bangalore	National
10	Chinmaya Mishra	ASME EFx	2nd Runners	PESU, Bangalore	National
11	Pratikshya Pratisruti	ASME EFx	2nd Runners	PESU, Bangalore	National

Academic Year: 2021-22

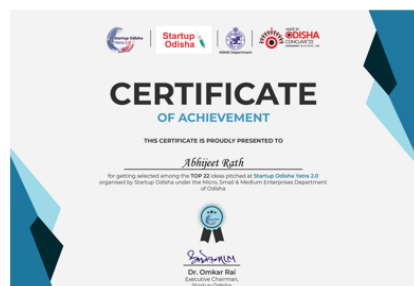| Sl. No.	Name of Student	Event Name	Description	Organized By	Level
01	AYUSH SINGH	AAKRUTI 2021	Nationwide Product Design Competition	Dassault Systemes	National
02	Chinmya Kumar Patra	makers mela 2022	Asias Largest platform for makers	riidl Somaiya Vidyavihar (Research Innovation Incubation Design Laboratory Foundation)	International
03	Abhijeet	IDEATHON 3.0	First Place secured	ENIGMA, NMIT Bangalore	National
04	Trilochan B	Deep Tech Ideathon 2021	Fault Detection Bot	Applied Singularity & Mouser Electronics	International
05	Ayushi A	Deep Tech Ideathon 2021	Fault Detection Bot	Applied Singularity & Mouser Electronics	International
06	Ritik A	Deep Tech Ideathon 2021	Fault Detection Bot	Applied Singularity & Mouser Electronics	International
07	Lopamudra N	Deep Tech Ideathon 2021	Fault Detection Bot	Applied Singularity & Mouser Electronics	International

1st Prize at Abhyudaya 2.0 BITS, Ranchi

2nd Runners ASME EFx, PESU, Bangalore

Winner Ideathon 3.0, NMIT Bangalore

5 FACULTY INFORMATION AND CONTRIBUTIONS (200)   Total Marks 173.54

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Sr. No	Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publications	Ph.D Guidance	Faculty receiving Ph.D during the assessment year	Current Designation	Date (Designated as Prof / Assoc. Prof.)	Initial Date of Joining	Association Type	At present working with the Institution (Yes / No)	Date of Leaving	IS HOD?
1	Prof. Debabrata Dhupal	AHFPD3566Q	ME/M. Tech and PhD	27/03/2009	Manufacturing Engineering	35	6	1	Professor	07/12/2012	07/12/2012	Regular	Yes		No
2	Dr. Kamal Pal	ALCPP8224C	ME/M. Tech and PhD	22/11/2010	Production Engineering	20	3		Associate Professor	05/10/2016	01/08/2013	Regular	Yes		No
3	Dr. Arun Kumar Rout	AINPR7201D	ME/M. Tech and PhD	05/12/2012	Mechanical Systems Design	13	3	1	Associate Professor	02/11/2016	02/11/2016	Regular	Yes		Yes
4	Dr. Nirmal Kumar Kund	AGMPK7959C	ME/M. Tech and PhD	05/09/2012	Mechanical Science	04	2	2	Associate Professor	02/11/2016	02/11/2016	Regular	Yes		No
5	Dr. Pankaj Charan Jena	AEPPJ8939L	ME/M. Tech and PhD	03/02/2016	Mechanical System Design	23	4		Associate Professor	04/09/2017	04/09/2017	Regular	Yes		No
6	Dr. Sudhansu Ranjan Das	AMLPD5628C	ME/M. Tech and PhD	21/10/2016	Manufacturing Processes and Systems	57	4	1	Associate Professor	15/09/2017	15/09/2017	Regular	Yes		No
7	Dr. Trupti Ranjan Mahapatra	AKWPM0274E	ME/M. Tech and PhD	03/10/2015	Manufacturing Processes and Systems	39	5		Associate Professor	09/10/2017	09/10/2017	Regular	Yes		No
8	Dr. Lipsamayee Mishra	BOIPM6177B	ME/M. Tech and PhD	27/12/2022	Manufacturing System Engineering	08			Assistant Professor		06/10/2016	Regular	Yes		No
9	Mr. Sambeet Kumar Sahu	DEZPS4066G	M.E/ M.Tech	10/08/2015	Production Engineering	01			Assistant Professor		10/10/2015	Regular	Yes		No
10	Dr. Smita Padhan	CIQPP8982C	ME/M. Tech and PhD	28/03/2023	Manufacturing Engineering	10			Assistant Professor		06/10/2016	Regular	Yes		No
11	Lt. Birendra Kumar Barik	AVFPB8352G	M.E/ M.Tech	30/06/2014	Manufacturing Technology	02			Assistant Professor		20/10/2016	Regular	Yes		No
12	Mrs. Sunita Sethy	HHRPS4856R	M.E/ M.Tech	03/11/2014	Production Engineering	07			Assistant Professor		06/10/2016	Regular	Yes		No
13	Mr. Premananda Ekka	ACGPE8332F	M.E/ M.Tech	02/07/2015	Computer Assisted Manufacturing	00			Assistant Professor		18/10/2016	Regular	Yes		No
14	Ms. Anisha Ekka	AAUPE4053H	M.E/ M.Tech	13/08/2013	Fluid and Thermal Engineering	01			Assistant Professor		06/10/2016	Regular	Yes		No
15	Prof. Debadutta Mishra	ACJPM7947H	ME/M. Tech and PhD	13/06/2003	Production Engineering	14	9		Professor	01/07/2009	21/03/1991	Regular	Yes		No

5.1 Student-Faculty Ratio (SFR) (20)   Total Marks 16.00

Institute Marks : 16

UG

No. of UG Programs in the Department 1

B Tech in Production Engineering					
Year of Study	**CAY**		**CAYm1**		**CAYm2**
	(2023-24)		**(2022-23)**		**(2021-22)**
	Sanction Intake	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**
2nd Year	60	5	60	4	60	6
3rd Year	60	4	60	6	60	6
4th Year	60	6	60	6	60	6
Sub-Total	**180**	**15**	**180**	**16**	**180**	**18**
Total	**195**		**196**		**198**	
Grand Total	195		196		198	

PG

No. of PG Programs in the Department 2

M Tech in Production Engineering (Manufacturing System Engineering)			
Year of Study	**CAY(2023-24)**	**CAYm1(2022-23)**	**CAYm2 (2021-22)**
	Sanction Intake	**Sanction Intake**	**Sanction Intake**
1st Year	18	18	18
2nd Year	18	18	18
Total	**36**	**36**	**36**

M Tech in Production Engineering (Robotics & CAD-CAM)			
Year of Study	**CAY(2023-24)**	**CAYm1(2022-23)**	**CAYm2 (2021-22)**
	Sanction Intake	**Sanction Intake**	**Sanction Intake**
1st Year	18	18	18
2nd Year	18	18	18
Total	**36**	**36**	**36**
Grand Total	72	72	72

SFR

No. of UG Programs in the Department 1

No. of PG Programs in the Department 2

Description	CAY(2023-24)		CAYm1 (2022-23)		CAYm2 (2021-22)	
Total No. of Students in the Department(S)	267	Sum total of all (UG+PG) students	268	Sum total of all (UG+PG) students	270	Sum total of all (UG+PG) students
No. of Faculty in the Department(F)	15	F1	15	F2	15	F3
Student Faculty Ratio(SFR)	17.80	SFR1=S1/F1	18.00	SFR2=S2/F2	17.87	SFR3=S3/F3
Average SFR	17.89	SFR=(SFR1+SFR2+SFR3)/3				
F=Total Number of Faculty Members in the Department (excluding first year faculty)						

Note: All the faculty whether regular or contractual (except Part-Time), will be considered. The contractual faculty (doing away with the terminology of visiting/adjunct faculty, whatsoever) who have taught for 2 consecutive semesters in the corresponding academic year on full time basis shall be considered for the purpose of calculation in the Faculty Student Ratio. However, following will be ensured in case of contractual faculty:
1. Shall have the AICTE prescribed qualifications and experience.

2. Shall be appointed on full time basis and worked for consecutive two semesters during the particular academic year under consideration.

3. Should have gone through an appropriate process of selection and the records of the same shall be made available to the visiting team during NBA visit

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY(2023-24)	15	0
CAYm1(2022-23)	15	0
CAYm2(2021-22)	15	0

Average SFR for three assessment years :   17.89

Assessment SFR :   16

5.2 Faculty Cadre Proportion (20)

Total Marks 20.00

Institute Marks : 20.00

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY(2023-24)	1.00	2.00	2.00	6.00	8.00	7.00
CAYm1(2022-23)	1.00	2.00	2.00	6.00	8.00	7.00
CAYm2(2021-22)	1.00	2.00	3.00	6.00	9.00	7.00
Average Numbers	1.00	2.00	2.33	6.00	8.33	7.00

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 10 :   20.00

5.3 Faculty Qualification (20)

Total Marks 17.54

Institute Marks : 17.54

	X	Y	F	FQ = 2 x [(10X + 4Y) / F)]
2023-24(CAY)	10	5	13.00	18.46
2022-23(CAYm1)	9	6	13.00	17.54
2021-22(CAYm2)	8	7	13.00	16.62

Average Assessment :   17.54

5.4 Faculty Retention (10)

Total Marks 10.00

Institute Marks : 10.00

Description	2022-23 (CAYm1)	2023-24 (CAY)
No of Faculty Retained	15	15
Total No of Faculty	13	13
% of Faculty Retained	115	115

Average :   115.00

Assessment Marks :   10.00

5.5 Faculty competencies in correlation to Program Specific Criteria (10)

Total Marks 10.00

Institute Marks : 10.00

<u>FACULTY COMPETENCIES CORRELATION TO PROGRAMME SPECIFIC CRITERIA</u>

Faculty members are specialized in diversified areas of Production Engineering — Machining, Welding & Fabrication, CAD/CAM, Robotics, Industrial Engineering & Management, Design & Manufacturing, etc. Faculty members have good research exposure and have published research papers in journals of repute (Springer, Elsevier, Taylor and Francis, SAGE, etc.) and presented several papers in national and international level conferences in India as well as abroad. Faculty has received awards for excellent contribution towards research and teaching. The faculty members are participating in FDPs & STTPs to upgrade their knowledge in latest field of research. Faculty is also actively involved in developing web site of the department, individual google pages, student feedback, autonomous activities and technical events. One senior professor of the department has visited many premier institutes in India for assessment of NAAC & NBA accreditation.

The detailed competencies of the faculty members of Department of Production Engineering those have Mapping of capabilities to all the three PSOs is available at https://www.vssut.ac.in/faculty.php?url=production-engineering (https://www.vssut.ac.in/faculty.php?url=production-engineering).

5.6 Innovations by the Faculty in Teaching and Learning (10)

Total Marks 10.00

Institute Marks : 10.00

INNOVATIONS BY THE FACULTY IN TEACHING AND LEARNING

Innovation is literally done by each dedicated faculty, knowingly or unknowingly; literally every single working day of his/her career. Some initiatives may be so small to escape attention, and might be difficult to quantify and record; but may affect the learning of students in a subtle but important way. On the other hand, some initiatives might be so impactful so as to be clearly visible as making huge strides in improving the teaching-learning process. Given below is a listing of some of the noticeable initiatives taken by the faculty of the department. However, it should not be construed as a conclusive list; but as a part of an open-ended process of continuous improvement.

STATEMENT OF GOALS FOR INNOVATIONS IN TEACHING AND LEARNING

Realizing the necessity of innovative ideas in the teaching-learning process, and their subsequent implementation through quantifiable initiatives, the following goals have been set:

Apart from the standard teaching-learning experience imparted in classrooms, the department will continuously strive to:

- Enrich the learning experience of students through innovative tools and techniques
- Enhance the understanding and knowledge of students with innovative tools and techniques
- Broaden the perspective of students in matters pertaining to academic, contemporary as well as social issues using innovative tools and techniques
- Motivate the students to think, formulate and act innovatively themselves.

LIST OF INNOVATIVE INITIATIVES IN TEACHING AND LEARNING PROCESS TAKEN BY THE DEPARTMENT

Following innovative learning methods are initiated and implemented by the faculty for students to learn in a better manner.

1. Computer-assisted learning

2. Lab Improvement for Future Trends (LIFT)

3. Learn Emerging Advances in Domain Experimentation

4. Group Learning

5. Innovations in Assessment

6. Innovations in Evaluation

Computer-assisted learning

ICT usages are abundantly practiced for the teaching-learning processes.

Objectives:

- To provide direct access to quality instructional resources through computers connected in LAN and Internet Motivate the students do electronic presentations (PPT)
- Assess the students through online quiz tests for better learning.

Facilities Created:

- LCDs, interactive boards are consistently used in the class-room lecture delivery.
- During classroom sessions, subject in charge delivers NPTEL video lectures and presentations wherever necessary, along with regular whiteboard teaching.
- Internet facility is provided to students for deeper inquiry into their subjects.
- The technologies are used even in the co-curricular activities during seminars, workshops every classroom is provided with computer with LAN and internet connection.

Outcomes:

The students and faculty are engaged in effective teaching and learning process.

Laboratory Improvement Future Trends (LIFT)

The laboratory learning is made very effective through the implementation of an innovative program namely Laboratory Improvement for Future Trends (LIFT). Under this program the faculty member handling the laboratory sessions shall prepare a manual with different activities.

Objectives:

- Conduction of advanced experiments.
- Collect research literature related to the lab Participate in the maintenance of the lab.
- Execute hobby projects. Modify the existing facilities in labs
- To create awareness among the students and develop Industry –Institution interactions
- and reach the standards in laboratories.

Facilities Created:

- Modification of existing experimental set-up
- Creation of additional facilities for advanced experiments

Outcomes:

- Experience in collecting literature
- Preparation of maintenance manual
- Prepare working model/execute hobby project

Learn Emerging Advances in the Domain (LEAD):

Objectives:

- The Objective of LEAD Concept is introduction of new experiments beyond course curriculum in day-to-day regular lab sessions.

Methodology:

- These Experiments are designed based upon the theory syllabus and student skills. At least one Experiment is introduced in each lab to train all the students in latest trends for laboratory improvement program which will be useful for the students to get awareness about the skills in conducting experiments.

Outcomes:

- Technical knowledge in labs is improved. Design hobby projects.

Group Learning OR Collaborative Learning

A collection of students who are intellectually, and aesthetically engaged in solving problems, creating products, and an assemblage in which each student learns autonomously and through the ways of learning of others. By group, we refer both to the learning of individuals that is fostered by being in a group and to a more distributed kind of learning that does not reside inside the head of any one individual. Rather than focusing only on what the individual knows, the goal is to build a collective body of knowledge; learning groups strive to create publicly shared.

Innovations in Assessment

Objectives:

- Simplify the assessment of course outcomes and program outcomes
- Take corrective actions during the middle of the semester for better attainment levels of course outcomes and program outcomes

Methodology:

- Special Assessment software is designed and implemented to collect the attainment levels of course outcomes and program outcomes on frequent basis.
- An assessment web link is provided to the students and faculty for giving feedback on the ongoing lecture sessions.
- The student gives feedback on day-to-day basis about the ongoing subject-wise lecture sessions. This feedback will enable the faculty to know the effectiveness of his teaching on day-to-day lecture basis and helps to improve his performance. Alumni survey, Employer survey etc. are conducted through online.

Outcomes:

- Effective teaching and learning process
- Better attainment levels of course outcomes and program outcomes

Innovations in Evaluation

Generally, evaluation of students is done by the faculty. However, an innovative assignment evaluation method is proposed and implemented with the following objectives:

Objectives:

- To enhance the understanding levels of the subject
- To improve the presentation skills

Methodology:

Self-Evaluation by the students is carried out under the faculty supervision. The students are divided into groups. Different home assignments are given to different student groups. One of the group members shall evaluate the remaining members' assignments and including himself. The evaluation within the group is carried out on rotation basis. The evaluated assignments are submitted to the faculty for scrutiny and feedback. The above method of evaluation helps the students in improving their learning and presentation skills. Apart from regular term test and traditional approach department use number of technological based approach for assessment of students and quality teaching. Department has special team to plane, implement and review various qualities teaching strategy. The teacher asks students to use technology to complete assignments that ask for problem solving and creativity on a regular basis. Course file which keep records of all attendance, lab practical, Assignment and test marks and term work are calculated based on this. Table 2 shows different innovation in assessment and evaluation.

Table 2 Innovations in Assessment and Evaluation

Sr. No.	Details of the innovation	Description
1.	Prerequisite Test	To analyze students in the beginning of semesters and plans the remedial lectures accordingly.
2.	Quizzing	Regular class/surprise and terms tests are conducted.
3.	CO-PO attainment	The faculty concerned prepares course objectives and programme objective mapping table and assigns weight age to each of the CO against the Programme Outcomes (POs) and calculates CO-PO attainment.
4.	Digital Course File (DCF) as a tool for assessment and evaluation	Digital course file are made for every subject to keep track of student assessment and CO-PO attainment
5.	Personal Counselling and conduction of Remedial classes.	Personal counselling as well as remedial lectures is arranged for the weaker students.
6.	Feedback	Institute have detailed feedback mechanism where online feedbacks are collected at various level, analyzed and necessary corrective actions are taken

Additional effort for weak students: Students unable to score well in the term exams are identified and are given more attention by faculty. In many cases, they are tasked with additional assignments to enhance their understanding of respective subjects.

Unit tests: Apart from the one mid-term test (prescribed as a standard); students are required to face three additional unit tests (covering the complete syllabus) for each subject. These unit tests are developed in the format of common competitive tests (objective tests) to prepare the students for such future exams.

Instructional delivery

- In order to make teaching and learning process more effective, the subject teacher is taking care of prescribed time available for the corresponding semester in accordance with academic calendar.
- The theory lectures and practicals are planned by the faculty as per the weightage of the topics allotted in curriculum design.
- The subject teacher makes the connection between theory classes and practicals in way that the student can understand the application of theoretical concept in real world situation.
- ICT facilities described above are effectively used for delivering content.

All the faculties are highly qualified with mixed of rich experience in academics & industry. The Faculties are also promoted to undergo the professional trainings in order to make the teaching and learning process more classical with latest trends in the corresponding subject area. The details of innovations by the faculty members in Instructional delivery are shown in Table 1.

Table 1 Innovations by the Faculty in Instruction delivery

Instructional Method	Description
Interactive Lectures	Lectures are delivered in a way to make it more interactive to the large number of students. The prerequisite knowledge of the topic, critical information, history, Background, theories and evolutions has provided to students to make interactive lectures at both ends. The course objectives are well attained while delivering the lectures by defining the proper lesson plan for the subject.

Presentations	Presentations are delivered using modern tools like ICT and Smart boards, and covered with models, simulations and animation to enhance the concepts more effectively to the students. Presentations are always followed by the discussions based on the topic taught thus improving communication skills of students.
Demonstration	Practical demonstration of applicability of theoretical concept in real world is given through program execution, charts, monograms and videos. Students are engaged completely for assigned lab hours. Demonstrations strengthen the lifelong learning capability of students.
Webinar	Webinars are engaged for students to cover the contents beyond the syllabus.
Group Discussions	Group discussions are useful for students in order to analyze the understanding about the concept regarding subject. Also group discussions are learning and sharing information which covers large information about the topic. Differences in opinions are explicitly marked during discussions. Students are trained to tolerate the opinions of others.
Mini Projects/ Competitions	Students are involved in mini projects bringing out innovative ideas and implementation. Team work development is made through this kind of instructional method. Students are also exposed to participate in competitions at different levels.
Case studies	Case Studies are discussed with students for better understanding of the subjects.
Tutorials	Tutorials and assignments are given to students for practice. Varieties of questions ranging from genius or highest difficult level to normal level are given to the students for acquaintance with variety of questions.
Quiz	Quizzes are conducted as and when required into the classroom
Learning Management System (LMS)	LMS is used by faculties and students as part of Interactive teaching learning process. Learning Management System (LMS) consists of all the lectures wise presentations, videos, discussion form, quiz, assignments, university question papers etc., which are uploaded by the concern faculty and can be easily access by the students (24x7).
Use of Question Banks	Question Banks consisting of variety of questions ranging from genius or highest difficult level to normal level are given to the students for acquaintance with variety of questions

Methodologies to support weak students and encourage bright students

Based on the previous semester performance of the students and their performance in the pre-requisite tests, the class counselor and the mentors identify the weak and the bright students. Students obtaining percentile over 75 are considered as bright students and below 35 percentile are considered as weak students. The weakly performing students are given specific guidelines on how to approach the difficult subject, a rigorous doubt solving session is engaged.

The students with advanced skills are identified based on their performance in pre-requisite tests, assignments, term test results, and projects and practical work undertaken. Such students are encouraged to appear for competitive exams such as GATE, CAT, IES, Indian Navy entrance exam etc. Advanced learners are groomed to present papers in technical paper presentations, seminars, and workshops. They are also motivated to take participation in off-campus technical events organized by eminent institutes.

Conduct of experiments

All laboratories are well equipped with experimental setups and new kits are added to the laboratory whenever the university syllabus and list of experiments are updated. Each batch is divided into groups of 3-4 students. 4-5 experimental setups prepared at a time. Instructor explains theoretical and practical aspects to all the groups and they are kept in rotation. Students get printed lab manuals prior so that they can study thoroughly before performing the experiment. Each experiment is explained in detail, so that students can get good understanding. An appropriate weightage is given to each analysis and their mapping as for the COs is done and it is guaranteed that all COs are achieved. Printed lab manuals are given to students well in advance so that they can understand it. Continuous assessment in the laboratory for each experiment is performed, i.e. the write-up of an experiment performed during previous week is assessed for its correctness during the next week. While checking the write-up, a mock oral of the student is conducted and appropriate grade is assigned.

Group leaders in lab sessions: This initiative has proved to be highly effective in lab sessions. A group leader is selected for each group working on an experiment in each lab session. The group leader is made responsible for all the outcomes of the lab session of that particular day. Every week in the lab, the group leader is changed so as to pass the responsibility to each student by the end of semester. This inculcates leadership and responsibility in students.

Club activities: There are 4 clubs that are currently being run by the Department of Production Engineering:

1. Idea Club: http://www.iic-vssut.org (http://www.iic-vssut.org/)
2. Robotics Club: http://vssutrobotics.in (http://vssutrobotics.in/)
3. Entrepreneurship Club: http://ecellvssut.in (http://ecellvssut.in/)
4. IEI student chapter

Various club activities in these clubs act as excellent grounds for innovative learning. In these clubs, the faculty are not the only disseminators of knowledge; senior students (older club members) pass on their knowledge and learning to the younger generation (new club entrants) via a continuous ritual-like process, which includes hands-on training, presentations, lectures, group discussions and many other innovative procedures. These clubs with their club activities literally act as the most fertile grounds for innovations in the teaching-learning process.

MOOCS: MOOCS or Massive open online courses are a relatively new entry in the academic sector throughout the world. Although the role of MOOCs in effective dissemination of knowledge is still under debate, they are speedily gaining unquestioned acceptance in more and more academic circles as an innovative means of imparting additional knowledge to students. Here at VSSUT, we support augmenting our own efforts of effective delivery by MOOCs available through agencies like NPTEL and SWAYAM.

Miniature scale models: In many relevant subjects, faculty encourage the students to make miniature working models of mechanisms and machine components. Thus, enhancing interest and level of learning.

Power point presentations: Use of this widely accepted technique is done wherever deemed necessary in the department. This has actually become a standard norm in the teaching-learning process, and is facilitated by the fact that all our classrooms are well-equipped with high quality projectors as well as digital board ready for use any time.

E-mail correspondence with students: Faculty frequently engages in e-mail correspondence with the students to share notes, remarks, assignments and test results. This significantly boosts the out-of-class learning experience of students.

Student presentations: In many relevant subjects, students deliver presentations to the rest of their classmates. This significantly boosts students' confidence and their learning experience.

Audio-visual learning: In many subjects (wherever necessary) audio-visual aids are used. It is a proved fact that audio-visual presentations in the classrooms are more effective in capturing the attention of students.

Classroom quiz sessions: These help in creating interest by breaking monotony of regular classes while enhancing the learning experience.

Personal counselling: This has helped many students in dealing with academic as well as personal problems in the department. Every faculty in the department acts as a counsellor to any student with any problem he/she is willing to share.

Library assignments: Students are set such assignments from time to time; wherein they are required to research certain topics from the resources available in the institute library and finally submit a report.

5.7 Faculty as participants in Faculty development/training activities/STTPs (15)   Total Marks 15.00

Institute Marks : 15.00

Name of the faculty	Max 5 Per Faculty		
	2022-23(CAYm1)	2021-22(CAYm2)	2020-21(CAYm3)
Dr. Kamal Pal	3.00	3.00	3.00
Dr. Arun Kumar Rout	5.00	3.00	5.00
Dr. Nirmal Kumar Kund	3.00	3.00	3.00
Dr. Pankaj Charan Jena	5.00	5.00	5.00
Dr. Sudhansu Ranjan Das	5.00	5.00	5.00
Dr. Trupti Ranjan Mahapatra	5.00	5.00	5.00
Dr. Lipsamayee Mishra	5.00	5.00	3.00
Mr. Sambeet Kumar Sahu	5.00	5.00	3.00
Prof. Debabrata Dhupal	5.00	5.00	5.00
Dr. Smita Padhan	5.00	5.00	3.00
Lt. Birendra Kumar Barik	0.00	5.00	5.00
Mrs. Sunita Sethy	5.00	5.00	5.00
Mr. Premananda Ekka	0.00	3.00	5.00
Ms. Anisha Ekka	5.00	5.00	3.00
Prof. Debadutta Mishra	5.00	5.00	5.00
Sum	61.00	67.00	63.00
RF = Number of Faculty required to comply with 20:1 Student Faculty Ratioas per 5.1	13.00	13.00	13.00
Assessment [3*(Sum / 0.5RF)]	28.15	30.92	29.08

Average assessment over 3 years: 15.00

5.8 Research and Development (75)   Total Marks 55.00

5.8.1 Academic Research (20)

Institute Marks : 20.00

Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc

Academic Year	Publication details			
	SCI/SCIE/SCOPUS Journals	Book/Book Chapters	Conference Proceedings	Total
2023-24	23	05	01	29 (Contd.)
2022-23	38	10	04	52
2021-22	46	06	05	57
2020-21	25	14	02	41
2019-20	28	13	10	51

Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute

Sl. No.	Name of the faculty	Designation	Academic Year 2023-24		Academic Year 2022-23		Academic Year 2021-22	
			No. of Ph.D. Scholar Guided	No. of Ph.D. Scholar Awarded	No. of Ph.D. Scholar Guided	No. of Ph.D. Scholar Awarded	No. of Ph.D. Scholar Guided	No. of Ph.D. Scholar Awarded
01	Dr. Kamal Pal	Asso. Prof.	2	-	2	1	3	
02	Dr. Arun Kumar Rout	Asso. Prof.	3	1	3		3	
03	Dr. Nirmal Kumar Kund	Asso. Prof.	2	2	2		2	
04	Dr. Pankaj Charan Jena	Asso. Prof.	3	1	3		3	
05	Dr. Sudhansu Ranjan Das	Asso. Prof.	2	1	2	1	3	
06	Dr. Trupti Ranjan Mahapatra	Asso. Prof.	5		5		3	
07	Dr. Lipsamayee Mishra	Asst. Prof.	-	-	-	-	-	-
08	Prof. Debabrata Dhupal	Professor	2		4	1	5	3
09	Dr. Smita Padhan	Asst. Prof.	-	-	-	-	-	-
10	Prof. Debadutta Mishra	Professor	4	-	5	2	6	-

5.8.2 Sponsored Research (20)

Institute Marks : 20.00

2022-23 (CAYm1)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Damage analysis of laminated	1	OURIIP-2022	678000.00
			Total Amount(X): 678000.00

2021-22 (CAYm2)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Development of fluidized bed-	3	AICTE Research Promotion S	2500000.00
			Total Amount(Y): 2500000.00

2020-21 (CAYm3)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Development, Characterization	1	Collaborative Research and In	43000.00
Improvement of electro discha	1	Collaborative Research and In	43236.00
Investigation on weld ability of	1	Collaborative Research and In	50000.00
Numerical and experimental in	2	Science & Engineering Resea	3267000.00
Development of fluidized bed-	3	AICTE Research Promotion S	2500000.00
			Total Amount(Z): 5903236.00

Cumulative Amount(X + Y + Z) =   9081236.00

5.8.3 Development activities (15)

Institute Marks : 15.00

DEVELOPMENT ACTIVITIES

A. Product Development

1	Minimum Quantity lubrication setup	2021
2	Centrifugal casting machine for production of FGM pipe	2019
3	Hot-abrasive machining setup	2022
4	Development of portable FSW	2020
5	Portable refrigerator using peltier	2020
6	Sahara Glasses (Smart glasses for blind person)	2020
7	Damage analysis of LCP testing rig	2023
8	Fabrication of composite beam/plate using power screw technique	2022

- Fourteen numbers of Indian patent have been published.

    Title of the invention

- Apparatus and method for assessing structural damage in laminated composite plates

- AI-IOT based cylinder trolley system and thereof

- Employing multi-energy sources to heating the water in a thermos bottle comprising with power storage system

- Fluidized hot chamber for abrasive jet machining

- A smart automatic tap and indicator

- Autonomous solar power plant with dual axis solar tracker method

- An aluminum hybrid metal matrix composite and method of preparation thereof

- A novel spring design method for vehicular suspension system

- Instant electric heating water faucet system and structure

- IoT based road cutter

- An autonomous floor cleaning robot

- A novel aluminum metal matrix composite produced by powder metallurgy method

- Flexible electrode holder for machining of micro drill using EDM machine

- A new manufacturing process for four dimensional (4D) printed parts

B. Research Laboratories

Non-Traditional Machining Lab

Advance Manufacturing Lab

1. Laser spot welding

2. Friction stir welding

3. Electro chemical machining

4. Electrical discharge machining

5. Laser beam machining

6. Abrasive jet machining

Metal cutting lab

1. Lathe machine

2. Milling machine

3. Drilling machine

4. Universal tool cutter grinder

5. Tool dynamometer

CAD & SIMULATION Lab

1. ANSYS 20 (5 users)

2. Computers (20 nos.)

3. CAM software (30 users)

4. Geomagic Design X

E-Classrooms: State-of-the-art e-classroom has been setup in the department. The e-Classroom has the following facilities: Overhead projection, smart interactive boards, recording and archiving of lectures in digital format and full interactive video conferencing for lecture transmission and interactions.

C. **Instructional materials**

- Lab Manual of Non-Traditional Machining Lab is provided.

- Instructional material in the form of E-study material and course notes are developed in the following courses

1. Precision Engineering (PE)

2. Rapid Protototyping

- Instruction material in the form E-lecture notes are provide for all the subjects of UG programme in Production Engineering.

- Video lectures of all the subjects of UG programme in Production Engineering are developed and subsequently lectures are delivered to students.

D. **Working models/charts/monograms etc.**

- Several working models are being used/displayed for laboratory experiments

- Instructional charts for performing experiments are being displayed in the department and laboratories.

- Charts on general and electrical safety are being displayed in all laboratories.

- Charts on general awareness to protective measures against COVID-19 are being displayed in the department.

- Chart of electric shock treatment procedures

5.8.4 Consultancy (from Industry) (20)   Institute Marks :

2022-23 (CAYm1)

Project Title	Duration	Funding Agency	Amount(in Rupees)

2021-22 (CAYm2)

Project Title	Duration	Funding Agency	Amount(in Rupees)

2020-21 (CAYm3)

Project Title	Duration	Funding Agency	Amount(in Rupees)

Cumulative Amount(X + Y + Z) =

5.9 Faculty Performance Appraisal and Development System (FPADS) (10)   Total Marks 10.00

Institute Marks : 10.00

FACULTY PERFORMANCE APPRAISAL AND DEVELOPMENT SYSTEM (FPADS)

Faculty Performance Appraisal and Development System is developed to improve the performance of the faculty members in Teaching, Learning and Evaluation Related Activities, Profession Related Contribution & Research and Related Contributions.

Faculty Performance Appraisal System

The performance appraisal of the faculty is evaluated based on the academic performance indicators (APIs) at the end of every academic year. The performance is evaluated by every faculty for 100 points as given below.

Assessment of the performance

1. Teaching, learning and evaluation related activities

Teaching: (Classes taught includes session tutorials, lab and other teaching related activities): (regular and punctuality to class, remedial teaching, clarifying doubts, counselling and mentoring, additional teaching etc.)

2. Involvement in the University students related activities/research activities etc.

a. Administrative responsibilities such as: Head/Chaiarperson/Dean/Director/COE/COF(I/C)/Registrar(I/C)/Co-ordinator/Warden.
b. Examination and evaluation duties assigned by the University or attending the examination paper evaluation.
c. Student related co-curricular, extension and field based activities such as student clubs, career counselling, study visits, student seminars and other events, cultural, sports, NCC, NSS and community services.
d. Organizing Seminars/conferences/ Workshops, other as University activities.
e. Evidence of actively involved in guiding Ph.D. students.
f. Conducting minor or major research project sponsored by National or International agencies.
g. At least one single or joint publication in SCI/SCOPUS Indexed Journals (without any article processing fee).

3. Methodology for University Teachers for calculating Academic/Research Score (API)

(Assessment must be based on evidence produced by the teacher such as: copy of publications, project sanction letter, utilization and completion certificates issued by the University/ Institute and acknowledgements for patent filing and approval letters, students' Ph.D. award letter, etc.)

a. Research Papers in Peer-Reviewed Journals (SCI/SCOPUS)
b. Publications (other than Research papers)
c. Creation of ICT mediated Teaching Learning pedagogy and content and development of new and innovative courses and curricula
d. Research guidance
e. Patents and Awards, Policy Document (Submitted to an International body/organization like UNO/UNESCO/World Bank/International Monetary Fund etc. or Central Government or State Government)
f. Invited lectures / Resource Person/ paper presentation in Seminars/ Conferences/full paper in Conference Proceedings (Paper presented in Seminars/Conferences and also published as full paper in Conference Proceedings will be counted only once).

FPADS implementation

Department of Production Engineering has well-defined system for faculty appraisal for every academic year.

- The Department follows the UGC approved self-appraisal method to evaluate teachers regarding research and other activities.
- A well-defined Proforma of self- appraisal report for the faculty is available on the institute web site. It consists of academic, research, curricular and extra-curricular contributions for the academic year. The faculty submits self- appraisal reports for the academic year which is evaluated by the head of the department.
- The contents of the self-appraisal are mentioned below:

i. Steps taken to advance technical knowledge
ii. Research contribution & other publications
iii. Capacity to guide research UG/PG/Ph.D.
iv. Development work in the Lab/Workshop
v. Contributions to the Department/University.
vi. Any other additional information related to their academic excellence.

- Reviewed by the Head and Vice-Chancellor.
- Teachers are individually apprised of their strengths and weaknesses by their respective Heads and encouraged to achieve higher goals.
- The appraisals also help to assess the merit of the faculty members in applying for personal promotions.
- The IQAC regularly monitors and collects the annual self-appraisals in the prescribed format from each Faculty member, duly forwarded by the Head of the Departments and respective Deans.

FPADS effectiveness

Every staff member should get the minimum points of API score. If the faculty member getting maximum API score will be rewarded with a Certificate of Appreciation. In case if any staff member getting a lower API score depending on strengths & weaknesses, for his/her development the following suggestions are made and reviewed after every year.

- To adopt better teaching methodologies to improve the academic performance of the students.
- To attend faculty development programs to update their knowledge.
- To attend conferences & research-oriented programs to his/her improve research activities.
- To become a member of professional bodies.
- To get NPTEL certification in the relevant course.

Annual PAR 2022-23

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY

ANNUAL PERFORMANCE EVALUATION OF FACULTY MEMBER

Academic Year			
Name			
Present Position			
Name of School			
Name of Department			
Evaluation Criteria	Maximum Marks	Self Assesment Score	Verified Score by Committee Members
Teaching - Process	25		
Students' Feedback	15		
Departmental Activities	20		
Institute Activity	10		
Academic Research Score	30		
Total Score	**100**		

Signature of Faculty

Signature of Committee Members

Teaching Process (Max Points 25)

a) Class taken - (Max 15 Points)

Sl. No.	Semester	Course Name	No. of Scheduled Classes	No. of actually held classes	Point	Enclosure no.	Point by HOD	Verified by Dean of School
1								
2								

b) Scheme of Evaluation – (Max 05 Points)

Sl. No.	Semester	Course Name	Point	Enclosure no.	Point by HOD	Verified by Dean of School
1						
2						

c) Course outcome – (Max 05 Points)

Sl. No.	Semester	Course Name	Course outcome prepared	Enclosure no.	Point by HOD	Verified by Dean of School
1						
2						

Students' feedback (Max Points 15)

Sl. No.	Semester	Course Name	Average Student feedback on the scale of 25	Enclosure no.	Point by HOD	Verified by Dean of School
1						
2						

Departmental Activities (Max Points 20)

Sl. No.	Semester	Activity	Credit Point	Enclosure no.	Point by HOD	Verified by Dean of School
1						
2						

Institute Activities (Max Points 10)

Sl No.	Semester	Activity	Credit Point	Enclosure no.	Point by Officer issued order
1					
2					

Academic/Research Score (Max Points 30)

Sl No	Academic/Research Activity		Self-Appraisal Score	Verified Score
1	Research Papers in Peer-Reviewed or UGC listed Journals	08 per paper		
2	Publications (other than Research papers)			
	(a) Books authored which are published by :			
	International publishers	12		
	National Publishers	10		
	Chapter in Edited Book	05		
	Editor of Book by International Publisher	10		
	Editor of Book by National Publisher	08		
	(b) Translation works in Indian and Foreign Languages by qualified faculties			
	Chapter or Research paper	03		
	Book	08		
3	(a) Research guidance			
	Ph.D.	10 per degree awarded 05 per thesis submitted		
	M.Phil./P.G dissertation	02 per degree awarded		
	(b) Research Projects Completed			
	More than 10 lakhs	10		
	Less than 10 lakhs	05		
	(c) Research Projects Ongoing :			
	More than 10 lakhs	05		
	Less than 10 lakhs	02		
	(d) Consultancy	03		
4	(a) Patents			
	International (awarded)	10		
	International (filed)	05		
	National (awarded)	07		
	National (filed)	04		
5	*Invited lectures / Resource Person/ paper presentation in Seminars/ Conferences/full paper in Conference Proceedings (Paper presented in Seminars/Conferences and also published as full paper in Conference Proceedings will be counted only once)			
	International (Abroad)	07		
	International (within country)	05		
	National Level	03		
	State Level	02		

A. The Research score for research papers would be augmented as follows:

Peer-Reviewed or UGC-listed Journals (Impact factor to be determined as per Thomson Reuters list):

i) Paper in refereed journals without impact factor - 5 Points

ii) Paper with impact factor less than 1 - 10 Points

iii) Paper with impact factor between 1 and 2 - 15 Points

iv) Paper with impact factor between 2 and 5 - 20 Points

v) Paper with impact factor between 5 and 10 - 25 Points

vi) Paper with impact factor >10 - 30 Points

(a) Two authors: 70% of total value of publication for each author.

(b) More than two authors: 70% of total value of publication for the First/Principal/Corresponding author and 30% of total value of publication for each of the joint authors.

B. Joint Projects: Principal Investigator and Co-investigator would get 50% each.

C. Paper presented if part of edited book or proceeding then it can be claimed only once.

D. For joint supervision of research students, the formula shall be 70% of the total score for Supervisor and Co-supervisor. Supervisor and Co-supervisor, both shall get 7 marks each.

E. For the purpose of calculating research score of the teacher, the combined research score from the categories of 5(b). Policy Document and 6. Invited lectures/Resource Person/Paper presentation shall have an upper capping of thirty percent of the total research score of the teacher concerned.

F. The research score shall be from the minimum of three categories out of six categories.

POINTS TO BE CONSIDERED FOR CAS IN DEPARTMENT ACTIVITIES

Maximum 20 Marks per year

Sl. No	Activity	Credit Point	Criteria
1	PIC/Consultancy/Coordinator/Lab In charge/Advisor/ FIC/Member of Committee/Student Mentoring/Chairman of committee	3	3 points/Semester
2	NAAC/NBA work/UGC	3	3 points/Event
3	Member of any committee	2	2 points/Semester

*Letter issued by HOD/Dean of School

POINTS TO BE CONSIDERED FOR CAS IN UNIVERSITY ACTIVITIES

Maximum 10 marks year

Sl. No	Activity	Credit Point	Criteria
1	HOD/Dean/COE/First Appellate/Director IQAC	4	4 points/Semester
2	TEQIP/ Associate Dean/PIC/Coordinator /Warden/Assistant Warden/ME/RTI Officer/Vice President of Student Society/Chairman of Committee	3	3 points/Semester
3	Organised Conference/FDP/Workshop as Chairman/Convener	3	3 points/Event
4	FDP/Conference/Workshop Coordinator/ Co-Convener	2	1 point to be divided between all coordinators
5	Member of any Committee//Advisor of Student Society	2	2 points/Semester

*Letter issued by Vice Chancellor/Registrar/University Dean/COF

PERFORMANCE APPRAISAL REPORT FOR TEACHERS OF VSS UNIVERSITY OF TECHNOLOGY, BURLA   FOR THE ACADEMIC YEAR 2021-22
(1STJULY-2021 TO 30THJUNE-2022)

GENERAL INFORMATION:
(a)   Name   :
(b)   Address (Residential)   :
(c)   Designation   :
(d)   Department   :
(e)   Date of appointment   :
       (i)   In the Institution   :
       (ii)   In the present post   :
(f)   Pay Scale   :
(g)   Present Pay   :
(h)   Month of Increment   :

PART – I
SELF ASSESSMENT OF THE TEACHER

A.   TEACHING

(a)   Course taught   L.   LECTUER
                                     T.   TUTORIAL
                                     P.   PRACTICAL

Class		Course Title	Periods allotted per week			Periods actually Taught in the year		
			L	T	P	L	T	P
(i)B.Tech	Odd Sem.(July' 2021-Dec'2021							
	Even Sem.(Jan' 2022- June, 2022							
ii)M.Tech/M.S Tech/Dual Degree/								
iii)MCA								
iii)Any Other (Ph.D.								

(b)   Did you supply the Lecture Teaching plans of the course to the students?
         If yes, give a specimen copy.

(c)   Internal education of student carried out: (Nos.)

         (i) Tests   :

         (ii) Quiz   :

         (iii) Home assignments :

         (iv) Any other   :

(d)   Results of the courses taught (last published results)

Results of U.G. Semester Exams.   : No. of students………Nos. Passed………

Results of P.G. Semester Exams.   : No. of students………Nos. Passed………

Results of Other Exams.   : No. of students………Nos. Passed………

(B)   INNOVATION IN TEACHING

(a)   Contributions, if any to development of curriculum. Give description.:

(b)   Innovation in teaching methods, Give a brief description

(c)   Innovation in laboratory experiments, If any, give a brief description.:

(d)   Preparation of Teaching materials, if any,.:
       (Give a brief description)
(e)   How many NPTL Course has been used?
       (Which one…………………………………………)
(f)   How many MOOCs Course trained or got passed./trained?
(g)   Have you completed CO to IQAC?(If yes, submit evidence) :
(h)   How many calculated COs for last two semesters?
       (If yes, submit evidence)   :

(C) IMPROVEMENT OF QUALIFICATIONS (M.Tech./M.Phil/Ph.D) :

Name of Course	Diploma/Degree	Name of the University	Subjects with Specialisation	Duration of Year	Marks/Grade obtained

(D)   REFRESHER COURSES, SUMMER WINTER SCHOOLS ATTENDED:

Sl.No.	Name of Course	University/Institution	Duration		Certificates/ Marks obtained
			From	To	

(E)   RESEARCH WORK DONE.:-
       (a) No. of M.Tech./M.Sc./M.Phil/Ph.D students guided in the year :
           (Give names of the students)
       (b)No. of students awarded Ph.D. Degree.:
           (Give names of the students and title of thesis)

Regd. No.	Name of the Student	Title of thesis	Level M.Tech./M.Sc./M.Phil/ Ph.D	Year of Completion

(c) No. of Research paper published.:

Sl.No.	Title of the Paper	Name of the Journal	Date & year of Publication	Remarks (Co-authors)	Whether SCI/SCOPUS

(d)Project in progress/completed.:

Title of the Project	Name of the funding agency	Date of Sanction & Duration	Amount Sanction	Complete/Not complete (Date of completion)

(e) Seminar, Conferences, Symposia attended.:

Name of the Seminar/ Conference/Symposia	Name of the sponsoring agency and date	Country	Name of the paper contributed	Remarks

(f) Seminar/conferences/Summer School/Winter School organised.:

Name of the Course	Duration	Sponsored by	No. of particulars attend

(g) Patents taken, if any, give a brief description:

Tile of the patent	Patent No. / Year	Inventors	Indian/Foreign

(h) Membership of professional bodies.:

F. EXTENSION WORK.:-
(a)   Please give a short account of your contribution to
       (i) Service of the community in the solution of their problems
       (ii) Inculcation of values of National integration, Secularism, Democracy, Socialism,
            Humanism, Peace and Scientific temper

       ……………………………………………………   popular lectures
       ……………………………………………………   popular writings
       ……………………………………………………   other ways

       (iii) Adult education, flood or drought relief and similar other activities

(b)Position held in organisations linked with extension work and national social services, NSS

(c)Position held in N.C.C., if applicable.:

G.   ADMINISTRATION.:

Please give a short account of your contribution to.:-

(a) Administration of the University/Department   :

(b) Organization of curricular and extra-curricular activities:

(c) Residential life of students   :

(d) Maintenance of student discipline   :
(Position in Hall of Residences)

(e) Decision making and advisory bodies of your and other
     Universities/Academic Institutions   :

(f) Professional Organizations of teachers   :

H.   ASSESMENT.:

(a) Please state the honours conferred on you by.:-

     _____ Your student

     _____ Your Peers

     _____ Government

     _____ Others

(b) Did you get your teaching and curricular programme evaluated
     by students? If so, give its findings   :

I.   GENERAL DATA.:
(a) What in your judgement was your most important contribution? :

(b) What were the major difficulties that you faced?   :

(c) What are your suggestions for the future?   :

Signature of Teacher.

Assessment Criteria and methodology for University Teacher :

Sl. No.	Activity	Remarks of Teacher/As sessment	Grading Criteria	Assessment of Reporting Authority (Not to be filled by teacher)
01.	Teaching:(number of classes taught/total classes assigned) x 100% (Classes taught includes sessions on		80% & above – Good Below 80% but 70% & above – Satisfactory	

			Less than 70% - Not Satisfactory	
02.	Involvement in the University students related activities/research activities etc. a)Administrative responsibilities such as Head/Chairperson/Dean/Director/ Co-ordinator/ Warden etc. b)Examination and evaluation duties assigned by the University or attending the examination paper evaluation. c)Student related co-curricular, extension and field based activities such as student clubs, career counselling, study visits, student seminars and other events, cultural, sports, NCC, NSS and community services. d)Organising Seminars/conferences/ Workshops, other as University activities. e)Evidence of actively involved in guiding Ph.D. students f) Conducting minor or major research project sponsored by National or Inter-National agencies. g)At least one single or joint publication in SCI/SCOPUS Indexed Journals (without any article processing fee)		Good – Involved in at least 3 activities Satisfactory – 1-2 activities Not Satisfactory – Not involved/undertaken any of the activities Note :- Number of activities can be within or across the broad categories of activities.	

K. Methodology for University Teachers for calculating Academic/Research Score (API) :-
(Assessment must be based on evidence produced by the teacher such as: copy of publication, project sanction letter, utilization and completion certificates issued by the University and acknowledgements for patent filing and approval letters, students' Ph.D. award letter etc.)

Sl.No.	Academic/Research Activity	Faculty of Sciences/Engineering/Agriculture/Medical/Veterinary Sciences	Score claim by faculty	Remark Reporting Authority
1.	**Research Papers in Peer-reviewed Journals (SCI/SCOPUS)**	08 per paper		
2.	**Publications (Other than Research Papers)**			
	(a) Books authored which are published by :			
	International Publishers	12		
	National Publishers	10		
	Chapter in Edited Book	05		
	Editor of Book by International Publisher	10		
	Editor of Book by National Publisher	08		
	(b)Translation works in Indian and Foreign Languages by qualified faculties			
	Chapter or Research paper	03		
	Book	08		

3.	**Creation of ICT mediated Teaching Learning pedagogy and content and development of new and innovative courses and curricula**			
	a) Development of Innovative pedagogy	05		
	b) Design of new curricula and courses	02 per curricula/Course		
	Development of complete MOOCs in 4 quadrants (4 credit course) (In case of MOOCs of lesser credits 05 marks/credit)	20		
	MOOCS (developed in 4 quadrant.) per module/lecture	05		
	Content writer/subject matter expert for each module of MOOCs (at least one quadrant)	02		
	Course Coordinator for MOOCs (4 credit course) (In case of MOOCs of lesser 02 marks/credit)	08		
	(d) E-Content			
	Development of e-Content in 4 quadrants for a complete course/e-book	12		
	e-Content (development in 4 quadrants) per module	05		
	Contribution to development of e-content module in complete course/paper/e-book (at least one quadrant)	02		
	Editor of e-content for complete course/paper/e-book	10		
4.	**(a)Research guidance**			
	Ph.D.	10 per degree awarded (Single guidance) 05 per thesis submitted		
	M.Phil./P.G. dissertation	02 per degree awarded		
	(b) Research Projects Completed			
	More than 10 Lakhs	10		
	Less than 10 Lakhs	05		
	(c)Research Projects Ongoing :			
	More than 10 Lakhs	10		
	Less than 10 Lakhs	05		
	(d)Consultancy (More than 1 lakh)	03		
5.	**(a) Patents**			
	International	10		
	National	07		
	(b)*Policy Document (Submitted to an international body/organization like UNO/UNESCO/World Bank/International Monetary Fund etc. or Central Government or State Government.)			
	International	10		
	National	07		
	State	04		
	(C)Awards/Fellowship			
	International	07		
	National	05		
6.	***Invited Lectures/Resource Person/Paper Presentation in Seminars/Conferences/Full paper in Conference Proceedings(Paper presented in Seminars/Conference and also Published as full**			

	paper in Conference Proceedings will be counted only once)			
	International (Abroad)	07		
	International(Within Country)	05		
	National	03		
	State/University	02		
Total Self calculated API				

(Signature of the faculty)

The Research score for research papers would be augmented as follows : (Example: Paper publish in the Journal having impact factor 0.7, then the score shall be 08×10 = 18 , which will be divided depending on the position of author).

i)   Paper in refereed journals without impact factor   -   5 Points
ii)   Paper with impact factor less than 1   -   10 Points
iii)   Paper with impact factor between 1 and 2   -   15 Points
iv)   Paper with impact factor between 2 and 5   -   20 Points
v)   Paper with impact factor between 5 and 10   -   25 Points
vi)   Paper with impact factor >10   -   30 Points
a)   Two authors: 7o% of total value of publication for each author.
b)   More than two authors: 70% of total value of publication for the First/Principal/Corresponding author and 30% of total value of publication for each of the joint authors.
       Joint Projects: Principal Investigator and Co-investigator would get 50% each.

PART –II
OSSERVATIONS BY THE HEAD OF DEPARTMENT/REPORTING AUTHORITY

(a)   Verification of factual data

(b)   Observations regarding academic work
          (i)   Teaching :   (Good/Satisfactory/Not Satisfactory)
          (ii)   Research: (Good/Satisfactory/Not Satisfactory)
          (iii)   Project :   (Good/Satisfactory/Not Satisfactory)
          (iv)   Overall Assessment Criteria: (Good/Satisfactory/Not Satisfactory)
          (v)   Overall API :   (Good/Satisfactory/Not Satisfactory)

(c)   Observation about character, sociability and
          Integrity of the teacher :

Signature of the Head of the
Department/Reporting Authority
PART – III
REMARKS OF VICE-CHANCELLOR/ACCEPTING AUTHORITY
(Excellent/Good/Satisfactory/Not Satisfactory)

Date.................................   Signature of the Vice-Chancellor

PERFORMANCE APPRAISAL REPORT FOR TEACHERS OF VSS UNIVERSITY OF TECHNOLOGY, BURLA FOR THE ACADEMIC YEAR (**JULY 2020 TO JUNE 2021**)

GENERAL INFORMATION

(a) Name   :
(b) Address (Residential)   :
(c) Designation   :
(d) Department   :
(e) Date of appointment   :
    i)   In the University   :
    ii)   In the present post :
(f) Pay scale   :
(g) Present Pay   :
(h) Date of increment   :

PART - I

SELF ASSESSMENT OF THE TEACHER
(To be filled in by the teacher concerned)

A.   TEACHING:

(a)   Course taught

              L.   LECTURE
              T.   TUTORIAL
              P.   PRACTICAL

Class		Course Title	Periods allotted per week			Periods actually taught in the year		
			L	T	P	L	T	P
(i) B. Tech.	Odd Semester (July 2020-December 2020)							
	Even Semester (January 2021-June 2021)							
(ii) M.E./M.Tech./M.Sc./MPhil Dual Deg/MCA/Int.MSc		-	-	-	-	-	-	-
(iii) Any other PhD (Course Work)		-	-	-	-	-	-	-

(b)   Did you supply the Lecture Teaching plans of the course to the students? Yes
      If yes, give a specimen copy.
(c)   Internal education of student carried out: (Nos.)

    i)   Tests   :
    ii)   Quiz   :
    iii)   Home assignments :
    iv)   Any other   : -

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(d)   Results of the courses taught (last published results)

Results of U. G. Semester Exam	No. of students	Nos. Passed:
Results of P. G. Sem. Exams	No. of students	Nos. Passed:
Results of Ph.D. Exams	No. of students	Nos. Passed:

B.   INNOVATIONS IN TEACHING :

(a)	Contributions, if any to development of curriculum, give description	
(b)	Innovations in teaching methods, Give a brief description	
(c)	Innovations in laboratory experiments, if any, give a brief description	
(d)	Preparation of Teaching materials, if any, give a brief description:	
(e)	How many NPTEL Course has been used? (Which one......)	
(f)	How many MOOCs Courses trained or got passed/trained?	
(g)	How many completed CO for IQAC (if yes, submit evidence):	
(h)	How many calculated COs for last two semesters?(If yes, submit evidence)	

C.   IMPROVEMENT OF QUALIFICATIONS : (M.Tech./M.Phil/Ph.D) : Not Applicable

Name of Course	Diploma/Degree	Name of the University	Subjects with specialization	Duration year	Marks/Grade obtained

D.   REFRESHER COURSES, SUMMER/WINTER SCHOOLS ATTENDED :

Sl. No.	Name of the course	University/ Institution	Duration		Certificate/ Marks obtained
			From	To	
1.					

E.   RESEARCH WORK DONE :
(a)   No. of M.Tech./MSc./M.Phil/Ph.D students guided in the year:
      (Give names of students)
(b)   No. of students awarded Ph.D Degree: PhD-
      (Give names of students and titles of thesis)

Regd. No.	Name of the Student	Title of thesis	Level M.Tech./M.Sc./ P.Phil/Ph.D.	Year of Completion

(c)   No. of Research papers published :

Sl. No.	Title of Paper	Name of the Journal	Date and year of publication	Remarks (Co-authors)	Whether SCI/SCO PUS
1.					
2.					

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3.				
4.				
5.				

(d)_____Project in progress / completed:

Title of the Project	Name of the funding agency	Date of Sanction & Duration	Complete/Not complete (Date of completion)

(e)   Seminars, Conferences, Symposia attended :

Name of the Seminar/Conference /Symposia	Name of the sponsoring agency and Date	Country	Name of paper contributed	Remarks

(f)   Seminars/Conferences/Summer School/ Winter School organized:

Name of the course	Duration	Sponsored by	No of Participants attended

(g)   Patents taken, if any, give a brief description   :

Name of the Patent	Patent no./year	Inventors	Indian/Foreign

(h)   Membership of professional bodies   :

F.   EXTENSION WORK :

(a)   Please give a short account of your contribution to   :
         (i)   Service of the community in the solution of their problems :

         (ii)   Inculcation of the values of national integration,
                   Secularism, democracy, socialism, humanism, peace
                   and scientific temper   :
         _____: popular lectures
         _____: popular writings
         _____: other ways

         (iii)   Adult education, flood or drought relief and similar
                   Other activities:
(b)   Position held in organizations linked with extension work and national social services, N.S.S.

(c)   Position held in NCC if applicable:

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G.   ADMINISTRATION:

         Please give a short account of your contribution to:
(a)   Administration of the University/Department   :

(b)   Organization of curricular and extra-curricular activities :
(c)   Residential life of students   :

(d)   Maintenance of student discipline(Position in student Hostel):

(e)   Decision making and advisory bodies of your and Other Universities/Academic institutions:

(f)   Professional organizations of teachers   : Nil

H.   ASSESSMENT :
(a)   Please state the honours conferred on you by –
         _____Your Student
         _____Your Peers
         _____The Government
         _____ Others
(b)   Did you get your teaching & curricular programme evaluated by students? If so, give its findings :

I.   GENERAL DATA   :
         (a) What in your judgement was your most important contribution?

         (b) What were the major difficulties that you faced?

         (c) What are your suggestions for the future?
              .

                                                             Signature of Teacher

J. Assessment Criteria and Methodology for University Teacher:

Sl. No.	Activity	Remarks of Teacher/Assessment	Grading Criteria	Assessment of Reporting Authority (Not to be filled by teacher)
01	Teaching: (Number of classes taught/total classes assigned)x100% (Classes taught includes sessions on tutorials, lab and other teaching related activities)		80% & above - Good Below 80% but 70% & above-Satisfactory Less than 70% - Not satisfactory	

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	Involvement in the University/College students related activities/research activities:		
	(a) Administrative responsibilities such as Head, Chairperson/Dean/Director/Co-ordinator, Warden etc.		
	(b) Examination and evaluation duties assigned by the college / university or attending the examination paper evaluation.	Good - Involved in at least 3 activities	
02	(c) Student related co-curricular, extension and ~~field—based~~ activities such as student clubs, career counselling, study visits, student seminars and other events, cultural, sports, NCC, NSS and community services.	Satisfactory - 1-2 activities Not-satisfactory - Not involved / undertaken any of the activities **Note:**	
	(d) Organising seminars/ conferences/ workshops, other college/university activities.	Number of activities can be within or across the broad categories of activities	
	(e) Evidence of actively involved in guiding ~~Ph.D.~~students.		
	(f) Conducting minor or major research project sponsored by national or international agencies.		
	(g) At least one single or joint publication in SCI/SCOPUS Indexed Journals (without any article processing fee)		

K. Methodology for University and College Teachers for calculating Academic/Research Score (API):
(Assessment must be based on evidence produced by the teacher such as: copy of publications, project sanction letter, utilization and completion certificates issued by the University and acknowledgements for patent filing and approval letters, students' Ph.D. award letter, ~~etc.~~)

S.A No	Academic/Research Activity	Faculty of Sciences /Engineering / Agriculture / Medical /Veterinary Sciences	Score claim by faculty	Remark Reporting Authority
1.	**Research Papers in Peer-Reviewed Journals (SCI/SCOPUS)**	08 per paper		
	Publications (other than Research papers)			
	(a) Books authored which are published by :			
	International publishers	12		
	National Publishers	10		
	Chapter in Edited Book	05		
2.	Editor of Book by International Publisher	10		
	Editor of Book by National Publisher	08		
	(b) Translation works in Indian and Foreign Languages by qualified faculties			
	Chapter or Research paper	03		
	Book	08		
	Creation of ICT mediated Teaching Learning pedagogy and content and development of new and innovative courses and curricula			
3.	(a) Development of innovative pedagogy	05		
	(b) Design of new curricula and courses	02 Per curricula		

		/~~course~~		
	(c) MOOCs			
	Development of complete MOOCs in 4 quadrants (4 credit ~~course~~)In case of MOOCs of lesser credits 05 marks/credit)	20		
	MOOCs (developed in 4 quadrant) per module/lecture	05		
	Content writer/subject matter expert for each module of MOOCs (at least one quadrant)	02		
	Course Coordinator for MOOCs (4 credit ~~course~~)In case of MOOCs of lesser credits 02 marks/credit)	08		
	(d) E-Content			
	Development of e-Content in 4 quadrants for a complete course/e-book	12		
	e-Content (developed in 4 quadrants) per module	05		
	Contribution to development of e-content module in complete course/paper/e-book (at least one quadrant)	02		
	Editor of e-content for complete course/ paper /e-book	10		

S.A No	Academic/Research Activity	Faculty of Sciences /Engineering / Agriculture / Medical /Veterinary Sciences	Score claim by faculty	Remark Reporting Authority
	(a) Research guidance			
	Ph.D.	10 per degree awarded 05 per thesis submitted		
	M.Phil./~~P-G~~ dissertation	02 per degree awarded		
4.	**(b) Research Projects Completed**			
	More than 10 lakhs	10		
	Less than 10 lakhs	05		
	(c) Research Projects Ongoing :			
	More than 10 lakhs	05		
	Less than 10 lakhs	02		
	(d) Consultancy	03		
	(a) Patents			
	International	10		
	National	07		
	(b) *Policy Document (Submitted to an International body/organisation like UNO/UNESCO/World Bank/International Monetary Fund etc. or Central Government or State Government)			
5.	International	10		
	National	07		
	State	04		
	(c) Awards/Fellowship			
	International	07		
	National	05		
	*Invited lectures / Resource Person/ paper presentation in Seminars/ Conferences/full paper in Conference Proceedings (Paper presented in Seminars/Conferences and also published as full paper in Conference Proceedings will be counted only once)			
6.	International (Abroad)	07		
	International (within country)	05		
	National	03		
	State/University	02		
	Total Self calculated API			

(Signature of the faculty)

The Research score for research papers would be augmented as follows: (Example: Paper publish in the Journal having impact factor 0.7, then the score shall be 08+10=18, which will be divided depending on the position of author).

(i)	Paper in referred journals without impact factor	-	5 Points
(ii)	Paper with impact factor less than 1	-	10 Points
(iii)	Paper with impact factor between 1 and 2	-	15 Points
(iv)	Paper with impact factor between 2 and 5	-	20 Points
(v)	Paper with impact factor between 5 and 10	-	25 Points
(vi)	Paper with impact factor >10	-	30 Points

a)   Two authors: 70% of total value of publication for each author.

b)   More than two authors: 70% of total value of publication for the First/Principal/Corresponding author and 30% of total value of publication for each of the joint authors.

Joint Projects: Principal Investigator and Co-investigator would get 50% each.

PART-II:
OBSERVATIONS BY THE HEAD OF DEPARTMENT/REPORTING AUTHORITY

(a)   Verification of factual data:

(b)   Observations regarding academic work
   (i)   Teaching: (Good/Satisfactory/Not Satisfactory)
   (ii)   Research: (Good/Satisfactory/Not Satisfactory)
   (iii) Project: (Good/Satisfactory/Not Satisfactory)
   (iv)   Overall Assessment Criteria: (Good/Satisfactory/Not Satisfactory)
   (v)   Overall API: (Good/Satisfactory/Not Satisfactory)

(c)   Observation about character, sociability and
      integrity of the teacher.

Signature of the Head of the Department/Reporting Authority

PART-III
REMARKS OF VICE-CHANCELLOR/ACCEPTING AUTHORITY

Excellent/Good/Satisfactory/Not Satisfactory)

Date..........................   Signature of the Vice-Chancellor

5.10 Visiting/Adjunct/Emeritus Faculty etc. (10)   Total Marks 10.00

Institute Marks : 10.00

Visiting/Adjunct/Emeritus Faculty (2023-2024)		
YEAR	Topics of the talk and Delivered by	Duration (Hours)
2023-2024	Three dimensional stress analysis in structural application (Prof. S K. Panigrahi, DIAT, Pune)	2
2023-2024	Renewable Energy Technology by Harnessing Wind Power (Prof. Niranjan Sahu, IIT Guwahati)	2
Visiting/Adjunct/Emeritus Faculty (2022-2023)		
2022-2023	Advances in machining and machinability studies under sustainable environment (Prof. Ashok Kumar Sahoo, KIIT University)	2
2022-2023	Challenges, opportunity and future aspects in aluminum industry (Er. D. Mallik, HINDALCO, Hirakud)	2
Visiting/Adjunct/Emeritus Faculty (2020-2021)		
2020-2021	Four-dimensional printing for Innovative design (Dr. Rupinder Singh, NITTTR Chandigarh)	2
2020-2021	Transforming Design and Manufacturing: 3D Printing Transformation (Mr. Janardanan Venkat, Redington India Limited)	2
2020-2021	3D printing Future homes: From project to product mindset (Dr Biranchi Panda, IIT Guwahati)	2
2020-2021	3D Printing Data File Formats (Dr. Y. Ravi Kumar, NIT Warangal)	2
2020-2021	Rapid Tooling: An Industrial application of 3-D printing (Dr. S. Kanmani Subbu, IIT Indian Palakkad, Kerala)	2
2020-2021	Addressing Some Technological Challenges in Laser Additive Manufacturing (Prof. Asish Kumar Nath, IIT Kharagpur)	2
2020-2021	Shaping the future of a nation through smart and additive manufacturing (Dr. Pulak Mohan Pandey, IIT Delhi)	2
2020-2021	3D printing: Opportunity and challenges (Dr. Chandra Sekhar Tiwary, IIT Kharagpur)	2
2020-2021	Biomaterials Implants: Status, and Challenges (Prof. Bikramjit Basu, IISC Bangalore)	2
2020-2021	Concept of Data Sciences (Prof. P. Radha Krishna, Professor, Department of Computer Science and Engineering, NIT, Warangal, India)	2
2020-2021	Data Analysis for reliability quantification of safety critical system (Dr. Lalit Singh, Scientist, NPCIL-BARC, DAE, Govt. of India)	2
2020-2021	Evolutionary multi-objective optimization – Case study (Dr. Probir Saha, IIT, Patna)	2
2020-2021	Prediction Tools in Manufacturing Processes (Prof. Siba Sankar Mohapatra, NIT, Rourkela)	2
2020-2021	Machine learning approach for fault diagnosis (Prof. Arun Kumar Samantaray, IIT Kharagpur)	2
2020-2021	Applications of Data Science in Supply Chain Analytics (Mr. Srichandan Sahu, Business & SCM Transformational Leader, Mumbai)	2
2020-2021	Significance of ISM (Interpretive Structural Modeling) in Data Science (Prof. Sushant Tripathy, KIIT DU)	2
2020-2021	Input-Output Modeling of Manufacturing Process (Prof. D. K. Pratihar, IIT Kharagpur)	2
2020-2021	Regression Techniques and their Implementations (Dr. Sanjay Panda, Assistant Professor, NIT, Warangal)	2
2020-2021	Mind Management (Prof. Alok Satapathy, NIT, Rourkela)	2
2020-2021	Industry 4.0 (Prof. Surjya K Pal, IIT Kharagpur)	2
2020-2021	Smart Factory with Digital Twin (Mr. Aravind Ramachandran)	2

YEAR	Topics of the talk and Delivered by	Duration (Hours)
2020-2021	Sustainable Manufacturing towards Industry 4.0 (Prof. Shibendu Shekhar Roy)	2
2020-2021	Experimental Investigations in Micro Forming Dr. Kakandikar Ganesh M., Professor and Associate Head School of Mechanical Engineering, MIT World Peace University, Pune.	2
2020-2021	Micro-forming using Lasers Dr. Ravi Kant, Assistant Professor Department of Mechanical Engineering, IIT Ropar	2
2020-2021	Relevance of Indentation Tests in Materials Research Dr. B. Sridhar Babu, Professor Department of Mechanical Engineering, CMRIT, Hyderabad	2
2020-2021	3D and 4D Manufacturing Processes Dr. Kaushik Kumar, Associate Professor Department of Mechanical Engineering, BIT Mesra, Ranchi	2
2020-2021	Tribology – A Tool for Material Characterization Prof. Prasanta Sahoo, Professor Department of Mechanical Engineering, Jadavpur University, Kolkata	2
2020-2021	Abrasive Flow Finishing of Complex Features Dr. Mamilla Ravi Sankar, Associate Professor Department of Mechanical Engineering, IIT Tirupati	2
2020-2021	Functionally Graded Materials (FGM): Design, Processing, & Applications Dr. A. K. Chaubey, Sr. Principal Scientist Department of Advanced Materials Technology, CSIR-IMMT, Bhubaneswar	2
2020-2021	Application of textured cutting tools in Machining Dr. Sudarsan Ghosh, Professor Department of Mechanical Engineering, IIT Delhi	2
2020-2021	Micromachining: New Challenges Prof. Bijoy Bhattacharyya, Professor Department of Production Engineering Jadavpur University, Kolkata	2
2020-2021	Laser and Tungsten Inert Gas (TIG) welding for surface modification Dr. Manoj Masanta, Assistant Professor Department of Mechanical Engineering, NIT Rourkela	2
		64 hrs.

Visiting/Adjunct/Emeritus Faculty (2019-2020)		
YEAR	Topics of the talk and Delivered by	Duration (Hours)
2019-2020	Bio-waste into valuable polymeric materials Dr. Hakimah Osman Associate Professor, School of Materials Engineering, Universiti Malaysia Perlis, Malaysia	2
2019-2020	Investigation of Effect of Preventive Maintenance on Machine Reliability in a Beverage Packaging Plant Dr. Kamalakanta Muduli Associate Professor, Department of Mechanical Engineering, Papua New Guinea University of Technology, Lae, Morobe Province	3
2019-2020	Potential Research Topics in Materials Science and Stress Management during Research Prof. Alok Satapathy Professor, Department of Mechanical Engineering, National Institute of Technology, Rourkela	3
2019-2020	Machining & Machinability of Advanced Engineering Materials Dr. Saurav Datta Associate Professor, Department of Mechanical Engineering, National Institute of Technology, Rourkela	3

2019-2020	Various cooling-lubrication techniques in machining Prof. Ashok Kumar Sahoo, Professor, School of Mechanical Engineering, KIIT University, Bhubaneswar	2
2019-2020	Functionally Graded Nanocomposite Coatings Doped with Rare Earth Oxides by Thermal Spraying Dr. Sisir Mantry Senior Scientist CSIR-Institute of Minerals and Materials Technology, Bhubaneswar	3
2019-2020	Application of coatings during machining Dr. Ch Sateesh Kumar Assistant Professor and Researcher, Advanced Materials Group, Czech Technical University, Prague	3
2019-2020	Robotics and its recent Industrial Applications Dr. B B V L Deepak Assistant Professor, Department of Industrial Design National Institute of Technology, Rourkela	3
2019-2020	EDM and WEDM Dr. Ankur Gupta Assistant Professor, Department of Mechanical Engineering, Indian Institute of Technology, Jodhpur	2
2019-2020	Manufacturing Process Simulations: Trends, Challenges & Opportunities Dr. S. Deepak Kumar Assistant Professor, Department of Production Engineering Birla Institute of Technology, Mesra	2
		26hrs.
	Visiting/Adjunct/Emeritus Faculty (2018-2019)	
YEAR	Topics of the talk and Delivered by	Duration (Hours)
2018-2019	Introduction to Functional Engineering Nano-Material and applications Dr. Bikash Kumar Jena Scientist, Colloids and materials Chemistry Department CSIR-Institute of Minerals and Materials Technology, Bhubaneswar, Odisha	3
2018-2019	Introduction to Nano Materials and its failure analysis Dr. Anil Kumar Chaubey Principal scientist, Advanced Materials Technology Department CSIR - Institute of Minerals and Materials Technology, Bhubaneswar	2
2018-2019	The scope of Functional Engineering Material Research in Defense Dr. Amitanshu Pattanaik Senior scientist, Defence Research & Development Organization, DTRL, Delhi	2
2018-2019	Material Research in Defense industry: Recent advances of Functional Engineering Materials in metal forming process, Modeling, and Analysis (Steel and Titanium) Dr Swadesh Kumar Singh Professor, Dean (R & D), Department of Mechanical Engineering GRIET, Hyderabad	2
2018-2019	The Scope of Functional Engineering Material Research: Recent Advances of Functional Graded Composite Materials, Manufacturing and Characterization Dr. Kaushik Kumar Associate Professor, Department of Mechanical Engineering Birla Institute of Technology, Mesra	3

2018-2019	Functionally Graded Nanocomposite Coatings Doped with Rare Earth Oxides by Thermal Spraying and Electrophoretic Deposition Dr. Sisir Mantry Sr. Scientist, CSIR- Institute of Minerals & Materials Technology, Bhubaneswar	3
2018-2019	Finite Element Analyses of Functionally Graded Adhesively Bonded joints of Laminated FRP Composites Plates and Tubes Prof. Sashi Kanta Panigrahi Professor, Department of Mechanical Engineering, Defense Institute of Advanced Technology (Deemed University), Girinagar, Pune	2
2018-2019	Industry 4.0 Prof. Biswajit Satpathy Professor, Sambalpur University, Sambalpur	4
2018-2019	Introduction to Composite Material Mechanics and Implementation of Finite Element Method Dr. Subrata Kumar Panda Associate Professor, Department of Mechanical Engineering National Institute of Technology, Rourkela	3
2018-2019	Study of machining characteristics using MINITAB Dr. Sushanta Tripathy Professor, School of Mechanical Engineering KIIT University, Bhubaneswar	3
2018-2019	Challenges in Machining Prof. Ajay Kumar Chattopadhyay Professor (Emeritus), Department of Mechanical Engineering, Indian Institute of Technology, Kharagpur	2
2018-2019	A Multivariate Quality Loss Function Approach for Parametric Optimization of Non-traditional Machining Processes Dr. Shankar Chakraborty Professor, Department of Production Engineering Jadavpur University, Kolkata	2
2018-2019	Electrochemical Discharge Machining (ECDM): An Overview Dr. Biplab Ranjan Sarkar Associate Professor, Department of Production Engineering Jadavpur University, Kolkata	3
2018-2019	Laser based Additive Manufacturing Dr. Seshadev Sahoo Associate professor, Mechanical Engineering, Faculty of Engineering and Technology, ITER Siksha O Anusandhan (Deemed to be University), Bhubaneswar	3
2018-2019	EDM and WEDM Dr. Ankur Gupta Assistant Professor, Department of Mechanical Engineering, Indian Institute of Technology, Jodhpur	2
2018-2019	Nano Finishing Techniques Dr. Chandan Kumar Biswas Professor, Department of Mechanical Engineering National Institute of Technology, Rourkela	2
2018-2019	Multi Criteria Decision Making Methods: An Overview Dr. Bharat Chandra Routray Professor, School of Mechanical Engineering, KIIT University, Bhubaneswar	2
2018-2019	Modeling and Simulation in Machining Dr. Gaurav Bartarya Assistant Professor, School of Mechanical Sciences, Indian Institute of Technology, Bhubaneswar	2

2018-2019	Laser Beam Machining Dr. Suvradip Mullick Assistant Professor, School of Mechanical Sciences, Indian Institute of Technology, Bhubaneswar	2
2018-2019	Abrasive Jet Machining Dr. Manoj Masanta Assistant Professor, Department of Mechanical Engineering National Institute of Technology, Rourkela	3
2018-2019	Machine tools and recent development in cutting tool materials Er. Sai Krishna Nimmagadda Managing Partner, Gulf Adonis, Sharjah, UAE	3
		53 hrs.

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6 FACILITIES AND TECHNICAL SUPPORT (80)   Total Marks 80.00

6.1 Adequate and well equipped laboratories, and technical manpower (40)   Total Marks 40.00

Institute Marks : 40.00

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	ADVANCED M	30	ELECTRO DIS	8	Prasanta Kuma	Senior Instructo	diploma
2	METAL FORMI	30	DIGITAL UTM,	8	Prasanta Kuma	Senior Instructo	diploma
3	METAL CUTTII	30	ENGINE LATH	8	Prasanta Kuma	Senior Instructo	diploma
4	METROLOGY	30	SURFACE RO!	8	Debraj Pandey	Senior Instructo	diploma
5	VIRTUAL MAN	30	3D PRINTER N	8	Debraj Pandey	Senior Instructo	diploma
6	COMPUTER A	30	ANSYS FLUEN	8	Debraj Pandey	Senior Instructo	diploma
7	FMS & ROBOT	30	SIX AXIS ARTI	8	Debraj Pandey	Senior Instructo	diploma
8	NON- TRADITI	30	ELECTRO DIS	8	Prasanta Kuma	Senior Instructo	diploma

6.2 Laboratories maintenance and overall ambiance (10)   Total Marks 10.00

Institute Marks : 10.00

1. The laboratories within the department are outfitted with comprehensive components and equipment necessary for conducting experiments outlined in the syllabus, as well as additional resources for advanced experimentation.
2. Prior to each semester, all lab equipment undergoes routine maintenance to ensure proper functionality, enabling students to conduct experiments accurately.
3. Detailed records of breakdown maintenance work are meticulously maintained within the laboratories.
4. Routine minor repairs are managed by lab instructors, while major repairs are outsourced to university-approved service providers.
5. Repairs are promptly addressed upon identification, either through authorized service providers or suppliers.
6. The lab environment is carefully curated, providing students with a conducive atmosphere for experimentation, with equipment thoughtfully arranged for optimal comfort and accessibility.
7. Storage practices are diligently followed, ensuring proper organization of raw materials, archived records, and models within the laboratory premises.
8. Within the working hours all labs are open to the students to carry their project work with a full technical support and beyond the working hours labcan used with the permission of HOD. Extra lab slots are provided depending on the progress in the course practical work if necessary
9. Additional lab sessions are scheduled based on the progress of practical coursework, ensuring students have ample opportunity for hands-on learning.
10. Each student is assigned individual lab tasks, allowing for focused attention and practical skill development.
11. Regular audits of machinery and equipment are conducted to maintain operational efficiency and safety standards.
12. Educational charts outlining equipment operations, specifications, and functionalities are prominently displayed for reference within the laboratories.

Overall ambience

1. All laboratories are kept comfortably and well-lit by an abundance of natural light, efficient ventilation systems, tube lights, and fan configurations.
2. There are designated places for instruction that provide plenty of room for staff and students to participate in teaching and learning activities.
3. Projector capabilities in the CAD/CAM and Robotics improve visual presentations and the efficacy of education.
4. The CAD/CAM lab have air conditioning installed to maintain ideal temperatures during extended work hours.
5. Internet facility has been provided by the department to the students in CAD/CAM Lab.
6. Around 17 computers are available in the CAD/CAM labs with fully loaded licensed software's to facilitate all students to carry their course work.
7. Uninterruptible power supply systems are installed in every laboratory to guarantee the continuous running of the apparatus and the investigations. To handle any emergency, first aid kits and fire extinguishers are also easily available.
8. All laboratories have whiteboards and high-speed internet access, which supports interactive instruction, group projects, and research.

6.3 Safety measures in laboratories (10)   Total Marks 10.00

Institute Marks : 10.00

Sr. No	Laboratory Name	Safety Measures
1	ADVANCED MANUFACTURING LABORATORY	1. Use of Personal Protective Equipment, 2. Hazardous Material Handling training, 3. Proper maintenance of machinery and equipment, 4. Effective ventilation systems, 5. First Aid box and fire extinguisher for emergency, 6. Electrical Safety, 7. Chemical Safety, 8. safety training to all personnel working 9. Regular Inspections, 10. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory
2	METAL FORMING LABORATORY	1. Use of Personal Protective Equipment, 2. Hazardous Material Handling training, 3. Proper maintenance of machinery and equipment, 4. Effective ventilation systems, 5. First Aid box and fire extinguisher for emergency, 6. Electrical Safety, 7. safety training to all personnel working 8. Regular Inspections, 9. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory
3	METAL CUTTING LABORATORY	1. Use of Personal Protective Equipment, 2. Hazardous Material Handling training, 3. Proper maintenance of machinery and equipment, 4. Effective ventilation systems, 5. First Aid box and fire extinguisher for emergency, 6. Electrical Safety, 7. safety training to all personnel working 8. Regular Inspections, 9. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory
4	METROLOGY LABORATORY	1. Use of Personal Protective Equipment, 2. Proper maintenance of machinery and equipment, 3. Effective ventilation systems, 4. First Aid box and fire extinguisher for emergency, 5. Electrical Safety, 6. safety training to all personnel working 7. Regular Inspections, 8. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory
5	VIRTUAL MANUFACTURING LABORATORY	1. Data Security, 2. Ergonomic workstation setups, 3. Software must be licensed, updated, and free from malware or other security threats, 4. Electrical Safety, 5. Data backup and recovery, 6. Restrict access to sensitive data, 7. complies with relevant regulations and standards for data security and privacy, 8. Continuous Monitoring and Improvement, 9. Fire extinguisher, 10. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory
6	COMPUTER AIDED DESIGN LABORATORY	1. Data Security, 2. Ergonomic workstation setups, 3. Software must be licensed, updated, and free from malware or other security threats, 4. Electrical Safety, 5. Data backup and recovery, 6. Restrict access to sensitive data, 7. complies with relevant regulations and standards for data security and privacy, 8. Continuous Monitoring and Improvement, 9. Fire extinguisher, 10. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory
7	FMS & ROBOTICS LABORATORY	1. Use of Personal Protective Equipment, 2. Proper maintenance of machinery and equipment, 3. Effective ventilation systems, 4. Ergonomic workstation setups 5. First Aid box and fire extinguisher for emergency, 6. Electrical Safety, 7. safety training to all personnel working 8. Regular Inspections, 9. Automation Safety, 10.Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory
8	NON- TRADITIONAL MACHINING LABORATORY	1. Use of Personal Protective Equipment, 2. Hazardous Material Handling training, 3. Proper maintenance of machinery and equipment, 4. Effective ventilation systems, 5. First Aid box and fire extinguisher for emergency, 6. Electrical Safety, 7. safety training to all personnel working 8. Regular Inspections, 9. Tool safety, 10. Specific Safety Rules in the form of Do's and Don'ts are Displayed in the Laboratory

6.4 Project laboratory (20)   Total Marks 20.00

Institute Marks : 20.00

The departments project laboratory gives students the chance to work in a cutting-edge setting and acquire practical experience that will help them become skilled in the technical and creative skills required in the field of mechanical engineering. The Project Laboratory plays a crucial part in encouraging hands-on learning, where students create original ideas and carry out their final projects. The following facilities are available in department project lab.

Workspace Design: With designated spaces for ideation, design talks, and practical prototyping, the lab is set up to offer project teams a comfortable place to work.

Advanced Equipment: The production engineering project lab is furnished with the most recent apparatus and instruments required for carrying out research, prototyping, and real-world projects. This comprises laser cutting devices, CNC machines, 3D printers, and other specialty machinery.

Expert support: Students working on lab projects can receive help and mentoring from knowledgeable academic members and technical professionals. They help students overcome obstacles and meet project goals by providing knowledge in a range of production engineering-related areas.

Interdisciplinary Collaboration: Students from various academic backgrounds, including computer science, mechanical engineering, and electrical engineering, come together in the project lab to work on projects that call for a variety of skill sets and viewpoints.

Research and Innovation: The lab promotes a culture of experimentation, creativity, and problem-solving by acting as a center for research and innovation in production engineering. It is encouraged of students to investigate novel concepts, produce creative fixes, and progress the field.

Prototyping Facilities: The lab offers prototyping facilities, including rapid prototyping technologies such as 3D printing and laser cutting, to enable students to quickly iterate on designs and bring their ideas to life.

Industry Partnerships: The lab works with industry partners to give students access to mentors in the field, opportunity for real-world projects, and knowledge of cutting-edge technology and production engineering best practices.

Safety Measures: Stringent safety protocols are implemented in the lab to ensure the well-being of students and staff. This includes training on equipment usage, proper handling of materials, and adherence to safety guidelines and procedures.

7 CONTINUOUS IMPROVEMENT (75)   Total Marks 75.00

7.1 Actions taken based on the results of evaluation of each of the COs, POs & PSOs (30)   Total Marks 30.00

Institute Marks : 30.00

POs Attainment Levels and Actions for Improvement- (2022-23)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	2.4	2.675	The attained value is greater than the targeted value. However, the following actions have been undertaken for improvement.
Curriculum gap analysed Content delivery modes substantiate The assessment method is confirmed.			
PO 2 : Problem Analysis			
PO 2	2.4	2.543	The attained value is greater than the targeted value. However, the following actions have been undertaken for improvement.
Curriculum gap analysed Content delivery modes substantiate The assessment method is confirmed.			
PO 3 : Design/development of Solutions			
PO 3	2.4	2.614	The attained value is greater than the targeted value. However, the following actions have been undertaken for improvement.
Curriculum gap analysed Content delivery modes substantiate The assessment method is confirmed.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2.4	2.5	The attained value is marginally greater than the targeted value. Therefore, the following actions have been undertaken for improvement.
Curriculum gap analysed Content delivery modes substantiated. The assessment method is confirmed. Students are encouraged and provided with the necessary facilities to conduct open-ended experiments in the labs.			
PO 5 : Modern Tool Usage			
PO 5	2.4	2.34	The attained value is marginally lower than the targeted value. Therefore, the following actions have been undertaken for improvement.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc. Students are introduced to professional software and modern tools such as Solidworks, ANSYS, ABAQUS, ProE, MATLAB, Python etc., to meet the demands of engineering applications in the contemporary industrial landscape.			
PO 6 : The Engineer and Society			
PO 6	2.4	2.394	The attained value is slightly lower than the targeted value. Therefore, the following actions have been undertaken for improvement.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc. The faculty members were advised to integrate course activities with societal concerns such as safety, sustainability, profitability, legal considerations, and cultural factors. Additionally, the numerical problems within the course should emphasize these societal issues, including aspects related to safety, sustainability, and profitability.			
PO 7 : Environment and Sustainability			
PO 7	2.4	2.373	The attained value is substantially lower than the targeted value. Therefore, the following actions have been undertaken for improvement.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc. The faculty members were advised to integrate course activities with societal concerns such as safety, sustainability, profitability, legal considerations, and cultural factors. Additionally, the numerical problems within the course should emphasize these societal issues, including aspects related to safety, sustainability, and profitability.			
PO 8 : Ethics			
PO 8	2.4	2.202	The attained value is substantially lower than the targeted value. Therefore, the following actions have been undertaken for improvement.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc. To cultivate ethical behavior among students, more emphasis is put on maintaining a low similarity index in all assignments and report submissions. The university employs 'iThenticate' to evaluate the similarity index and make determinations regarding submitted project reports. Courses such as 'Professional Ethics, Professional Law & Human Values' are prioritized to enhance students' capacity to make ethical decisions in practical scenarios.			
PO 9 : Individual and Team Work			
PO 9	2.4	2.403	The attained value is as good as the targeted value. Therefore, the following actions have been undertaken for improvement.
Significant importance is placed on courses such as seminars, projects, and various activities that require students to collaborate as a team. Assignments and group experiments are organized during laboratory sessions to familiarize students with diverse working environments and enable them to perform effectively both individually and as part of a team. Starting from the seventh semester, students are grouped together to work on their final academic projects.			
PO 10 : Communication			
PO 10	2.4	2.052	The attained value is substantially lower than the targeted value. Therefore, the following actions have been undertaken for improvement.
In addition to dedicated courses such as "English for Business Communication" and "Business Communication Skills Lab," various exercises such as in-class presentations, seminars, grand viva, and group experiment sessions in the laboratory constitute essential components of the curriculum. These activities aim to enhance students' communication skills, which are crucial for their future professional endeavors.			
PO 11 : Project Management and Finance			
PO 11	2.4	2.473	The attained value is substantially lower than the targeted value. Therefore, the following actions have been undertaken for improvement.
The design problems, manufacturing numerical analyses, and laboratory classes predominantly incorporate considerations of social, environmental, safety, and economic factors. Particularly, students exhibit high engagement in project management-related courses. Through activities like the Minor Project, Project Preparation, and Project Exposition, students hone their project management and financial planning skills. Projects are undertaken collaboratively, with each student submitting an individual contribution report detailing their specific role and input within the group. Moreover, project supervisors assess and document the role and contribution of each student, which subsequently informs the evaluation of learning outcomes.			
PO 12 : Life-long Learning			
PO 12	2.4	2.225	The attained value is substantially lower than the targeted value. Therefore, the following actions have been undertaken for improvement.

Regular alumni talks, guest lectures, and departmental seminars are organized to instill a culture of lifelong learning among students. Through these sessions, students gain insights from the experiences and expertise of alumni, academia and industry professionals, broadening their knowledge and fostering continuous personal and professional development. Students are assigned independent tasks and learning activities throughout theory, practical, and laboratory sessions, as outlined in a previous section, encouraging them to actively engage in self-directed learning. This approach is also emphasized during the implementation of final year projects, where students are expected to take ownership of their learning and apply their acquired knowledge and skills independently.

PSOs Attainment Levels and Actions for Improvement- (2022-23)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Identify, formulate design and investigate Production Engineering problems using first principles of mathematics, basic science and engineering.			
PSO 1	2.4	2.66	The attained value is greater than the targeted value.
PSOs must be redefined to a higher objective and/or Modification in the process used to identify extent of compliance of the stated PSOs is suggested. PSOs must be redefined and/or Curriculum Modification/Refinement is suggested.			
PSO 2 : Establish themselves as practicing professionals in core service or research sector or entrepreneurial endeavors by solving real life engineering problems to offer techno-commercially feasible and socially acceptable solutions using contemporary knowledge and tools.			
PSO 2	2.4	2.67	The attained value is greater than the targeted value.
PSOs must be redefined to a higher objective and/or Modification in the process used to identify extent of compliance of the stated PSOs is suggested. PSOs must be redefined and/or Curriculum Modification/Refinement is suggested.			
PSO 3 : Communicate ethically and effectively as well as demonstrate aspiration to learn and ability to handle problems with professional attitude.			
PSO 3	2.4	2.63	The attained value is greater than the targeted value.
PSOs must be redefined to a higher objective and/or Modification in the process used to identify extent of compliance of the stated PSOs is suggested. PSOs must be redefined and/or Curriculum Modification/Refinement is suggested.			

7.2 Academic Audit and actions taken thereof during the period of Assessment (15)   Total Marks 15.00

Institute Marks : 15.00

The Academic audit system is very active in the Institute. The Academic Audit, in our University is like program reviews, is a peer review process including a self-study by peers from within and outside the institution. The Academic audit is done in two phases: Internal Audit and External Audit. The internal audit team comprises of two faculties from each department (One with high credibility in teaching and research; the other one with exposure to accreditation, program administration). The members may be nominated by Competent Authority of the University. The members must be of equivalent rank of Professor.

The External audit is done by faculty members of other institution (Premium institution or accredited one).

AUDIT Process: Department will prepare a Self Evaluation Document(SED) and submit it electronically to IQAC cell. The Audit team (Internal & External) phase wise will visit and conduct onsite evaluation through check of documents and interaction with faculties. The HOD of the Department and Head of School will give a presentation in front of the internal & external experts of audit team with respect to the programs offered, faculty list, Technical staff list, Research and Contribution by faculties, Development activities of the Department etc. The audit report will be prepared citing commendation, affirmation and recommendation for each school/unit. The report will be shared with Vice Chancellor/Dean Faculty & Planning/Head of School/Head of Department. The Vice Chancellor/Dean Faculty planning will analyse the data and will make aware to the HOD and faculties about the loop holes and ask for improvement. The Vice Chancellor will finally share the comprehensive report of the Department and faculty members to skill development and technical education, Govt of Odisha.

The audit report comprises of following parameters:

1. General Information: Name of the Dept, Year of Establishment, No of Programmes, Categories of students, No of Faculties, Major features of the Dept etc

2. Curriculum Aspects: Curriculum design and development, Academic Flexibility, Curriculum Enrichment, Feedback System

3. Teaching-Learning & Evaluation: Student Enrolment and Profile, Catering to Student Diversity, Teaching-Learning Process, Teacher Quality, Evaluation Process and Reforms, Student Process and Reforms, Student Performance and Learning Outcomes

4. Research, Consultancy & Extension: Promotion of Research, Resource Mobilization for Research, Research Publication & Awards, Consultancy, Extension Activities & Departmental Social Responsibility, Collaboration

5. Infrastructure & Learning Resources: Physical Facilities, Library as a learning Resource, IT Infrastructure, Maintenance of Campus Facilities

6. Student Support and Progression: Student Mentoring and Support, Student Progression, Student Participation and Activities

7. Governance, Leadership and Management:Department Vision and leadership, Strategy Development and Deployment, Faculty Empowerment Strategies, Financial Management and Resource Mobilization, Internal Quality Assurance System

8. Innovations and Best Practices: Environment Consciousness, Innovations, Best Practices

9. Overall Analysis: Departmental Strengths, Departmental Weaknesses, Departmental Opportunities, Departmental Challenges

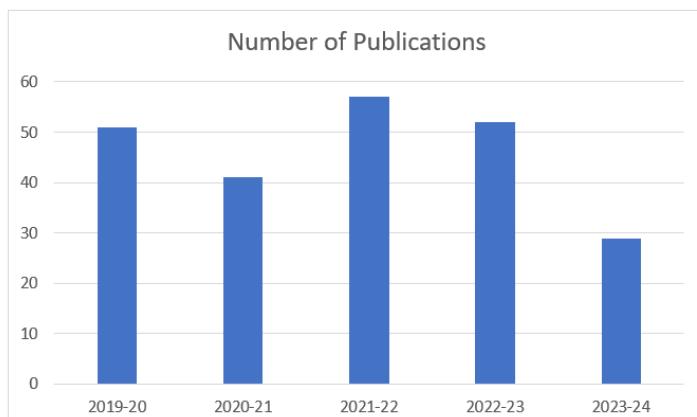10. Recommendation for Quality Enhancement of the Department (To be given by the Experts)

Figure 7.1: Improvement in quality of paper publication

The snap shots taken from the Scopus database showing the current publication status, H-Index, citations and the progress in research publication for the individual faculties is provided for reference.
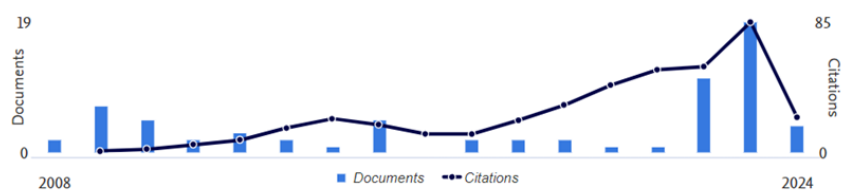
Dhupal, Debabrata

ⓘ VSS University of Technology, Sambalpur, India · ⓢ 22939947500 ⓘ · ⓘⅅ https://orcid.org/0000-0001-9428-294X

959	**75**	**17**	
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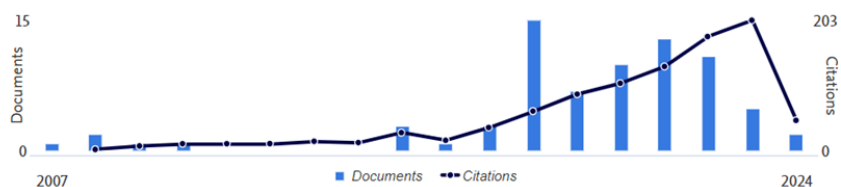
Pal, Kamal

ⓘ VSS University of Technology, Sambalpur, India · ⓢ 35248948000 ⓘ · ⓘⅅ https://orcid.org/0000-0003-2122-6327

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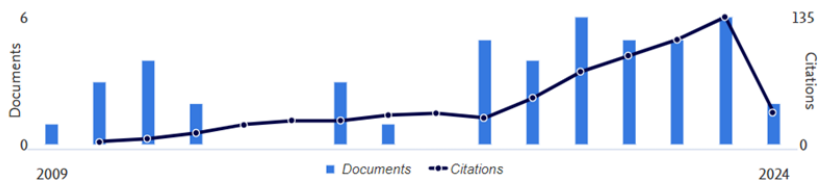
Rout, Arun Kumar

ⓘ VSS University of Technology, Sambalpur, India · ⓢ 58580765200 ⓘ · ⓘⅅ Connect to ORCID   👥 Is this

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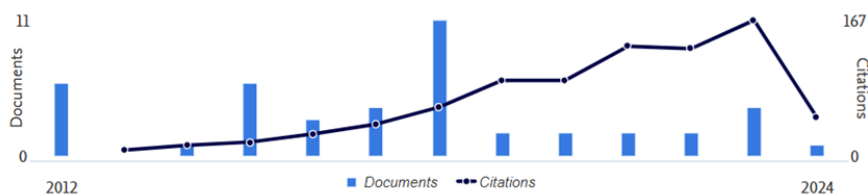
Kund, Nirmal Kumar

ⓘ VSS University of Technology, Sambalpur, India   ⓢⓒ 36521467400 ⓘ   ⒾⒹ Connect to ORCID

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Jena, Pankaj Charan

ⓘ VSS University of Technology, Sambalpur, India   ⓢⓒ 56157124100 ⓘ   ⒾⒹ https://orcid.org/0000-0002-3837-7626

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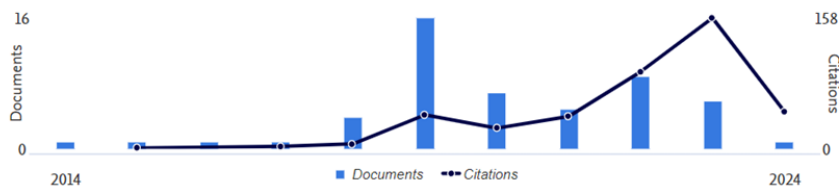
Das, S. R.

ⓘ VSS University of Technology, Sambalpur, India   ⓢⓒ 56446019300 ⓘ   ⒾⒹ https://orcid.org/0000-0003-2723-4459

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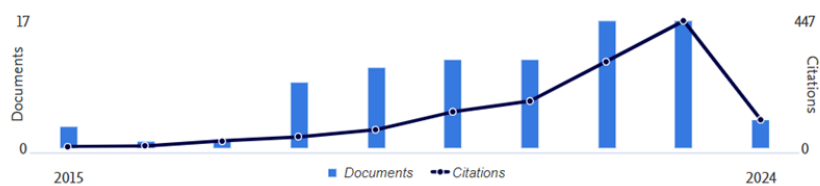
Mahapatra, Trupti Ranjan

ⓘ VSS University of Technology, Sambalpur, India   ⓢⓒ 56539596300 ⓘ   ⓘ https://orcid.org/0000-0001-7567-4323

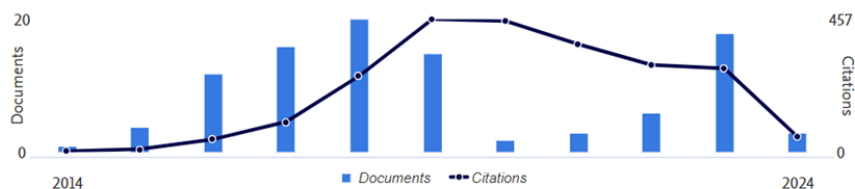| 2,343	100	30	
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Mishra, Lipsamayee

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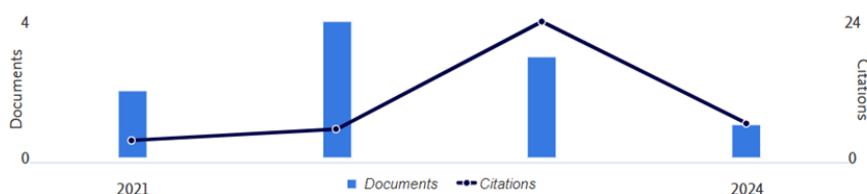
Sahu, Sambeet Kumar

ⓘ VSS University of Technology, Sambalpur, India   ⓢⓒ 58595180300 ⓘ   ⓘⓓ Connect to ORCID   👥 Is this

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Padhan, Smita

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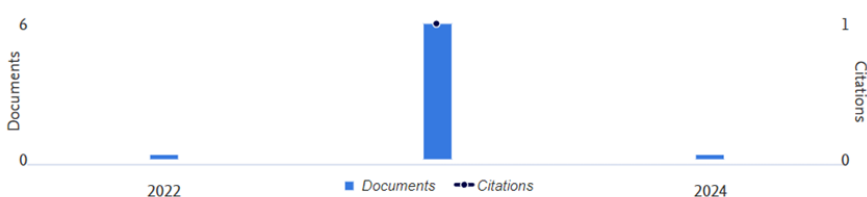| 204	14	9	
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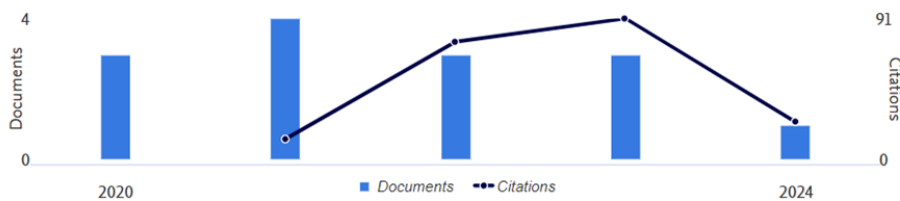
Barik, Birendra Kumar

ⓘ VSS University of Technology, Sambalpur, India   ⓢ 57193893135 ⓘ   ⓘD https://orcid.org/0000-0001-9517-8335

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Document & citation trends

Sethy, Sunita

ⓘ VSS University of Technology, Sambalpur, India   ⓢ 57941413200 ⓘ   ⓘD Connect to ORCID

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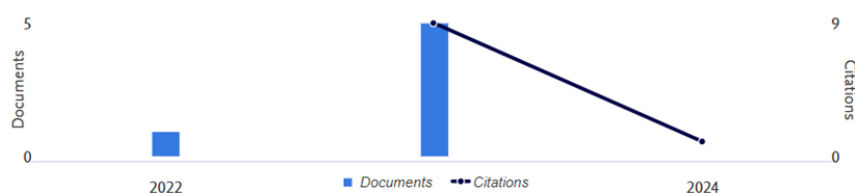
Ekka, Premananda

ⓘ VSS University of Technology, Sambalpur, India　　ⓈⒸ 57211294467　ⓘ　　🆔 https://orcid.org/0000-0001-9042-0727

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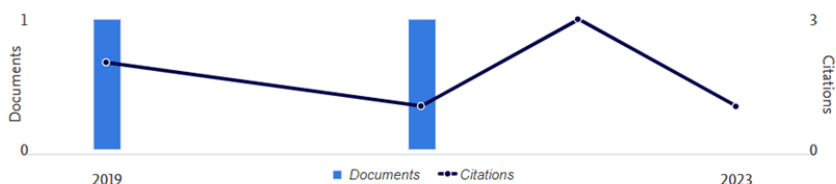
Ekka, Anisha

ⓘ VSS University of Technology, Sambalpur, India　　ⓈⒸ 57223106110　ⓘ　　🆔 Connect to ORCID

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Document & citation trends

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10)　　　　　　Total Marks 10.00

Like other premier institutes of the country, VSSUT has also a well-established Training and Placement (T&P) cell which is a history of multiple decades. The T&P cell of VSSUT is proactive in conducting placement drives for students of the university. As department of Electrical Engineering is among the few branches that is present with the institute since its establishment, therefore alumnae of this department are now working in many prestigious companies, Government sectors, research organizations and academic institutes. Many of them have their own companies also where they are creating employments. As per the placement drives, the T&P cell contact the companies and vice-versa in which the placement team and alumnae work together for healthy number of placements. The placement cell has both student representatives and faculty advisor from each department. Dr. Raseswari Pradhan is now acting as the faculty advisor from department of Electrical Engineering. Various categories of companies are consulting for campus drives. Software companies like Infosys, Wipro, TCS, Cognizant, GLOBAL HITACHI, IBM codeknack, RELIANCE JIO MOBILITY, GenC, KFINTECH, DELOITTE, ASICZEN TECHNOLOGIES etc. are hiring students of Electrical Engineering each year in campus drive. Many high paying companies like Goldman Sachs, Google etc. are also coming for recruitment. Besides that, many core companies like L&T, Vedanta, JSW, Maruti-Suzuki, JSPL, TATA Power, J K Paper, Aqua green, Aditya Birla, SAPOORJI PALLONJI, Shri Mahavir Alloys, ADANI, DCM SHRIRAM etc. are also repeatedly recruiting students of the department. Companies like PRADAN and BIJU has also recruited some students of the department.

For enhancement of employability of the students, T&P cell is conducting many skill development programs like RedHat, Blue Prism, Robotics, Data Analytics, Cybersecurity, AI/ML, Virtual Cloud etc. In addition to this, the students of the department are trained through different workshops in technical writing using LATEX, Use of AI/ML toolboxes of MATLAB software, effective PPT presentation using advanced technologies like ChartGPT etc.

The improvement in Placement, Higher Studies and Entrepreneurship is shown in Figure 7.1.
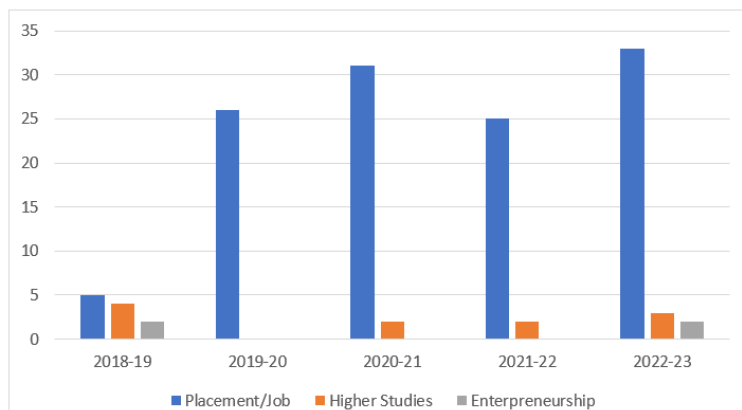
Figure 7.1: Improvement in Placement, Higher Studies and Entrepreneurship

7.4 Improvement in the quality of students admitted to the program (20)

Item		2023-24	2022-23	2021-22
National Level Entrance Examination JEE	No of students admitted	59	34	26
	Opening Score/Rank	156837	218234	278470
	Closing Score/Rank	747076	881424	914504
State/ University/ Level Entrance Examination/ Others NA	No of students admitted	0	0	0
	Opening Score/Rank	0	0	0
	Closing Score/Rank	0	0	0
Name of the Entrance Examination for Lateral Entry or lateral entry details OJEE	No of students admitted	5	4	6
	Opening Score/Rank	347	517	1893
	Closing Score/Rank	524	8326	3603
Average CBSE/Any other board result of admitted students(Physics, Chemistry&Maths)		8.21	8.15	7.85

8 FIRST YEAR ACADEMICS (50)

8.1 First Year Student-Faculty Ratio (FYSFR) (5)

Institute Marks : 5.00

Please provide First year faculty information considering load

Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining	Teaching load (%)			Currently Associated (Yes / No)	Nature Of Association (Regular / Contract)	Date Of leaving(In case Currently Associated is 'No')
							CAY	CAYm1	CAYm2			
Mr. Debasish T	AGZPT5515A	M.E/M.Tech	24/07/2010	Machine Design	Assistant Professor	01/07/2013	0	50	0	Yes	Regular	
Mr. Sasanka S	AMEPD6714G	M.E/M.Tech	10/06/2014	Machine Design and Analysis	Assistant Professor	25/10/2016	0	0	50	Yes	Regular	
RASHMITA SA	DKRPS2656N	M.E/M.Tech	25/09/2010	ANTENNA ENGINEERING	Assistant Professor	02/06/2014	0	50	0	Yes	Regular	
BISWA BINAYA	AKEPM4236A	ME/M. Tech and PhD	21/03/2012	MICROWAVEENGINEERING	Associate Professor	06/01/2006	0	0	100	Yes	Regular	
Dr. Akhyaya K.	AQEPP1214F	M.Sc. and PhD	09/09/2003	Material Science	Associate Professor	16/01/2006	0	0	100	Yes	Regular	
Mr. Prasa	TMGPB6782G	MBA	25/06/2015	MBA	Assistant Professor	28/10/2016	0	100	0	Yes	Regular	
Dr. Jayaprakas	AZCPP8454E	M.A and Ph.D	10/06/2013	Linguistic	Associate Professor	29/05/2014	100	100	100	Yes	Regular	
Dr. Ganeswar N	ADSPN6922H	M.Sc. and PhD	30/12/2010	Ultrasonics	Associate Professor	08/08/2011	100	100	0	Yes	Regular	
Dr Mahendra k	AJAPJ8013D	M.Sc. and PhD	10/06/2008	Numerical Analysis	Associate Professor	13/01/2006	100	0	0	Yes	Regular	
Dr. Smita Padh	CIQPP8982C	ME/M. Tech and PhD	28/03/2023	Production Engineering	Assistant Professor	06/10/2016	100	0	0	Yes	Regular	
Prangya Moha	AWSPM0147J	ME/M. Tech and PhD	26/10/2022	Power Electronics and Drives	Assistant Professor	21/05/2015	100	0	50	Yes	Regular	
Dr Bineeta Sor	CUVPS4674K	ME/M. Tech and PhD	13/11/2023	Power System Engineering	Assistant Professor	29/05/2014	100	0	0	Yes	Regular	
Priya ranjan Ma	AIHPM5467G	M.Sc. and PhD	31/01/2007	Polymer nanocomposite	Professor	07/03/2013	50	50	0	Yes	Regular	
Dr. Sheeja K. L	AIHPL7278C	ME/M. Tech and PhD	02/03/2015	Metamaterial Antennas	Assistant Professor	29/05/2014	100	50	50	Yes	Regular	
Dr. P. K. Pradh	AQMPP0754G	ME/M. Tech and PhD	14/02/2014	Machine Design and Analysis	Associate Professor	30/01/2006	100	50	0	Yes	Regular	
Dr. C. R. Deo	AGJPD3041P	ME/M. Tech and PhD	15/01/2011	Machine Design and Analysis	Associate Professor	05/10/2016	100	0	0	Yes	Regular	
Dr. Pankaj Cha	AEPPJ8939L	ME/M. Tech and PhD	03/02/2016	Mechanical System Design	Associate Professor	04/09/2017	100	0	0	Yes	Regular	
Dr. Jayaprakas	ALRPP6938Q	M.Sc. and PhD	08/12/2003	Numerical Analysis	Professor	21/06/2014	100	0	50	Yes	Regular	

Year	Number Of Students(approved intake strength) N	Number of Faculty members(considering fractional load) F	FYSFR (N/F)	*Assessment=(5*20)/FYSFR(Limited to Max.5)
2021-22(CAYm2)	60	5	12	5
2022-23(CAYm1)	60	6	10	5
2023-24(CAY)	60	12	5	5
Average	60	7	9	5

AverageFYSFR: 0.00

Assessment [(5 * 15) / AverageFYSFR]:   5.00

8.2 Qualification of Faculty Teaching First Year Common Courses (5)   Total Marks 5.00

Institute Marks : 5.00

Year	x (Number Of Regular Faculty with Ph.D)	y (Number Of Regular Faculty with Post graduate Qualification)	RF (Number Of Faculty Members required as per SFR of 20:1)	Assessment Of Faculty Qualification [(5x + 3y) / RF]
2021-22	4	0	3	6.00
2022-23	3	1	3	6.00
2023-24	10	0	3	16.00

Average Assessment: 9.33

8.3 First Year Academic Performance (10)   Total Marks 5.89

Institute Marks : 5.89

Academic Performance	CAYm1(2022-23)	CAYm2(2021-22)	CAYm3 (2020-21)
Mean of CGPA or mean percentage of all successful students(X)	7.46	7.32	7.71
Total Number of successful students(Y)	27.00	17.00	28.00
Total Number of students appeared in the examination(Z)	34.00	23.00	34.00
API [X*(Y/Z)]	5.92	5.41	6.35

Average API[(AP1+AP2+AP3)/3] : 5.89

Assessment = Average API : 5.89

8.4 Attainment of Course Outcomes of first year courses (10)   Total Marks 10.00

8.4.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done (5)

Institute Marks : 5.00

All the courses offered in the first year of the program curriculum are broadly classified into 3 categories with their individual assessment methods:

   1. Theory courses

   2. Sessional courses

Course outcome attainment for each type of course is discussed below.

Course Category	Type of Assessment	Assessment Tools	Marks	Category	CO Attainment type
Theory	Direct	Assignments, Quiz tests (Formative assessments)	20	Cumulative Internal Examination (CIE)	Formative type
		Mid Semester Examination	30	Cumulative Internal Examination (CIE)	Direct CO Att. (70% weightage)
		End Semester Examination	50	Semester End Examination (SEE)	
	Indirect	Course Completion feedback			Indirect CO Att. (30% weightage)

Data Acquisition Process CO attainment of theory courses:

- For direct CO attainment, all the questions of mid-semester and end semesters are mapped with course outcomes during the preparation of the question paper.
- For the indirect CO attainment, semester-end feedbacks are collected by the department to acquire opinions about each CO from the students.
- Final computation of course outcomes attainment is done using direct and indirect Cos attainments through spreadsheets by the concerned faculty. CO attainment information will be compiled by the course coordinators and information passed on to the School Quality Assurance Cell and Program Assessment Committee for subsequent decisions and actions.
- The calculation for attainments is performed after the declaration of end-semester examination results. All documentations related to attainments are maintained by the course coordinators.

8.4.2 Record the attainment of Course Outcomes of all first year courses (5)

Institute Marks : 5.00

The attainment of Course Outcomes for CAYm1 of all first year courses is as follows.

Course	Direct CO Attainment	Indirect CO Attainment	Final CO Attainment	Target CO Attainment	Target achieved (Y/N)
BEE2101	2.58	2.91	2.679	2.55	Y
BPH2101	2.46	2.76	2.55	2.55	N
BHU2102	2.59	2.65	2.608	2.55	Y
BMA2101	2.31	2.87	2.478	2.55	N
BME2101	2.84	2.78	2.822	2.55	Y
BEE2191	2.86	2.63	2.791	2.55	Y
BPH2191	2.75	2.56	2.693	2.55	Y
BME2192	2.79	2.72	2.769	2.55	Y
BHU2191	2.4	2.61	2.463	2.55	N
BEC2101	2.51	2.48	2.501	2.55	N
BCH2101	2.16	2.32	2.208	2.55	N
BCE2102	2.65	2.56	2.623	2.55	Y
BMA2201	2.48	2.34	2.438	2.55	N
BCS2102	2.36	2.42	2.378	2.55	N
BEC2191	2.82	2.78	2.808	2.55	Y
BCH2191	2.76	2.7	2.742	2.55	Y
BCE2192	2.89	2.79	2.86	2.55	Y
BCS2191	2.81	2.69	2.774	2.55	Y

8.5 Attainment of Program Outcomes from first year courses (20)

Total Marks 20.00

8.5.1 Indicate results of evaluation of each relevant PO and/or PSO if applicable (10)

Institute Marks : 10.00

POs Attainment:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BEE21	2.65	2.48	2.46	2.52	2.63	2.32	2.29	2.26	2.52	2.43	2.82	2.62
BPH21	2.62	2.46	2.52	2.42	2.39	2.47	2.46	2.52	2.49	2.53	2.46	2.52
BHU21	2.56	2.52	2.61	2.38	2.29	2.16	2.46	2.50	2.46	2.18	2.06	2.08
BMA21	2.76	2.46	2.72	2.42	2.73	2.72	2.78	2.73	2.76	2.78	2.43	2.42
BME21	2.42	2.52	2.30	1.98	1.96	2.24	2.22	2.36	2.38	2.38	2.42	2.56
BEE21	2.82	2.72	2.42	2.76	2.66	2.64	2.62	2.63	2.48	2.48	2.60	1.48
BPH21	2.44	2.46	2.48	2.42	2.52	2.43	2.44	2.52	2.56	2.45	2.46	2.46
BME21	2.44	2.46	2.39	2.36	2.36	2.48	2.56	2.44	2.36	2.42	2.52	2.55
BHU21	2.42	2.51	2.60	2.52	2.46	2.56	2.48	2.55	2.53	2.55	2.48	2.50
BEC21	2.55	2.46	2.52	2.46	2.48	2.44	2.46	2.38	2.56	2.54	2.48	2.66
BCH21	2.78	2.68	2.65	2.66	2.64	2.68	2.66	2.64	2.66	2.62	2.66	2.68
BCE21	2.44	2.46	2.48	2.55	2.42	2.46	2.44	2.58	2.52	2.36	2.53	2.49
BMA22	2.62	2.58	2.62	2.53	2.52	2.51	2.68	2.72	2.77	2.76	2.46	2.68
BCS21	2.68	2.76	2.59	2.85	2.46	2.74	2.73	2.68	2.55	2.46	2.44	2.42
BEC21	2.64	2.55	2.52	2.54	2.55	2.56	2.44	2.42	2.46	2.53	2.55	2.52
BCH21	2.66	2.64	2.66	2.62	2.62	2.58	2.55	2.54	2.55	2.54	2.52	2.52
BCE21	2.44	2.53	2.52	2.64	2.66	2.19	2.52	2.44	2.46	2.41	2.44	2.36
BCS21	2.26	2.38	2.52	2.48	2.57	2.48	2.46	2.44	2.58	2.72	2.18	2.96

PO Attainment Level

PSOs Attainment:

Course	PSO1	PSO2	PSO3
BEE21	2.62	2.52	2.28
BPH21	2.67	2.58	2.49
BHU21	2.48	2.56	2.62
BMA21	2.56	2.62	2.66
BME21	2.65	2.45	2.54
BEE21	2.52	2.65	2.48
BPH21	2.46	2.58	2.72
BME21	2.76	2.72	2.74
BHU21	2.66	2.68	2.64
BEC21	2.62	2.66	2.58
BCH21	2.66	2.72	2.54
BCE21	2.52	2.58	2.56
BMA22	2.55	2.62	2.48
BCS21	2.68	2.52	2.48
BEC21	2.52	2.58	2.56
BCH21	2.54	2.62	2.52
BCE21	2.48	2.48	2.56
BCS21	2.44	2.52	2.54

PSO Attainment Level

Course	PO1	PO2	PO3
Direct Attainment	2.58	2.59	2.56
PSO Attainment	2.58	2.59	2.56

8.5.2 Actions taken based on the results of evaluation of relevant POs and PSOs (10)

Institute Marks : 10.00

POs Attainment Levels and Actions for Improvement- (2022-23)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	2.4	2.57	The attained value is greater than the targeted value.
Curriculum gap analysed Content delivery modes substantiate The assessment method is confirmed.			
PO 2 : Problem Analysis			
PO 2	2.4	2.54	The attained value is greater than the targeted value.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 3 : Design/development of Solutions			
PO 3	2.4	2.53	The attained value is greater than the targeted value.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2.4	2.51	The attained value is greater than the targeted value.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 5 : Modern Tool Usage			
PO 5	2.4	2.50	The attained value is greater than the targeted value.
Solve problems faced by the students Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 6 : The Engineer and Society			
PO 6	2.4	2.48	The attained value is marginally more than the targeted value.
Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc. Course structure is to be analysed and quality of assessment is to be verified. Plan remedial classes for slow learners.			
PO 7 : Environment and Sustainability			
PO 7	2.4	2.51	The attained value is greater than the targeted value.
Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 8 : Ethics			
PO 8	2.4	2.52	The attained value is greater than the targeted value.
Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 9 : Individual and Team Work			
PO 9	2.4	2.54	The attained value is greater than the targeted value.
Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 10 : Communication			
PO 10	2.4	2.51	The attained value is greater than the targeted value.
Ensure the quality of the assignment, quiz, mid semester and end semester questions Improve in content delivery mode Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			
PO 11 : Project Management and Finance			
PO 11	2.4	2.47	The attained value is slightly greater than the targeted value.
PO 12 : Life-long Learning			
PO 12	2.4	2.47	The attained value is slightly greater than the targeted value.
Rigorously Monitor the progress of class work, syllabus coverage from time to time. Course structure is to be analysed and quality of assessment is to be verified. Plan remedial classes for slow learners Steps to be taken to bridge the curricular gap, improve the content delivery method and content beyond the syllabus may be delivered to the students through teaching, arranging guest lectures, industrial visit, in plant training, online quiz, etc.			

PSOs Attainment Levels and Actions for Improvement- (2022-23)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Identify, formulate design and investigate Production Engineering problems using first principles of mathematics, basic science and engineering.			
PSO 1	2.4	2.58	The attained value is greater than the targeted value.
PSOs must be redefined to a higher objective and/or Modification in the process used to identify extent of compliance of the stated PSOs is suggested. PSOs must be redefined and/or Curriculum Modification/Refinement is suggested.			
PSO 2 : Establish themselves as practicing professionals in core service or research sector or entrepreneurial endeavors by solving real life engineering problems to offer techno-commercially feasible and socially acceptable solutions using contemporary knowledge and tools.			
PSO 2	2.4	2.59	The attained value is greater than the targeted value.
PSOs must be redefined to a higher objective and/or Modification in the process used to identify extent of compliance of the stated PSOs is suggested. PSOs must be redefined and/or Curriculum Modification/Refinement is suggested.			
PSO 3 : Communicate ethically and effectively as well as demonstrate aspiration to learn and ability to handle problems with professional attitude.			
PSO 3	2.4	2.56	The attained value is greater than the targeted value.
PSOs must be redefined to a higher objective and/or Modification in the process used to identify extent of compliance of the stated PSOs is suggested. PSOs must be redefined and/or Curriculum Modification/Refinement is suggested.			

## 9 STUDENT SUPPORT SYSTEMS (50)

Total Marks 50.00

9.1 Mentoring system to help at individual level (5)

Total Marks 5.00
Institute Marks : 5.00

To address the various issues of students a university level committee (SMCC, Student Monitoring and Counselling Committee) has been developed which comprises many senior members of the concerned department. The term of the committee is for 2 years. SMCC will be responsible to address the personal and academic issues of students. They will meet the student representatives in regular intervals. Visit hostels to interact with wardens and students for better well beings of students' stay and food. SMCC can take up any other issues which they deem fit and improve the communication gap among students, faculty, and administration.

Counseling facilities are existing in the Departments. The Head of the Department and the Faculty Advisor (mentors) of the concerned Societies regularly counsel students based on their needs. However, as rightly pointed out, there is no exclusive counseling room available at the department. In addition to the individual chambers of the faculty members, the office chamber of the head of the department is utilized by the mentors during the counseling to the mentees. On department level a list of faculties has been assigned as mentors for the concerned department students. On average there are 20 students under one faculty. Assigned faculties can address various student issues on personal basis. The Tutor-Mentoring system practised in the department level is depicted in the following figure.
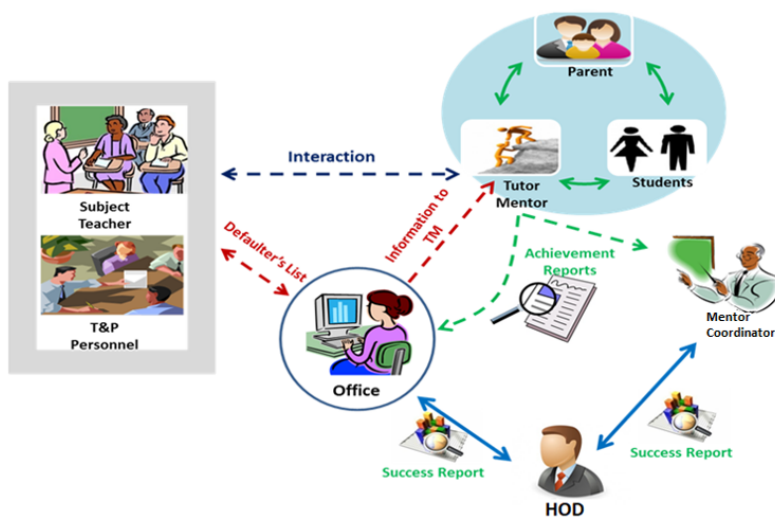
9.2 Feedback analysis and reward /corrective measures taken, if any (10)

Total Marks 10.00
Institute Marks : 10.00

Feedback collected for all courses: **YES**

Average percentage of student who participate: **90**

Feedback collection process:

At the end of each academic session a google feedback form is shared with the students. A student has to fill the required details of himself/herself after that he/she has to rate different traits and aspects of the faculties related to lectures and subject taught. The rating is in the scale of very poor to excellent **(Very poor being assigned a score of 1 and Excellent is assigned a score of 5)**. For each trait or aspect an average has been calculated over the total number of participated students. Finally, an overall average has been calculated over the total number of traits **(1 being the lowest mark and 5 being the highest mark)**. The final awarded mark for the subject will be intimated to the concerned faculties for their reference and necessary improvement. The mapping between chosen option and scored value are as follows:

Trait/ Option	Score value
Very poor	1
Poor	2
Good	3
Very good	4
Excellent	5

9.3 Feedback on facilities (5)

Total Marks 5.00

Institute Marks : 5.00

On each academic session feedback on different aspects of the programme under the concerned department is collected from the students
through **Internal Quality Assurance Cell (IQAC)**. Thereafter necessary corrective actions are taken as per higher authorities' instruction. The different
types of feedback collected by the IQAC are as follows:

- Exit survey (UG/PG)
- Student satisfaction survey
- Program Educational Objectives (PEO) survey

9.4 Self-Learning (5)   Total Marks 5.00

Institute Marks : 5.00

The students are encouraged by the concerned faculties for self-study and exploration of new ideas. To enforce the same, study materials are provided
in the University website under department page for various subjects. Study materials for various subjects are carefully prepared by the concerned
faculties and updated as per requirement. Short term courses are arranged and students from under graduate and post graduates are encouraged to
attend the same. Research lab facilities are there to facilitate the students with necessary equipment to aid their research workflow.

9.5 Career Guidance, Training, Placement (10)   Total Marks 10.00

Institute Marks : 10.00

Industrial visits are arranged to different nearby aluminium and steel plants in order to explore the practical application of theoretical knowledge. Pre-
placement talks are arranged by the university to aid the final year students in their campus drive placement. Multiple webinars by eminent
personalities are arranged to encourage and educate the students about different career options.

9.6 Entrepreneurship Cell   Total Marks 5.00

Institute Marks : 5.00

To educate and encourage entrepreneurship mindset among students **TED TALKS** are arranged in which successful entrepreneurs participate to share
their success journey with the students. For the same reason university level **E-Cell** has been created, which facilitates students' interaction with
successful entrepreneurs.

9.7 Co-curricular and Extra-curricular Activities   Total Marks 10.00

Institute Marks : 10.00

On university level NCC and NSS groups facilities are there, which involves interested students from the department. Sports activities are encouraged
through various sport events. Interested students also join inter college sports fest and necessary approval are streamlined for the same from the
department. Department level fest like 'RESONANCE' is arranged every year to encourage extra-curricular activities among students.

10 GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES (120)   Total Marks 120.00

10.1 Organization, Governance and Transparency (55)   Total Marks 55.00

10.1.1 State the Vision and Mission of the Institute (5)   Institute Marks : 5.00

VISION

To emerge as an internationally acclaimed Technical University to impart futuristic technical education and creation of vibrant research enterprise to create quality engineers and researchers, truly world class leader and unleashes technological innovations to serve the global society and improve the quality of life.

MISSION

The Veer Surendra Sai University of Technology, Odisha, Burla strives to create values and ethics in its products by inculcating depth and intensity in its education standards and need based research through

· Participative learning in a cross-cultural environment that promotes the learning beyond the class room.

· Collaborative partnership with industries and academia within and outside the country in learning and research.

· Encouraging innovative research and consultancy through the active participation and involvement of all faculty members.

· Facilitating technology transfer, innovation and economic development to flow as natural results of research where ever appropriate.

· Expanding curricula to cater broader perspectives.

· Creation of service opportunities for upliftment of the society at large.

10.1.2 Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (25)   Institute Marks : 25.00

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY
BURLA, SAMBALPUR, ODISHA

**University Development Plan
to Transform into a
Multi-Disciplinary
Engineering & Research
University (MERU)**

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY BURLA
ODISHA – 768 018, INDIA
**October 2022**

1.PREAMBLE

VSSUT Burla was established in 1956 as an engineering college in the name of the University College of Engineering (UCE) to solve a problem in society. As Hirakud Dam, independent India's first multi-purpose river dam was commissioned, there was a need for home-grown engineers to operate and maintain the dam that was meant to control flood, the powerhouse to generate power and a canal system to irrigate vast tract of land.

In the span of 66 years, the University has produced over 40,000 alumni. It has dedicated itself to the infrastructure, industrial growth, and socio-technical development of the state and nation as a whole. The roads, ports, dams, power plants, transmission lines, industries, irrigation projects, and rural electrifications are built-in Odisha with the overwhelming participation of its alumni. It has been playing a key role in the rural and urban developmental programs of the region; it is the central monitoring center for the State Government's programs such as Pradhan Mantri Gramya Sarak Yojana (PMGSY), Watershed projects, etc. Its alumni can be seen in the Boardrooms of leading PSUs and private companies; they occupied top positions in the Indian Army / Navy / Air Force, DRDO, and ISRO; they are on the faculty boards of almost all IITs, NITs, and many foreign Universities.

The University has carved a name for itself for its undiluted and uncompromising approach to education and the intensity of its teaching. In recognition of its contribution to society, the State Government upgraded it to a technical university in 2009. Presently, in addition to its rich undergraduate programs, it has preserved the strong legacy of research culture in terms of Post-graduate and research programmes in all disciplines of science and engineering.

2.VSSUT – THE JOURNEY SO FAR
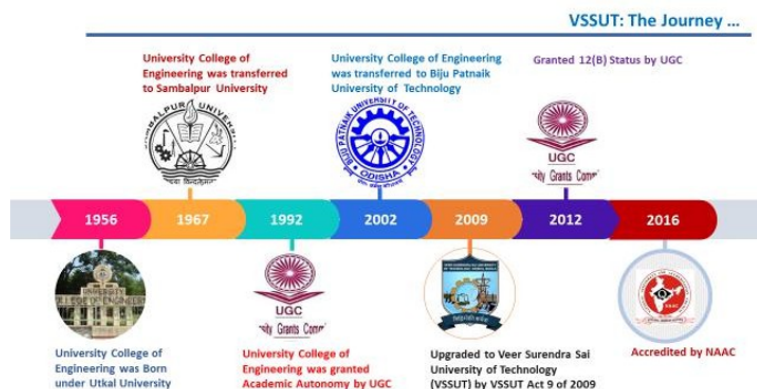
The legendary institute had made a modest beginning in 1956 by taking 30 students each in three departments, viz Civil, Electrical & Mechanical, operating from the make-shift workshop of the Hirakud Dam. VSSUT presently offers 10 B.Tech., 22 M.Tech., B.Arch., MCA, and 3 M.Sc. programs, and details with seat strength are attached as **ANNEXURE-1**. Almost all B.Tech. programs are NBA accredited and rests have been applied for accreditation. Today, its students intake is 1644 in B. Tech, M. Tech, M Sc, MCA, Ph. D. and the total student strength on the campus is 4956.

In addition, 150 Research Scholars are pursuing their Ph. D. in various disciplines. VSSUT has been identified as the nodal center of the AICTE Quality Improvement programme for pursuing Ph.D. and also as the center for National Doctoral Fellowship (NDF) Scheme by AICTE. Ph. D. students are enrolled under the NDF scheme from 2018-19.

3.THE SWOT ANALYSIS

STRENGTHS

1. Undiluted academic standards for 66 years
2. Strong and worldwide Alumni network
3. Performing students – beating IIT / NIT students in national-level competitions.
4. Adequate quality faculty

WEAKNESSES

1. Inadequate, aged Infrastructure
2. Outdated Lab equipment, software
3. Absence of specialized R & D labs
4. Inadequate IPR, Sponsored Research & Consultancy
5. Inadequate student recreation facility
6. Weak academic Outreach

<table>
<tr><td>THREATS</td><td>90oOPPORTUNITIES</td></tr>
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1. Inadequate funding for an institute as vast in infra & student base as IIT, or NIT - leading to fast degradation	1. Massive industrialization in Odisha asking for more quality engineers
2. Peer institutes growing in size	2. ~ 300 Acre Land for expansion
3. Reluctance of companies to visit a remote place like Burla for Placement	3. Surrounded by institutes & industries
	4. Attitude of students toward Rocketry, product development, Entrepreneurial spirit, Incubation

4. WINGS OF TRANSFORMATION AT VSSUT

In line with the Nation Education Policy -2020, VSSUT plans to expand its wings in line with a large-scale Multidisciplinary Education and Research University (**MERU**) to serve a larger mass of students of Odisha who are aspirants to pursue quality education at an affordable cost.

a. Increased intake at B. Tech. Level

VSSUT aspires to offer more B.Tech. Programs that are relevant in today's time and increase the student strengths in excess of 10,000 on the campus by 2028.

Programs	Current position in 2022		Projection by 2028	
	Intake	Students Strength	Intake	Students Strength
B. Tech. + B. Arch.	996	3810	2083	8332
M. Tech.	396	792	396	792
M.Sc. (2 yrs)+MCA	102	204	120	240
Ph.D.	150	150	500	1500
TOTAL	**1644**	**4956**	**3116**	**10,864**

b. Projection for other performance parameters

Parameters	Present	By 2028
On-time Graduation	85%	95%
GATE/ NET Coverage	40%	60%
Career & Placement	80%	95%
Innovation & Incubation	05	10 per year
Technology	CTTC ISRO	AI, Data Science, ML, Healthcare, Robotics and Automation, Modern Manufacturing
NIRF Ranking	116	Top 50 in India
NBA Accreditation	10 UG Courses 03 PG Courses	All UG & PG courses
NABL Accreditation	-	10 Labs
New Programs	02	11 UG and 5 PG programs
Faculty Hiring	220	550 (1:15 as per AICTE norms)

c. Multi-Disciplinary Character

Subsequently, besides Engineering and Sciences, it aspires to open a School of Medical Technology on one campus – making it a true **Multi-Disciplinary Institute**.

d. Skill Development Centre

VSSUT aspires not only to produce quality graduates in Engineering, and Medical Technology but also wants to open its laboratory facilities, faculties, and innovative students to equip the Diplomas and ITIs of Odisha with the necessary skills to be entrepreneurs or be Industry- ready.

e. Setting up R&D Laboratories in association with Industries

VSSUT aspires to be a cutting-edge Research Centre in association with MCL, Vedanta, Hindalco, and TPWODL. The lab will be dedicated to develop solutions by our faculty and students. It will also help to have result-oriented collaboration with the industry.

5.Step by Step Methodology for Execution

a. Creation of various Schools (in the immediate term)

For optimum sharing of knowledge and resources such as faculties, laboratory facilities. Conferences etc., it is envisaged to put together a similar family of departments, e.g. Computer Science and Engineering, IT, MCA are clubbed under the School of Computer Science and Engineering; Mechanical Engg, Manufacturing, Production, Metallurgy, etc. are clubbed under School of Mechanical Science. Each school will be operated from a single building, be headed by a Dean. This will de-centralize the control of VC and bring tremendous synergy among departments.

Sl#	Name of the School	Name of the Branch
1	Computer Science and Engineering	Computer Science & Engineering
		Computer Science & Engineering (Artificial Intelligence & Machine Learning)
		Computer Science & Engineering (Data Science)
		Computer Science & Engineering (IoT)
		Computer Science & Engineering (Cyber Security)
		Information Technology
2	Electrical Sciences	Electrical Engineering
		Electrical & Electronics Engineering
		Electronics & Communication Engineering
3	Mechanical Sciences	Mechanical Engineering
		Production Engineering
		Aerospace Engineering
		Industrial Engineering & Management
		Metallurgical & Materials Engineering
4	Infrastructure & Planning	Civil Engineering
		Bachelor of Architecture
		Bachelor in Planning
5	Chemical and Bio Sciences.	Chemical Engineering

		Petroleum Engineering
		Biotechnology
6	Earth & Environmental Sciences	*Mining Engineering*
7	Humanities and Basic Sciences	Physics, Chemistry, Mathematics, *Life Science*

Note: Those depts. in Italic & Bold are proposed new departments

The yearly intake in existing as well as newly opened UG programs, will be **2083** as shown below and the total student strength including PG and Ph.D. will be more than 10,000 in the campus.

Sl#	Name of the branch	Intake (with EWS)	GIN	TFW (5%)	Lat Ent (10%)	Total
1	*Computer Science & Engineering*	*120 +30*	*1*	*6*	*12*	*169*
2	*Computer Science & Engg (AI&ML)*	*60+15*	*0*	*3*	*6*	*84*
3	*Computer Science & Engg (Data Science)*	*60+15*	*0*	*3*	*6*	*84*
4	*Computer Science & Engg (IoT)*	*60+15*	*0*	*3*	*6*	*84*
5	*Computer Science & Engg (Cyber Security)*	*60+15*	*0*	*3*	*6*	*84*
6	**Information Technology**	**60+15**	**0**	**3**	**6**	**84**
7	**Electrical Engineering**	**120+30**	**2**	**6**	**12**	**170**
8	**Electrical & Electronics Engineering**	**60+15**	**0**	**3**	**6**	**84**
9	**Electronics & Tele-Communication Engg**	**120+30**	**2**	**6**	**12**	**170**
10	**Mechanical Engineering**	**120+30**	**3**	**6**	**12**	**171**
11	*Production Engineering*	*60+15*	*0*	*3*	*6*	*84*
12	*Aerospace Engineering*	*60+15*	*0*	*3*	*6*	*84*
13	*Industrial Engg & Management*	*60+15*	*0*	*3*	*6*	*84*
14	*Metallurgical & Materials Engineering*	*60+15*	*0*	*3*	*6*	*84*
15	**Civil Engineering**	**120+30**	**2**	**6**	**12**	**170**
16	**Bachelor of Architecture**	**40+10**	**0**	**2**	**0**	**52**
17	*Bachelor in Planning*	*60+15*	*0*	*3*	*6*	*84*
18	**Chemical Engineering**	**60+15**	**0**	**3**	**6**	**84**
19	*Biotechnology*	*60+15*	*0*	*3*	*6*	*84*
20	*Mining Engineering*	*60+15*	*0*	*3*	*6*	*84*
	J&K Quota		**5**	**0**	**0**	**05**
	TOTAL	**1480+370**	**15**	**74**	**144**	**2083**

Note: Those depts. in Italic & Bold are proposed new departments

b. **Creation of Centres of Excellences - (in Immediate Term)**

Quantity is a critical mass, but quantity alone does not make a good University; Research must strive on the campus and new products/solutions must be evolved to serve the society. In line with this goal, each school will have more than one center of excellence (COE). The CoEs will be based on society-relevant areas like IoT, Augmented Reality/Virtual Reality, Steel making etc. COEs will facilitate research in the frontier areas where faculty and students will work on real-life industry problems. Further, these COEs will work on developing cost-effective products for the benefit of the community. The incubation and innovation cell will be strengthened further to attract more innovative projects like one existing from ISRO.

A striking feature is – each of these CoEs will have partnerships with a few industries in the same field and will have a few Alumni as mentors.

CoEs under the School of Computer Science and Engineering		
Centres of Excellence	**Industry Mentor (Alumnus)**	**Proposed Industry Partnership**
IoT	*Sambit Patra (IoT, Intel)*	*IBM, Intel, Sankalp Semiconductors*
Block Chain	*Manish Sinha (Niti Aayog), Debjani Mohanty (Collabera)*	*Tech Mahindra, Deloitte*
AI & ML	*Rakesh Barik (Deloitte), Dhirendra Bhupati (Microsoft, USA)*	*NVidia, Deloitte, Microsoft, Google*
AR & VR	*Dhiraj Sinha (Capgemini)*	*Capgemini*

CoEs under the School of Electrical Sciences		
Centres of Excellence	**Industry Mentor (Alumnus)**	**Proposed Industry Partnership**
Power Generation	*Jaydev Nanda (Adani Power)*	*NTPC, OPGC, OHPC*
Insulation Integrity	*Ashesh Padhy (JSW)*	*NTPC, OPGC, OHPC*
Semiconductor & VLSI	*Anup Nayak (USA)*	*Qualcomm, Intel, Foxconn*
Power Electronics	*RP Sasmal (Ex-PGCIL), Sudhansu Kannungo (Schinder Electric)*	*ABB, Honeywell, Schinder Electric, Siemens*
Communication, 5G	*Pramod Panda (BSNL), Sasi Panda (CISCO, USA), Manoj Mohanty (JIO)*	*JIO, Siemens, Samsung, CISCO*
Drone Technology	*Om Prakash (IG Drones)*	*IG Drones*

CoEs under School of Mechanical Sciences

Centres of Excellence	Industry Mentor (Alumnus)	Proposed Industry Partnership
Robotics & Mechatronics	Naveen Gupta (Merc Benz)	L&T,ABB, Honeywell, Fanuc
Welding Technology	Rashmi Mohapatra (Teams)	Kempee
Smart Manufacturing (Industry 4.0)	Sibhasis Maity (Ex-CTTC)	L&T, Tata Steel
Automotive & EV	Tapan Sahu (Maruti Suzuki)	Maruti
Space Technology	Bijan Das (Ex-ISRO), Binay Das (DRDO ECS)	ISRO, DRDO
Tribology, Vibration analysis	Rakesh Das (Tata Auto Components), Sushant Panda (IIT Kharagpur)	SKF, Tata Technologies

CoEs under the School of Infrastructure and Planning		
Centres of Excellence	Industry Mentor (Alumnus)	Proposed Industry Partnership
Rural Development & Sustainable Technology	Sutapa Pati (Xavier School of Sustainability), Alok P	XIMB, Bhubaneswar
Smart City Design	JK Kapoor (Centre of Town Planning)	GoO, GoI, KPMG, EY, Deloitte, JUSCO
Smart Irrigation	Nanda Mohapatra (Ex-DoWR)	DoWR
Sustainable Habitat Planning	J K Kapoor	Housing and Urban Affairs, GOI

CoEs under the School of Earth & Environmental Sciences		
Centres of Excellence	Industry Mentor (Alumnus)	Proposed Industry Partnership
Mineral Processing	Ashesh Padhy (JSW)	JSW Steel, Roongta
Steel Making	SS Mohanty (Ex-SAIL)	Tata Steel, JSPL, Arcelor Mittal
Aluminum Making	SB Nayak (Ex-NALCO), JK Mohanty (Ex-Vedanta), Athar Shahab (Ex-Vedanta)	Vedanta, Aditya Aluminum, NALCO
Disaster Management		DoWR, NDRF

CoEs under the School of Chemical & Bio Sciences		
Centres of Excellence	Industry Mentor (Alumnus)	Proposed Industry Partnership
Bio-Medical Engg		VIMSAR
Petroleum Engg.		IOCL

| CoEs under the School of Humanities & Basic Science		
Centres of Excellence	Industry Mentor (Alumnus)	Proposed Industry Partnership
Nuclear Science		BARC, NPC
Tribal Welfare		
Environment		

c. **Skill Development Centre (in Immediate Term)**

VSSUT has a plan to establish a Skill Centre to train the unemployed Diploma/ITI/ Matriculates in Welding, Drone survey, Automobile, Transformer Repair and Design, Textile Fabric design, Medical Technology, and Apparel design to make them industry-ready and inculcate the spirit of entrepreneurship. Our own students and faculty will impart training to these employable youth of Odisha.

d. **Adding School of Medical Technology (in the Long term)**

After the Campus is expanded and the Engineering stream is consolidated, the next step would be to use the existing Academic building for opening a Medical College to roll out at least 1000 doctors a year. VSSUT School of Medical Technology will collaborate with VSSUT

School of Engineering to produce cutting-edge products such as artificial limbs, artificial respirators, Robot-based based surgery, quick tests for Cancer, etc. At the same time, VSSUT School of Medical Science will derive synergy from nearby VIMSAR to produce cutting-edge research.
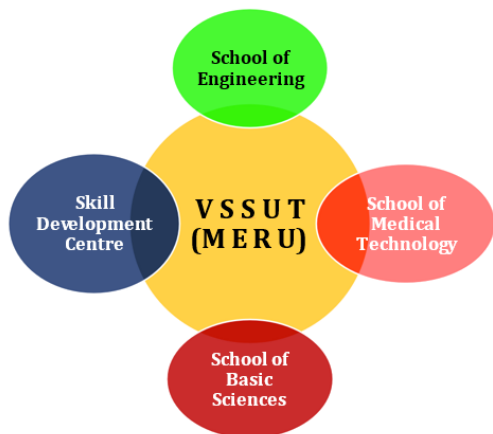
6.ADDITIONAL INTAKE VIS-À-VIS OPERATIONAL EXPENDITURE

a. **Graceful increase of Intake from 2022-28**

Academic Year	Sanctioned Intake	Increase in Intake	Cumulative Intake
2022-23	120	140	**140**
2023-24	120	140	**280**
2024-25	120	140	**420**
2025-26	120	140	**560**
2026-27	120	140	**700**
2027-28	140	160	**860**
2028-29	200	240	**1100**
TOTAL	**940**	**1100**	

b. **Operating Expenses of Faculty, Non-Teaching Staff, and Teaching Assistants (TAs)**

Due to an increase in intake of 1100 B.Tech. students, the faculty requirements will be 188 as per AICTE norms with STR 1:20. However, the faculty requirement will be optimized to 127 by adopting the following:

i. Large classrooms of size 150 with advanced ICT facilities

ii. Lab size to accommodate 60 students in one slot to optimize Technical Assistants

iii. Engage TAs with M.Tech. who will pursue Ph.D. and will be trained in Teaching- Learning to produce quality teachers of the future.
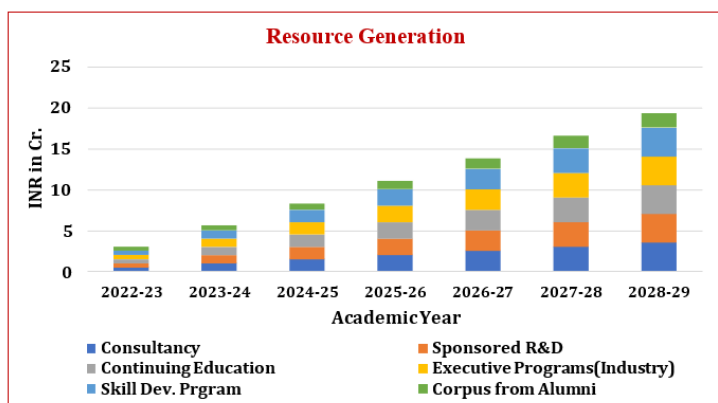
Accordingly, the OPEX is computed for the need of faculty, Non-teaching staff, and TAs as,

Academic Year	Incr Intake	Faculty 01:20	Faculty Added	Staff added	TAs M.Tech.	Faculty Salary(Cr)	Staff Salary	TAs salary(Cr)	Total OPEX(Cr)
2022-23	120	24	15	6	5	2.88	0.36	0.3	**3.54**
2023-24	120	24	30	12	10	5.76	0.72	0.6	**7.08**
2024-25	120	24	45	18	15	8.64	1.08	0.9	**10.62**
2025-26	120	24	60	24	20	11.52	1.44	1.2	**14.16**
2026-27	120	24	75	30	25	14.4	1.8	1.5	**17.70**
2027-28	140	28	95	36	30	18.24	2.16	1.8	**22.20**
2028-29	200	40	127	42	35	24.384	2.52	2.1	**29.00**

c. **Increase in Operating Expenses year-wise due to the successive increase in intake**

Head	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
House Keeping	0.24	0.48	0.72	0.96	1.2	1.44	1.75
Security Services	0.24	0.48	0.72	0.96	1.2	1.44	1.75
Gardening	0.24	0.48	0.72	0.96	1.2	1.44	1.75
Electricity Charges	0.24	0.48	0.72	0.96	1.2	1.44	1.75
Salary	3.54	7.08	10.62	14.16	17.70	22.20	29.00
Total OPEX	**4.26**	**8.52**	**12.78**	**17.04**	**21.3**	**26.52**	**34.25**

d. **Resource Generation**

(e) **Comparative Analysis**

Additional Intake

OpEx (Salary)

OpEx (Recurring)

Internal Resource Generation
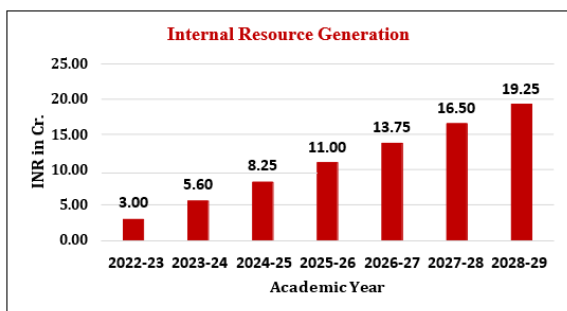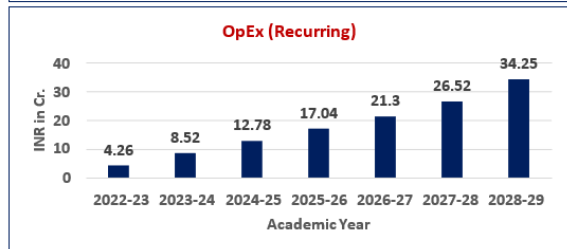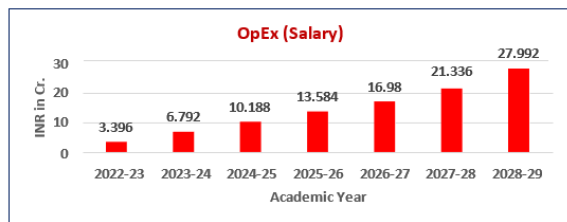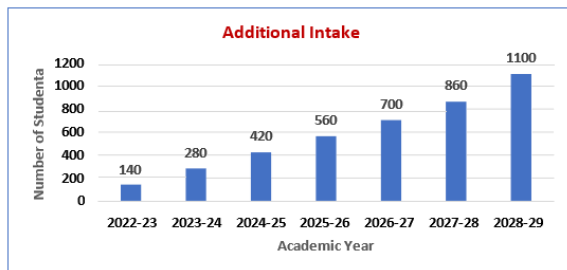
7.INFRASTRUCTURE REQUIREMENT

Presently, the university has 143 acres of land out of which the existing buildings (academic, residences, and hostels) are in 95 acres and 48 acres are available. Another 80 acres of land in continuum to the existing campus has been identified and requested for transfer. If the proposed 80 acres will be available, a total of 128 acres would be used for expansion as per IDP submitted.

The existing public road bifurcates the existing campus and is used by the students, staff, and faculty to commute to academic campus from hostels and residences respectively. During the peak academic hour, there always exists high risk of accidents as it happened many a times in the past, where students have sustained major injuries. With the implementation of the IDP, the student strength would be doubled and so also the risk. Hence, it is suggested to reroute the said public road outside VSSUT premises on the bank of the power channel. It may be further noted that SDA has planned a ring road, which would bisect the proposed extended campus of VSSUT (80 acres). Hence, it is also requested to realign the proposed ring road in the similar fashion to outside the proposed extended campus of VSSUT.

It will enable to have a monolithic and integrated campus like other institutes of repute, eliminating the public trespass and thoroughfare.

This layout envisions:

- There will be seven Schools out of which three Schools (Electrical Sciences, Earth & Environment Sciences, Infrastructure and Planning (partially)) would be operating from the existing Academic Building. This existing academic building will also operate as Skill Development Centre to impart skills to the Diplomas, ITIs, and unemployed youth. There will be a classroom complex and a laboratory complex.
- A new campus would be created in the proposed new land. It has been planned as a Heritage Campus. This will have 4 nos. of G + 4 buildings (provision for 5 buildings) of equal size and shape, the design is inspired by the Konark Wheel. The balance 4 Schools (Computer Science, Chemical and Bio Sciences, Mechanical, and Civil) will operate from this new campus. Each School will be headed by a Dean; a single building will encompass the classrooms, laboratories, Centre of Excellence, Conference Halls, Faculty chambers related to the one School.
- The Vice Chancellor's office would be in easy accessible location to all Schools, and will house the Registrar & his / her office, CFO & his / her office, Examination Section, Administrative Section, Establishment Section, etc.
- All other academic elements e.g. the Library complex, Training & Placement, Central Research Centre, Convention Centre, Workshop with state-of-art Fab Lab, etc will come around this Central Plaza.
- All other amenities such as additional hostels, Auditorium, Students Activity Centre, Food Plaza, Shopping Centre, Indoor Sports Stadium, Guest House etc. will come at suitable locations in proximity to the Central Plaza.
- The new high-rise G + 10 residences faculties, non-teaching staff, Club House etc. will come at the existing colony after demolishing the 60-years old and heavy- maintenance-prone residences.
- Adequate allocation shall be made to renovate old academic buildings, and old hostels, as well as revamping of Laboratory equipment.
- It is presumed that it would take 5 years to complete the above works. Once completed, the existing but renovated building shall be released to open a School of Medical Technology (50 students a year, a total strength of 250).
- Establishment of CoEs in schools

Sl#	Centres of Excellences	Sl#	Centres of Excellences
1	IoT	15	Automotive & EV
2	Block Chain	16	Space Technology & Rocketry
3	Artificial Intelligence & Machine Learning	17	Tribology & Vibration Analysis
4	Augmented Reality & Virtual Realty	18	Mineral testing
5	Quantum Computing	19	Steel Making
6	Power Generation	20	Aluminium Making
7	Insulation Diagnostic Testing	21	Disaster Management

8	Semiconductor & VLSI	22	Rural Development & Sustainable Technology
9	Power Electronics	23	Smart City Design
10	Communication, 5G	24	Smart irrigation
11	Drone Technology	25	Biomedical Engineering
12	Robotics & Mechatronics	26	Petroleum Engineering
13	Welding Technology	27	Nuclear Science
14	Manufacturing & Additive Technology		

The Land structure (Existing + Proposed)

The Proposed new Infrastructure

(a) Academic Schools

(b) Laboratory Complex

(c) Smart Classroom Complex

(d) Residential facility for faculty & Staff

Total estimated cost for this scheme is **INR 2000 Crores**. The detail cost estimates along with implementation plan is given in **ANNEXURE – 2**. It may be noted that a cost estimate of Rs 4000/- is used per sqft unless otherwise stated specifically.

ESTIMATED BUDGET

Sl#	Particulars	Area in sqft	Cost	Total
	SCHOOLS, Admin, Classrooms & Lab Complex			**622**
1	School of Computer Engg + furniture+ Acs	5 x 35,000	84	
2	School of Mechanical Engg+ furniture+ Acs	5 x 35,000	84	
3	School of Chemical and Biosciences+ furniture+ Acs	5 x 35,000	84	
4	School of Humanities & Basic Sc.(first-year classes labs)	5 x 20,000	50	
5	School of Infrastructure and Planning+ furniture+ Acs+ Existing Bldg	5 x 25,000	60	
6	School of Earth and Environmental Sc.+ Furniture+ Acs	-	10	
7	School of Electrical Engg+ furniture+ Acs	-	14	
8	Office of VC (+ Admn, Fin. Exam)	5 x 25,000	60	
9	Classroom Complex+ furniture+ Acs	5 x 40,000	88	
10	Laboratory Complex+ furniture+ Acs	5 x 40,000	88	
	RESIDENCES Faculty & Staff			**400**
1	Faculty Residence: 500 qtrs: 1400 Sqft	7,00,000	280	
2	Non-teaching Staff: 250 qtrs: 1200 Sqft	3,00,000	120	
	HOSTELS for 7100 students			**575**
1	1000 Capacity 7 Hostels @ 80 Cr per Hostel	-	560	
2	50-room married accommodation	50x450	10.4	
3	50-room Foreign students	50x200	4.6	
	CAPEX for Academic Elements			**153**
1	Fab Lab and state-of-art Workshop (CNC m/c, Laser cutters, 3D printers, lathe, drilling)	50,000	20	
2	Library Complex, 2000 seating	40,000	16	
3	Establishment of **CoEs (**Equipment, Software)		70	
4	Training & Placement Complex, Online Exam – 1000, 10 rooms for Interview, Gallery – 500	30,000	12	
5	Central Research Facility (CRF)	25,000	10	
6	Convention Centre, Gallery halls – 2000, 1000	60,000	25	
	CAPEX for Co-Curricular and Extra-Curricular Amenities			**134**
1	Auditorium (6000 Students), @10,000/-	30,000	30	
2	Students Activity Centre	60,000	24	
3	Food Complex Cum Shopping Centre (5x200 Seats)	25,000	10	
4	Guest House with 100 rooms (20 suits)	50,000	20	

5	Indoor and outdoor Sports facilities (5000 Students) @5000/-	1,00,000	50	
	RENOVATION of old buildings and laboratories:			**56**
1	Repair of 6 old hostels (65 yrs old)		6	
2	Repair of the academic building		25	
3	Upgradation of aged outdated Lab equipment		25	
	CAPEX for additional Components:			**60**
1	Land Grading, Roads, Drains, Horticulture	-	50	
2	Dedicated 33 KV Power Supply	-	10	
	Grand Total		**2000**	**2000**

8.CONCLUDING REMARKS

The undiluted teaching ethics, great learning culture, alumni performance, and competitive attitude of the students have earned VSSUT (formerly UCE) its place among the ivy club of IITs, NITs, IISc, or IIEST Shibpur – despite the fact that it is a State-funded institution. In Odisha, it is the only Government Engineering Institute that has a NIRF rank of 111 (only Govt institute behind NIT Rourkela and IIT Bhubaneswar).

When State is poised for unprecedented growth in industry and economy under the leadership of our visionary Chief Minister, VSSUT aspires to play a key role in this growth story by becoming a multi-disciplinary University (MERU). It envisions to be a **Factory** not only for Engineers but also to become a **Skill Development Centre** for ITIs & Diplomas of the zone for improvement in their employability and entrepreneurship. Further, it wants to become a **Diagnostic Centre for** the Industries, a breeding ground for **Low-Cost Revolutionary** products, and a **Nodal Centre** for developing schemes for Rural and Urban Odisha.

ANNEXURE- 1

Programs Offered at VSSUT at present

A. 4 Years B.Tech. Programme (Full Time) (All AICTE Approved)

SL#	Name of the branch	Year of Starting	Sanctioned Intake				
			Intake	GIN*	TFW	LE***	Total
1.	Civil Engineering A	1956	90+30*	02	06	9+3*	140
2.	Chemical Engineering	2014	60	-	03	6	69
3.	Computer Science & Engineering A	1994	30+30*	01	03	3+3*	69
4.	Electrical Engineering A	1956	120	02	06	12	140
5.	Electrical & Electronics Engineering	2010	30+30*	-	03	3+3*	69
6.	Electronics & Telecomm. Engineering A	1972	120	02	06	12	140
7.	Information Technology A	2003	60*	-	03	6	69
8.	Mechanical Engineering A	1956	120	03	06	12	141
9.	Metallurgical & Materials Engineering	2013	60	-	03	6	69
10.	Production Engineering A	1996	30+30*	-	03	3+3*	69
	TOTAL		**840**	**10**	**42**	**84**	**976**

(* *Self-sustaining programme **GIN – Govt. of India Nominee*

*** LE – Lateral Entry of Diploma holders in 2nd year. A NBA Accredited TFW – Tuition Fee Waiver)*

B. 5 Years B.Arch. Programme (Full Time)

SL#	Name of the branch	Year of Starting	Sanctioned Intake				
			Intake	GIN*	TFW	LE***	Total
1.	Architecture	2013	20	-	-	-	20

C. 5 Years Integrated UG & PG Dual Degree Programme (Dropped wef 2022)

SL#	Department	Name of the Specialisation	Year of Starting	Sanctioned Intake
1.	Civil Engineering	B.Tech. in Civil Engg & M.Tech. in Structural Engg.	2015	18
2.	Electrical Engg.	B.Tech. in Electrical Engg. & M.Tech. in Power System Engg.	2015	18
		TOTAL		**36**

D. 2 years M.Sc. Programme (Full Time)

SL#	Name of the Course	Specialisation	Year of Starting	Sanctioned Intake
1.	M.Sc. (Physics)	Applied Physics	2010	18
2.	M.Sc. (Chemistry)	Industrial Chemistry/ Organic Chemistry	2010	36
3.	M.Sc. (Mathematics)	Applied Mathematics	2011	18
	TOTAL			**72**

E. 5 Years Integrated M.Sc. Programme (Full Time)

SL#	Name of the Specialisation	Year of Starting	Sanctioned Intake
1.	Chemistry	2013	18
2.	Physics	2014	18
3.	Mathematics	2015	18
	TOTAL		**54**

F. 3 Years MCA Programme (Full Time)

SL#	Name of the Specialisation	Year of Starting	Sanctioned Intake
1.	Master in Computer Applications	1993	30

G. 2 Years M.TECH. Programmes (Full Time)

SL#	Department	Name of the Specialisation	Year of Starting	Sanctioned Intake
1.	Civil Engineering	Water Resources Engg A *	1969	18
		Structural Engineering A *	1969	18
		Transportation Engineering *	1975	18
		Geo-technical Engineering *	2012	18
		Environmental Science & Engineering	2012	18
2.	Electrical Engg.	Power System Engineering A *	1969	18
		Power Electronics Control & Drives *	2011	18
		Control & Instrumentation *	2015	18
3.	Mechanical Engg.	Machine Design & Analysis A *	1972	18
		Heat Power Engineering *	1972	18
		Production Engineering A *	1972	18
4.	Electronics & Telecomm. Engg.	Communication Systems A *	1995	18
		VLSI Signal Processing *	2012	18
		Microwave Engineering	2015	18
5.	Computer Science & Engg.	Computer Science & Engg. A *	2008	18
6.	Production Engg.	Manufacturing Systems Engineering *	2008	18
		Robotics & CAD-CAM*	2015	18
7	Information Technology	Information & Communication Technology *	2013	18
		Computer & Information Technology*	2018	18
8	Metallurgical & Materials Engg.	Industrial Metallurgy	2020	18
* AICTE approved TOTAL				360

H. **Ph. D. Programme**

SL#	Branch	Year of Starting
1.	Architecture	2018
2.	Chemical Engineering	2017
3.	Chemistry	2010
4.	Civil Engineering	2010
5.	Computer Application	2016
6.	Computer Science & Engineering	2010
7.	Electrical Engineering / EEE	2010
8.	Electronics & Telecomm. Engineering	2010
9.	Humanities	2015
10.	Information Technology	2015
11.	Mathematics	2010
12.	Mechanical Engineering	2010
13.	Metallurgy & Materials Engineering	2015
14.	Physics	2010
15.	Production Engineering	2010

I. **Executive B. Tech. Programme (Only One Batch)**

SL#	Name of the Executive B.Tech. Programme	Name of the Departments	Year of Starting	No. of Student Enrolled
1.	Power Engineering	Electrical Engineering Mechanical Engineering	2017	15
2.	Manufacturing and Process Engineering	Metallurgy & Materials Engineering Production Engineering	2017	15
		TOTAL		30

ANNEXURE – 2

Detail Expansion Plan

A. **SCHOOLS, Admin Bldg, Classroom Complex, Laboratory Complex: 622 Crores**

Each schools will have Gallery Hall Classrooms, Laboratory Rooms, Centres of Excellence, Chambers for Professors & Lab Equipment, Central AC, furniture, gadgets like computer, scanner, printer.

Sl#	School	Size	Area in ft2	Cost per ft2	Cost INR Cr	Lab/ AC / Furniture INR Cr
1	School of Computer Engg	G + 4	5 x 35,000	4000	70	14
2	School of Mechanical Engg	G + 4	5 x 35,000	4000	70	14
3	School of Chemical and Biosciences	G + 4	5 x 35,000	4000	70	14
4	School of Infrastructure and Planning	G + 4 + Existing Bldg.	5x25,000	4000	50	10
5	School of Humanities & Basic Science(first-year classes, labs)	G + 4	5x20,000	4000	40	10

6	Office of VC (+ Admn, Fin. Exam)	G + 4	5 x 25,000	4000	50	10
7	Classroom Complex	G + 4	5 x 40,000	4000	80	08
8	Laboratory Complex	G + 4	5 x 40,000	4000	80	08
9	School of Earth and Environmental Sc.	Existing Bldg.	-	-	-	10
10	School of Electrical Engg	Existing Bldg.	-	-	-	14
	Total		-		**510**	**112**

B. **RESIDENCES for Faculty & Staff : 400 Crores**

Sl#	Item	Nos of quarters	Ft2 per room	Total Area	Cost per ft2	Cost in INR Cr
1	Faculties	500	1400	700,000	4000	280
2	Non-teaching Staff	250	1200	300,000	4000	120
	Total					**400**

C. **Hostel for 7100 students** (hostel rooms exist for 3300 students): **575 Crores**

Sl#	School	Nos of rooms	Ft2 per room	Total Area(*)	Cost per ft2	Cost in INR Cr
1	1000 Capacity 7 Hostels @ 80 Cr per Hostel	-	-	-	-	560
2	50-room married accommodation	50	450	25,875	4000	10.4
3	50-room Foreign students	50	200	11,500	4000	4.6
	Total					**575**

Considering 15% additional space for common use, e.g, Common Room, TV room, Washrooms

D. **CAPEX for Academic Elements: 153 Crores**

Sl#	Item	Capacity	Plinth area ft2	Total INR Cr
1	Fab Lab and state-of-art Workshop (CNC m/c, Laser cutters, 3D printers, lathe, drilling)		40,000	20
2	Library Complex	2000 seating	40,000	16
3	Establishment of **CoEs** (Equipment, Software)			70
4	Training & Placement Complex	Online Exam – 1000, 10 rooms for Interview, Gallery – 500	25,000	12
5	Central Research Facility (CRF)		25,000	10
6	Convention Centre	Gallery halls – 2000, 1000	50,000	25
	Total			**153**

E. **CAPEX for Co-Curricular and Extra-Curricular Amenities: Rs. 134 Crores**

Sl	Item	Capacity	Plinth area ft2	Total INR Cr
1	Auditorium	6000	30,000 @Rs. 10000	30
2	Students Activity Centre		60,000	24
3	Food Complex Cum Shopping Centre	5x200 seat	25,000	10
4	Guest House	100 rooms 20 suits	50,000	20
5	Indoor and outdoor Sports facilities	5000	100,000 @5000	50
	Total			**134**

F. **Renovation of old buildings and laboratories: Rs. 56 Crores**

Sl	Particulars	Estimate in Rs Cr
1	Repair of 6 old hostels (65 yrs old)	6
2	Repair of the academic building	25
3	Upgradation of aged outdated Lab equipment	25
	Total	**56**

G. **CAPEX for additional Components: Rs. 60 Crores**

Sl#	Particulars	Cost in Crore
1	Land Grading, Roads, Drains, Horticulture	50
2	Dedicated 33 KV Power Supply	10
	Total	**60**

Implementation Plan

A. **PHASE I:** (July 2022-December 2025)

Sl#	Particulars	Cost in (Crs)

1	School of Computer Engg	84
2	School of Mechanical Engg	84
3	School of Chemical and Biosciences	84
4	School of Infrastructure and Planning	60
5	School of Humanities and Social Sciences	50
6	Office of VC (+ Admn, Fin. Exam)	60
7	Classroom Complex	88
8	Laboratory Complex	88
9	Residences for teaching (400) and non-teaching staff (200)	320
10	Hostels and dining space	475
11	Renovation of old Hostels, Academic Infrastructure, and Equipment	48
12	Roads, land Grading, Dedicated Power Supply	55
	TOTAL	**1496**

After Phase I construction, 740 UG seats will be increased in first-year admission in academic session 2026-27. Lateral Entry (LE) seats will be increased by 120 seats in academic session 2027-28.

B. **PHASE II:** (July 2025-December 2027)

Sl#	Particulars	Cost in (Crs)
1	Setting up of COEs (Equipment)	60
2	CAPEX for Academic Elements	23
3	Residential houses for teaching (100) and non-teaching (50) staff	80
4	Hostels and dining space	100
5	School of Electrical Engg (Furniture + Equipment etc.)	14
6	School of Earth & Environmental Sc. (Furniture + Equipment etc.)	10
5	CAPEX for Co-Curricular and Extra Curricular Amenities	64
	TOTAL	**351**

After phase II construction, 400 seats will be increased in academic session 2028-29.

C. **PHASE III:** (July 2027-July 2029)

Sl#	Particulars	Cost in (Crs)
1	Setting up of COEs (Equipment)	10
2	CAPEX for Co-Curricular and Extra Curricular Amenities	70
3	CAPEX for Academic Elements	60
4	Renovation of Old Bldgs and laboratories	08
5	Roads, land Grading, Dedicated Power Supply	05
	Total	**153**

The Institutional Development Plan (IDP), having received the blessing of the Honorable Chief Minister of Odisha, is now poised for action. In the initial phase, the Industrial Development Corporation of Odisha (IDCO) has set forth a tender for infrastructure enhancement. A vigilant committee oversees the execution of this plan. Additionally, the Department of Skill Development and Technical Education, as the parent entity within the Odisha government, conducts monthly reviews to ensure the successful realization of this transformative endeavor.

10.1.3 Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10)   Institute Marks : 10.00

List of Members of the Board of Management of VSSUT, Burla

Sl. No.	Name & address	Position	Nature of Membership
1	Prof. Bansidhar Majhi, Vice Chancellor, VSSUT, Burla	Chairman	Ex-officio
2	Smt. Usha Padhee, IAS, Principal Secretary to Government of Odisha, Skilled Development & Technical Education Department, Government of Odisha, Bhubaneswar	Member	-do-
3	The Director, Technical Education & Training, Odisha, Killa Maidan, Buxibazar, Cuttack - 1	Member	-do-
4	Additional Secretary to Govt. (ES-II) Finance Department, Govt. of Odisha, BBSR.	Member	-do-
5	Hon'ble Vice-Chancellor, Biju Pattnaik University of Technology, Odisha, Rourkela	Member	-do-
6	Shri Pradeep Dang, OAS (S) Registrar, VSSUT,Burla	Convenor-Cum-Secretary	-do-
7	Prof. Chintamani Mahapatra, Centre for Canadian, US& Latin American Studies School of International Studies, Jawaharlal Nehru University, New Delhi	Member	Nominee of UGC
8	Dr. Damodar Acharya, DN Oxy Park, Tower-II, 16th Floor, Flat No.2173, Dumduma, Bhubaneswar - 751019	Member	Nominee of AICTE
9	Prof. Debadutta Mishra , Professor in Prod. Engg.,VSSUT, Burla.	Member	Nominee of VC (Seniority-cum-rotation basis among Professors)
10	Prof. Sidharth Panda, Professor of Electrical Engg. VSSUT, Burla	Member	Academic Council Nominee
11	Prof. Sanjay Kumar Patro, Professor of Civil Engg. VSSUT, Burla	Member	Academic Council Nominee
12	Prof. S Karmalkar, Director, IIT, Bhubaneswar	Member	Chancellors Nominee(Reputed Institute)
13	Er. Ashesh Padhy, VP & Head-Project, JSW Paradip Steel Project.	Member	Chancellors Nominee(Alumni)
14	Prof. Sukumar Mishra, Professor in Electrical Engg., IIT, Delhi	Member	Chancellors Nominee(Alumni)
15	Shri Sarada Prasad Nayak, M.L.A, At-C/136, Sector-1, P.S. Sector-1	Member	Nominee of Odisha Legislative Assembly
16	Shri Sudam Marndi, M.L.A, Bija7yaramchandrapur, Ward No. 17., Bhanjpur, Dist-Mayurbhanaj	Member	Nominee of Odisha Legislative Assembly

Member of Academic Council	
Ex-officio member as per clause No.21-2a (i) of VSSUT Act 2008	
1. Prof. Bansidhar Majhi, Vice-Chancellor (http://vssut.ac.in/vice-chancellor-s-message.php)	Chairman
Ex-officio members as per clause No.21-2a (ii) of VSSUT Act 2008	
2 Dean, Academic Affairs	Member Secretary
3 Dean, PGS&R	Member
4 Dean, SRIC	Member
5 Dean, CDCE	Member
6 Dean Students Welfare	Member
7 Dean, Faculty & Planning	Member
8 Dean, Alumni & International Relations	Member
9 Dean, School of Chemical & Bio-Sciences	Member
10 Dean, School of Computer Sciences	Member
11 Dean, School of Electrical Science	Member

12	Dean, School of Humanities & Basic Science	Member
13	Dean, School of Infrastructure & Planning	Member
14	Dean, School of Mechanical Sciences	Member
15	HOD, Chemical Engineering	Member
16	HOD, Civil Engineering	Member
17	HOD, Computer Sc. & Engineering	Member
18	HOD, Electrical Engineering	Member
19	HOD, Electrical & Electronics Engineering	Member
20	HOD, Electronics & TC Engineering	Member
21	HOD, Information Technology	Member
22	HOD, Mechanical Engineering	Member
23	HOD, Metallurgical & Materials Engg.	Member
24	HOD, Production Engineering	Member
25	HOD, Architecture	Member
26	HOD, Chemistry	Member
27	HOD, Mathematics	Member
28	HOD, Physics	Member
29	HOD, Humanities	Member
30	HOD, Computer Application	Member
31	Controller of Examination	Member
Ex-officio members as per clause No.21-2a (iii) of VSSUT Act 2008		
32	Prof. P.C. Swain, Professor, Civil Engg.	Member
33	Prof. B. B. Pati, Professor, Electrical Engg.	Member
34	Prof. R. K. Sahu, Professor, Electrical & Electronics Engg.	Member
35	Prof. Sanjay Agrawal, Professor, Electronics & TC Engg.	Member
36	Prof. H.S. Behera,Professor, Information Technology	Member
37	Prof. P.R.Dash, Professor Mechanical Engg.	Member
38	Prof. S.K. Badjena, Professor, Metallurgical & Materials Engg.	Member
39	Prof. D. Mishra, Professor, Production Engg.	Member
40	Prof. P.K. Kar, Professor, Chemistry	Member
41	Prof. S. K. Paikray, Professor,Mathematics	Member
42	Prof. Ganeswar Nath, Professor, Physics	Member
Ex-officio members as per clause No.21-2a (iv) of VSSUT Act 2008		
43	Dr. Debabrata Giri, Associate Professsor, Civil Engg.	Member
44	Dr. Kishore Kumar Sahu, Assistant Professor, Information Technology	Member
45	Sri Sanjib Kumar Nayak, Assistant Professor, Computer Application	Member
Members as per clause No.21-2b (i), (ii), (iii) of VSSUT Act 2008		
46	Prof. Niord Chandra Sahoo, Professor of Electrical Sciences, IIT, Bhubaneswar	Member
47	Prof. Kishanjit Kumar Khatua, Professor of Civil Engg., NIT, Rourkela	Member
48	Prof. Tushar Kumar Nath, Professor of Civil Engg., IGIT, Sarang	Member
Members as per clause No.21-2b (iv) of VSSUT Act 2008		
49	Mr. Saroj Kumar Panda, Regd. No. 2002090001, B.Tech, Mechanical Engg.	Member
50	Mr. Suraj Kumar Pal, Regd. No. 2002070039, B.Tech, Electronics & TC Engg.	Member
51	Ms. Swarnaprabha Dehury, Regd. No. 2205100006, M.Tech, MME	Member
52	Mr. Tanmaya Kumar, Regd. No. 2002090138, B.Tech, Mechanical Engg.	Member
External academic council members		
53	Prof. N. C. sahoo, Prof, Electrical sciences, IIT BBSR	External Member
54	Prof. K. K. Khatua, Prof Civil Engg, NIT RKL	External Member
55	Prof. T. K. Nath, Prof Civil engg, IGIT Sarang	External Member

Frequency of the meetings: Twice in a year and special meetings under obligations.

The information related to the frequency of the meetings; and attendance therein, minutes of the meetings and action-taken reports are available at https://www.vssut.ac.in/proceedings.php (https://www.vssut.ac.in/proceedings.php)

The published rules including service rules, policies and procedures available and disseminated to all stake holders and public at

VSSUT Act: https://vssut.ac.in/doc/VSSUT_ACT.pdf (https://vssut.ac.in/doc/VSSUT_ACT.pdf)

VSSUT Statute: https://vssut.ac.in/doc/VSSUT-Statute.pdf (https://vssut.ac.in/doc/VSSUT-Statute.pdf)

10.1.4 Decentralization in working and grievance redressal mechanism (5)   Institute Marks : 5.00

ADMINISTRATION AT VSSUT, BURLA

01.	The Vice-Chancellor	Prof. Banshidhar Majhi (https://www.vssut.ac.in/administration.php)
02.	The Registrar	Shri Pradeep Dang
03.	The Comptroller of Finance	Sri Tularam Kalet, OFS-1 (SB)
04.	The Controller of Examinations	Dr. Achyut Kumar Panda (https://vssut.ac.in/faculty-profile.php?furl=achyut-kumar-panda)
05.	The Librarian	Dr. (Mrs.) Archita Nanda
06.	The Dean of the Students' Welfare	Prof. Sanjaya Kumar Patro (https://www.vssut.ac.in/faculty-profile.php?furl=sanjaya-kumar-patro-arch)
07.	The Dean, Academic Affairs	Prof. Sanjay Agrawal (http://www.vssut.ac.in/faculty-profile.php?furl=sanjay-agrawal)
08.	The Dean, Post-Graduate Studies & Research	Prof. Himanshu Sekhar Behera (https://vssut.ac.in/faculty-profile.php?furl=himanshu-sekhar-behera)
09.	The Dean, Faculty & Planning	Prof. Ramakanta Panigrahi
10.	The Dean, Alumni & International Relations	Dr. Anil Kumar Kar (http://www.vssut.ac.in/faculty-profile.php?furl=anil-kumar-kar)
11.	The Dean, Centre for Distance and Continuing Education	Prof. Saroj Kumar Sarangi (https://www.vssut.ac.in/administration.php)
12.	The Dean, Sponsored Research & Industrial Consultancy	Prof. Sukalyan Dash (https://www.vssut.ac.in/administration.php)
13.	HOS, School of Computer Sciences	Prof. Himanshu Sekhar Behera (https://vssut.ac.in/faculty-profile.php?furl=himanshu-sekhar-behera)
14.	HOS, School of Infrastructure & Planning	Prof. Sudhanshu Sekhar Das
15.	HOS, School of Mechanical Sciences	Prof. Debadutta Mishra
16.	HOS, School of Electrical Science	Prof. Sidhartha Panda
17.	HOS, School of Humanities & Basic Science	Prof. Jayaprakash Panda
18.	HOS, School of Chemical & Bio-Sciences	Prof. Jayadev Rana (http://www.vssut.ac.in/faculty-profile.php?furl=jaydev-rana)
19.	Medical Officer (on deputation from Government of Odisha)	Vacant
20.	Maintenance Engineer	Prof. Ramkrishna Dandapat (http://vssut.ac.in/faculty-profile.php?furl=ramkrishna-dandapat)
21.	Workshop Superintendent	Dr. Rabindra Behera
22.	Physical Training Instructor	Vacant
23.	Director, IQAC	Prof. Amarnath Nayak (https://www.vssut.ac.in/administration.php)
24.	Director, TBI, (VSSUT - ASSIST)	Prof. Debadutta Mishra (http://www.vssut.ac.in/faculty-profile.php?furl=debadutta-mishra)
25.	Coordinator , TEQIP - III	Prof. Amar Nath Nayak (http://vssut.ac.in/faculty-profile.php?furl=amar-nath-nayak)
26.	H.O.D., Architecture	Dr. Bharati Mohapatra (http://vssut.ac.in/faculty-profile.php?furl=bharati-mohapatra)
27.	H.O.D., Chemical Engineering	Dr. Pankaj Charan Jena (http://vssut.ac.in/faculty-profile.php?furl=pankaj-charan-jena)
28.	H.O.D., Chemistry	Dr. Trinath Biswal (https://vssut.ac.in/faculty-profile.php?furl=trinath-biswal)
29.	H.O.D., Civil Engineering	Dr. Rakesh Roshan Dash (https://vssut.ac.in/faculty-profile.php?furl=rakesh-roshan-dash)
30.	H.O.D, Computer Application	Dr. Satyabrata Das (https://vssut.ac.in/faculty-profile.php?furl=satyabrata-das)
31.	H.O.D., Computer Sc. & Engg.	Dr. Suvasini Panigrahi (https://vssut.ac.in/faculty-profile.php?furl=suvasini-panigrahi)
32.	H.O.D., Electrical Engineering	Dr. Papia Ray (http://www.vssut.ac.in/faculty-profile.php?furl=papia-ray)
33.	H.O.D, Electrical & Electronics Engineering	Dr. Santi Behera (https://vssut.ac.in/faculty-profile.php?furl=santi-behera-el)
34.	H.O.D., Electronics & TC Engineering	Prof. Harish Kumar Sahoo (http://vssut.ac.in/faculty-profile.php?furl=harish-kumar-sahoo)
35.	H.O.D., Humanities	Dr. Jayaprakash Paramguru (http://vssut.ac.in/faculty-profile.php?furl=jayaprakash-paramaguru)
36.	H.O.D., Information Technology	Dr. Pradip Kumar Sahu (http://vssut.ac.in/faculty-profile.php?furl=pradip-kumar-sahu)
37.	H.O.D., Mathematics	Dr. Mahendra Kumar Jena (http://vssut.ac.in/faculty-profile.php?furl=mahendra-kumar-jena)

38.	H.O.D., Mechanical Engineering	Dr. Sumanta Panda (http://vssut.ac.in/faculty-profile.php?furl=sumanta-k-panda)
39.	H.O.D., Metallurgy & Materials Engineering	Dr. Sushant Kumar Badjena (http://vssut.ac.in/faculty-profile.php?furl=sushant-kumar-badjena)
40.	H.O.D., Physics	Dr. Ganeswar Nath (https://vssut.ac.in/faculty-profile.php?furl=ganeswar-nath)
41.	H.O.D., Production Engineering	Dr. Arun Kumar Rout (http://vssut.ac.in/faculty-profile.php?furl=arun-kumar-rout)
42.	PIC, Training & Placement	Prof. Prasanta Nanda
43.	PIC, Alumni Relation	Dr. Sanjay Agrawal (http://www.vssut.ac.in/faculty-profile.php?furl=sanjay-agrawal)
44.	PIC, Canteen Committee	Prof. Trinath Biswal (https://vssut.ac.in/faculty-profile.php?furl=trinath-biswal)
45.	PIC, Central Computing Facility	Prof. Arunanshu Mahapatro (http://www.vssut.ac.in/faculty-profile.php?furl=arunanshu-mahapatro)
46.	Coordinator, Central Research Facility	Dr. Saroj Ku. Sarangi (https://www.vssut.ac.in/faculty-profile.php?furl=saroj-kumar-sarangi)
47.	PIC, Central Library	Dr. Sunanda Kumari Patri (https://www.vssut.ac.in/administration.php)
48.	PIC, Central Stores & Purchase	Dr. S.K. Paikray (https://www.vssut.ac.in/administration.php)
49.	PIC, Central Transport Facility	Dr. Rabindra Behera
50.	PIC, Civil Maintenance	Dr. Debabrata Giri (https://www.vssut.ac.in/faculty-profile.php?furl=debabrata-giri)
51.	PIC, e-Abhijoga & MO SARKAR	Prof. Manoranjan Pradhan (http://www.vssut.ac.in/faculty-profile.php?furl=manoranjan-pradhan)
52.	PIC, Electrical Maintenance	Dr. Deepak Kumar Lal (http://vssut.ac.in/faculty-profile.php?furl=deepak-kumar-lal)
53.	PIC, Examinations	Dr. Kishore Kumar Sahu (https://www.vssut.ac.in/administration.php)
54.	PIC, Guest House	Prof. Nilamani Bhoi (http://vssut.ac.in/faculty-profile.php?furl=nilamani-bhoi)
55.	PIC, House Allotment	Prof. Sudhanshu Sekhar Das (https://vssut.ac.in/faculty-profile.php?furl=sudhanshu-sekhar-das)
56.	PIC, Automation	Dr. G.R. Shial (https://www.vssut.ac.in/administration.php)
57.	PIC, Convocation	Prof. S.S. Das (https://www.vssut.ac.in/administration.php)
58.	PIC, CRF	Dr. T.R. Mohapatra (https://www.vssut.ac.in/administration.php)
59.	PIC, Horticulture	Prof. Pandaba Patro (https://vssut.ac.in/faculty-profile.php?furl=pandaba-patro)
60.	PIC, Industry-Institute Interaction	Prof. A.N. Nayak (https://www.vssut.ac.in/administration.php)
61.	PIC, Innovation	Prof. D. Mishra (https://www.vssut.ac.in/administration.php)
62.	INO, Scholarship	Dr. Sumitra Kisan (https://www.vssut.ac.in/administration.php)
63.	PIC, Lawns & Gardens	Dr. Lipika Parida (https://www.vssut.ac.in/administration.php)
64.	PIC, Land Settelment	Prof. S. Agrawal (https://www.vssut.ac.in/administration.php)
65.	PIC, Nua-O Scheme for skilling	Dr. Sasmita Behera (https://www.vssut.ac.in/administration.php)
66.	PIC, Security	Dr. G.R. Biswal (https://www.vssut.ac.in/administration.php)
67.	PIC, Public Relations	Prof. Priyaranjan Mohapatra (https://www.vssut.ac.in/faculty-profile.php?furl=priyaranjan-mohapatra)
68.	PIC, Telephones	Dr. Pankaj Charan Jena
69.	PIC, Time Table & IPR Cell	Prof. Sarojrani Pattnaik (https://vssut.ac.in/faculty-profile.php?furl=sarojrani-pattnaik)
70.	PIC, University Seminar	Prof. Sasmita Acharya (https://vssut.ac.in/faculty-profile.php?furl=sasmita-acharya)
71.	Assistant Controller, Examination	Mr. Suresh Srichandan (https://www.vssut.ac.in/administration.php)
72.	Assistant Controller Examination & PIC, NAD	Dr. Bibhuti Prasad Sahoo (https://www.vssut.ac.in/administration.php)
73.	Assistant Controller Examination & PIO, RTI	Dr. D.C. Rao (https://www.vssut.ac.in/administration.php)
74.	CTO,NCC	Dr. Aditya Kumar Hota (https://www.vssut.ac.in/administration.php)
75.	Head, Innovation Center	Prof. Debadutta Mishra (http://www.vssut.ac.in/faculty-profile.php?furl=debadutta-mishra)

76.	Chairman, Estate Committee	Prof. Sudhanshu Sekhar Das (https://vssut.ac.in/faculty-profile.php?furl=sudhanshu-sekhar-das)
77.	Chairperson, ICC	Prof. Sucheta Panda (http://www.vssut.ac.in/faculty-profile.php?furl=sucheta-panda)
78.	First Appellate Authority, RTI	Prof. S.S. Das (https://www.vssut.ac.in/administration.php)
79.	PIO, RTI Cell	Dr. Ashok Kumar Sahoo (http://vssut.ac.in/faculty-profile.php?furl=ashok-kumar-sahoo)
80.	QIP (Govt. of India)	Prof. Piyush Ranjan Das (http://www.vssut.ac.in/faculty-profile.php?furl=piyush-ranjan-das)
81.	Faculty Branch Counselor, IEEE Student Chapter	Dr. Harish Kumar Sahoo (http://www.vssut.ac.in/faculty-profile.php?furl=harish-kumar-sahoo)
82.	Faculty Advisor, ASME Student Chapter	Dr. Kiran Kumar Ekka (http://www.vssut.ac.in/faculty-profile.php?furl=kiran-kumar-ekka)
83.	ISTE Coordinator	Mr. Suvendu Narayan Mishra (http://www.vssut.ac.in/faculty-profile.php?furl=suvendu-narayan-mishra)
84.	CTO, National Cadet Corps	Dr. Birendra Kumar Barik (http://www.vssut.ac.in/faculty-profile.php?furl=birendra-kumar-barik)
85.	PIC, Mo College Abhijan & Coordinator NSS	Prof. A.K. Kar (https://www.vssut.ac.in/administration.php)
86.	NPS Coordinator	Mr. Suvendu Narayan Mishra (http://www.vssut.ac.in/faculty-profile.php?furl=suvendu-narayan-mishra)
87.	Vice President, Students' Cultural Society	Dr. Anil Kumar Kar (http://www.vssut.ac.in/faculty-profile.php?furl=anil-kumar-kar)
88.	Vice President, Students' Sports Society	Dr. Manas Ranjan Senapati (http://www.vssut.ac.in/faculty-profile.php?furl=manas-ranjan-senapati)
89.	Vice President, Students' Technical Society	Dr. Harish Kumar Sahoo (http://www.vssut.ac.in/faculty-profile.php?furl=harish-kumar-sahoo)
90.	Secretary, Alumni Association	Dr. Pradip Kumar Sahu (http://www.vssut.ac.in/faculty-profile.php?furl=pradip-kumar-sahu)

STUDENTS GRIEVANCE REDRESSAL

In pursuance to the AICTE letter with enclosure vide F.No.1-101/PGRC/AICTE/ Regulation/2020, dated 03.12.2020, New Delhi and the University Grants Commission, New Delhi (Redress of Grievances of Students) Regulations, 2019 Notification dated 06.05.2019 the Student Grievance Redressal Committee (SGRC) is constituted with the following members for resolving grievance of the students of the University.

1. Dean, Academic Affairs - Member-Convenor
2. Dean, PGS & R - Member
3. Dean, Faculty & Planning - Member
4. Dean, CDCE - Member
5. Dean, SRIC - Member
6. Controller of Exams - Member

A dedicated online portal has been set up for students to log grievances and track them in following link. http://grievance.vssut.in (http://grievance.vssut.in/)

Note: In of case of any emergency, the aggrieved is free to go to Vice-Chancellor directly.

Students can submit their grievances in UGC portal also https://ugc.ac.in/grievance (https://ugc.ac.in/grievance)

Ombudsperson for Student Grievances :

Dean, Students' Welfare, VSSUT has been appointed as the **'OMBUDSPERSON'** of the University. The 'OMBUDSPERSON' shall hear and decide the appeals of student(s) against the decision(s) of the **'Student Grievance Redressal Committee' (SGRC)**.

The senior most among from the Deans shall be the Chairperson of the Committee for the period of his tenure as the Dean.

The above committee will only deal with student grievances that are not adhered in purview of Internal Complaints Committee, Anti-Ragging Committee, SC/ST Committee and Disciplinary committees.

In case, the issue of appropriate forum for handling a specific grievance arises, Dean (Student Welfare) can be consulted by the Committee. The Committee may at its own discretion, invite the aggrieved student for a personal hearing on the basis of a written request. The above Committee may hold its meetings from time to time as required. All the written grievances received from students by the end of each month shall be taken up in its forthcoming meetings.

The Committee can also address grievances from applicants to admission for various programs. The committee can address individual as well as collective grievances of the students of the University.

Students may approach different people for different types of grievances. Below are various level for addressing the issues. In case the issue remains unresolved at the first level or the issue is due to the person at the first level, student may go to the second level and further. If a student is still not satisfied, may contact the Vice-Chancellor. The Vice-Chancellor will seek report for Grievance Redressal Committee.

List of various level for addressing the issues on grievances are as under:-

Grievance	FIRST LEVEL	SECOND LEVEL	THIRD LEVEL
Particular Course Related	Concerned Heads	Dean Academic Affairs	**Student Grievance Redressal Committee' (SGRC)**
Academics Related	HoDs concerned/CoE	Dean Academic affairs	
Halls of Residences / Facilities Related	Asst Warden/Warden	Dean Student Welfare	
Mess affairs	Asst Warden/Warden	Dean Student Welfare	
Ragging	Warden/Dean Student welfare	Anti Ragging Cell	
Student Clubs/Societies	Faculty Advisor/Vice-President	Dean Student Welfare	

SC/ST Complaint	SC-ST Cell https://vssut.ac.in/doc/SCST_Cell_Edited_on_05-07-2020.pdf (https://vssut.ac.in/doc/SCST_Cell_Edited_on_05-07-2020.pdf)	
Sexual Harassment	Internal Complaints Committee https://www.vssut.ac.in/icc.php (https://www.vssut.ac.in/icc.php)	

10.1.5 Delegation of financial powers (5)   Institute Marks : 5.00

The financial powers delegated to the Vice chancellor, Registrar, The Comptroller of Finance, Deans, Heads of Departments, Hostel Wardens and relevant in-charges of the institution are explicitly mention in the VSSUT Act (https://vssut.ac.in/doc/VSSUT_ACT.pdf (https://vssut.ac.in/doc/VSSUT_ACT.pdf)) and Statute (https://vssut.ac.in/doc/VSSUT-Statute.pdf (https://vssut.ac.in/doc/VSSUT-Statute.pdf)).

10.1.6 Transparency and availability of correct/unambiguous information in public domain (5)   Institute Marks : 5.00

The correct/unambiguous information on policies, rules, processes to stakeholders is made transparently available in public domain at https://www.vssut.ac.in/ (https://www.vssut.ac.in/) (University website)

10.2 Budget Allocation, Utilization, and Public Accounting at Institute level (15)   Total Marks 15.00

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY : (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 - CFY 2023-2024

Total Income 1574968398				Actual expenditure(till…): 1581031889				Total No. Of Students 4329
Fee	Govt.	Grants	Other sources(specify) Interest, Overh	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify Student events		Expenditure per student
152511050	679020000	710990997	32446351	804296697	76735192	700000000		365218.73

Table 2 - CFYm1 2022-2023

Total Income 1196173168				Actual expenditure(till…): 1243814199				Total No. Of Students 3968
Fee	Govt.	Grants	Other sources(specify) Interest, Overh	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify		Expenditure per student
192880199	954760784	13225798	35306387	1096980395	146833804			313461.24

Table 3 - CFYm2 2021-2022

Total Income 1157593002				Actual expenditure(till…): 1042726978				Total No. Of Students 3968
Fee	Govt.	Grants	Other sources(specify) Interest, Overh	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify		Expenditure per student
183542101	923789000	5912187	44349714	867835246	174891732			262784.02

Table 4 - CFYm3 2020-2021

Total Income 891416198				Actual expenditure(till…): 954597290				Total No. Of Students 4011
Fee	Govt.	Grants	Other sources(specify) Interest, Overh	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify		Expenditure per student
229667807	610331000	6081266	45336125	807799836	146797454			237994.84

Items	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till	Budgeted in 2020-2021	Actual Expenses in 2020-2021 till
Infrastructure Built-Up	7100000	7767351	3084878	1277353	2608750	1699249	5700000	1249561
Library	1900000	8829028	2425000	7692601	1000000	5065050	1940000	1159821
Laboratory equipment	1793751	1014852	1240824	1185623	5445170	5329148	4688970	4466806
Laboratory consumables	2000000	1862485	1500000	2391752	7200000	1554830	7200000	2311030
Teaching and non-teaching staf	8980101	7071154	7924497	7798179	6955586	7707207	5560498	7544991
Maintenance and spares	7125000	1081280	2369000	1956028	1005000	4354794	1005000	3413486
R&D	5807420	5807420	1140587	1140587	8727112	8727112	8762183	8762183
Training and Travel	6500000	3177154	6200000	1668574	1500000	692831	1500000	401354
Miscellaneous Expenses*	2015000	8288349	2109250	2524572	1991000	4324284	2013600	1695092
Others, (Electricity and Water C	4877472	3383211	3940280	3516366	2842664	4717092	2742664	3981967
Total	**1817429775**	**1566608479**	**976747958**	**1022538008**	**1047692542**	**1056783238**	**660913633**	**967178906**

10.2.1 Adequacy of budget allocation (5)   Institute Marks : 5.00

The University prepares budgets under the head Plan & Non-plan for all the departments based on the minimum requirement. The budget is bi-annually submitted to Govt. for their consideration. The Accounts Section of the University also provides the budget for salary of both teaching and non-teaching staff members under non-plan head. The budget is prepared by the statutory Finance Committee by collecting individual budget from all departments, schools, sections and central accounts as per issued directives. Budget is allotted to each department towards up-gradation of laboratories, laboratory consumables and repair of laboratory equipment etc., internal adjustments are made as per the urgency, in specific cases. Thrust is given on development of infrastructure, academic development programme, research, etc. Each laboratory maintains its own record in the form of stock register which records the information related to new purchases, repairs etc. The allocated budget gets sanctioned based on the budget predictions given by the departments for every academic year on the basis of past experience and anticipated future projects.

10.2.2 Utilization of allocated funds (5)   Institute Marks : 5.00

The allocated funds have been utilized for the purchase of new laboratory equipment (computers), software, training and travel and other miscellaneous expenses for academic activity. Actions for procurement of lab equipment, up-gradation of existing lab facilities, purchase of consumables etc. are initiated from the respective departments and the funds are released on proposal basis on recommendation by committees and approval by the Vice Chancellor/ BOM as per the allocated financial power. Major works like construction, up gradation of existing infrastructure, procurement and maintenance of common utilities, house-keeping, procurement of furniture etc. are controlled by the central facilities such as Central Stores, Central Computing Facility, Civil Works and Electrical Maintenance. The budget amount is allocated for the creation of capital assets and to cover operational expenses according to budgetary guidelines. Capital assets encompass items such as laboratory equipment, study resources, and laboratory facilities. Operational expenses include salaries, research promotion, maintenance, spares, and other relevant expenditures.

The utilization heads are detailed in the audited statements of accounts for each year. The utilization certificate is regularly submitted to Govt. of Odisha after due utilization of funds every year.

During the last three years, the budget was utilized to meet expenses such as staff salaries, infrastructure development, purchase of equipment, expenses towards consumables and contingencies, travel etc.

10.2.3 Availability of the audited statements on the institute's website (5)

Institute Marks : 5.00

The funds released by the Govt. are fully utilized following the norms prescribed by the Govt. The funds received from the Govt. are subject to Local Fund and Comptroller and Auditor General (CAG) audit from time to time. Provision is made for uploading the audited statement in the University website at https://www.vssut.ac.in/ (https://www.vssut.ac.in/). https://vssut.ac.in/IQAC/documentspdf/AQAR-Report-2021-22.pdf (https://vssut.ac.in/IQAC/documentspdf/AQAR-Report-2021-22.pdf)

10.3 Program Specific Budget Allocation, Utilization (30)

Total Marks 30.00

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY: (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 :: CFY 2023-2024

Total Budget 8768681		Actual expenditure (till…): 2863225		Total No. Of Students 276
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
3221331	5547350	1388146	1475079	10374.00

Table 2 :: CFYm1 2022-2023

Total Budget 5508445		Actual expenditure (till…): 5133627		Total No. Of Students 276
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
2228404	3280041	2098456	3035171	18600.10

Table 3 :: CFYm2 2021-2022

Total Budget 3375940		Actual expenditure (till…): 4538137		Total No. Of Students 276
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
1244187	2131753	1111864	3426273	16442.53

Table 4 :: CFYm3 2020-2021

Total Budget 3407713		Actual expenditure (till…): 2603544		Total No. Of Students 276
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
1206629	2201084	1046879	1556665	9433.13

Items	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till	Budgeted in 2020-2021	Actual Expenses in 2020-2021 till
Laboratory equipment	1202868	680548	832083	795065	365147	357366	314437	299539
Software	99705	68686	89531	84053	50186	46247	60862	56548
Laboratory consumable	145587	131470	182947	168830	123870	109753	177249	163132
Maintenance and spares	5029411	763257	1672235	1380726	709412	307397	409412	240952
R & D	409935	409936	805121	805121	616031	616031	618507	618507
Training and Travel	458823	224270	437647	117782	105882	48906	105882	28331
Miscellaneous Expenses*	1422352	585060	1488882	1782051	1405412	330680	1421365	1196536
Total	**8768681**	**2863227**	**5508446**	**5133628**	**3375940**	**1816380**	**3107714**	**2603545**

10.3.1 Adequacy of budget allocation (10)   Institute Marks : 10.00

At the onset of the financial year, each department and unit compiles budget needs classified into recurring and non-recurring categories. These allocations are subsequently determined according to the existing funds. Oversight of expenditure falls under the purview of the Comptroller of Finance, who has the authority to approve additional allocations for specific situations. The institution diligently tracks expenses to ensure vital requirements are fulfilled while upholding the institutions operational efficiency.

At the commencement of the academic session, the Heads of Departments are informed about the allocated funds for their budget proposals. This includes funding for significant projects such as construction, infrastructure upgrades, procurement and maintenance of utilities, and housekeeping etc.

10.3.2 Utilization of allocated funds (20)   Institute Marks : 20.00

At the onset of the academic session, all department heads receive notifications regarding the allocated funds for their budget proposals. The procurement of laboratory equipment, consumables are undertaken by the Head of Departments with due procedure mentioned in **VSSUT Act (https://vssut.ac.in/doc/VSSUT_ACT.pdf (https://vssut.ac.in/doc/VSSUT_ACT.pdf)) and Statute (https://vssut.ac.in/doc/VSSUT-Statute.pdf (https://vssut.ac.in/doc/VSSUT-Statute.pdf)).** Significant projects such as construction, infrastructure upgrades, procurement and maintenance of utilities, housekeeping, and furniture acquisition are overseen directly by the Comptroller of Finance in collaboration with the Heads of Schools, Deans and Registrar. The Head of the Department is provided with an imprest money to meet day to day expenses and the Departments manage their own imprest accounts.

10.4 Library and Internet (20)   Total Marks 20.00

10.4.1 Quality of learning resources (hard/soft) (10)   Institute Marks : 10.00

<u>**Library overview**</u>

The library building is a three storied having area of 10,900 sq.m. The Ground floor is used for the Circulation Section, Stack area, Reprographic Section, and the General Book Bank. The first floor houses the Acquisition Section, Journal Section, Magazine & Newspaper section, and the Administrative Section of the Library. The top floor is used for E-resource Centre, Reference section, Text Book Section and SC/ST Book bank, Reading Room.

<u>**Available learning Print & e-Resources**</u>

- *Print Resources*

Print Resources	
Books Titles	10724
Books Volumes	68162
Periodicals	30
Bound Volume	9626
Theses, Dissertations	739

- *E-Resources*

e-Resources	
eBooks	Elsevier's Science Direct) World E-book Library South Asia Archive(SAA)
e-journal Database	Elsevier's Science Direct ISID JCCC
e-Journals	3563+

1. <u>**Relevance of available learning resources including e-resources**</u>

<u>**E-journals & Databases Collections**</u>

- **Elsevier's Science Direct :** 743 nos of e-journals
- **American Institute of Physics:** 19 e-journals on Physics, Chemistry, geoscience, engineering , acoustics and more.
- **Springer Link:** 1725 e-journals
- **Taylor & Francis:** 1078 e-journals
- **Institute for Studies in Industrial Development (ISID):**

    The On-Line Database Index covers 252 Indian social science journals covering the disciplines of economics, political science, public administration, sociology, social anthropology, business management, finance, geography, social work, health and education, etc and 15 newspapers.

- **JGate Pluss(JCCC):** Around 7900+ jounals

<u>**Bibliographic E-Database**</u>

- Scopus
- Web of Science

<u>**E-BOOKS**</u>

- 311 nos of Elsevier's Science Direct ebooks
- World e-book Library
- South Asia Archive (SAA)

<u>**Library Automation & Information Management Tools**</u>

- KOHA ILMS 17.4 : Library Automation Software
- D-Space Institutional Repository: 9626 bound volume journals are accessible to user.
- Turnitin iThenticate: Plagiarism Software
- DrillBit: Plagiarism Software
- IRINS VIDWAN Database: Research support service to users

2. <u>**Library Services (Accessibility and Support to students for self learning activities):**</u>

- Web OPAC is used by library patrons to search for materials without a librarians assistance. It is designed to be searched by title, author, subject, or keyword in an interface that is more user-friendly than the previous card catalog.
- Access to a wide range of physical and digital resources such as books, journals, databases, and multimedia materials.
- Assistance with information retrieval, including help with searching for and locating relevant sources for research projects.
- Reference services, where librarians are available to answer questions and provide guidance on research strategies.
- Interlibrary loan services (DELNET), allowing users to request materials from other libraries if they are not available in the universitys collection.
- Instructional sessions and workshops on topics such as information literacy, citation management, and research skills.
- Access to study spaces, computer workstations, and printing, scanning, and photocopying facilities.
- Online resources and services, including access to e-books, e-journals, and online databases, as well as virtual reference assistance.
- Research support services available to the users to enhance their research work through IRINS VIDWAN Database.
- Institutional Repository (Dspace): 9626 nos of bound volume journals are accessible to users.
- Access to the Lecture videos from NPTEL and other open course wares
- Access to the National Digital Library of India.

10.4.2 Internet (10)   Institute Marks : 10.00

Name of the Internet provider and Bandwidth: Currently 2 ISPs provider and bandwidth provided by the ISPs providers are as follows:

1Gbps Internet connectivity from BSNL

1Gbps Internet connectivity from SIFY

Currently VSSUT is having a dedicated internet connectivity of 2 Gbps.

Wi Fi availability:

The controller and access points are used in the Hostels of the University to provide uninterrupted internet access to the students for their academic and research work. Wi-Fi and LAN is provided to the academic and administrative buildings for faculty and staff members for their research and administrative work.

Networking: OFC / Ethernet connection from CIF Cell to all campuses. It is a secure network and each user has authentication for accessing our network. The networking switches are used at different campuses. The network backbone is illustrated as below.
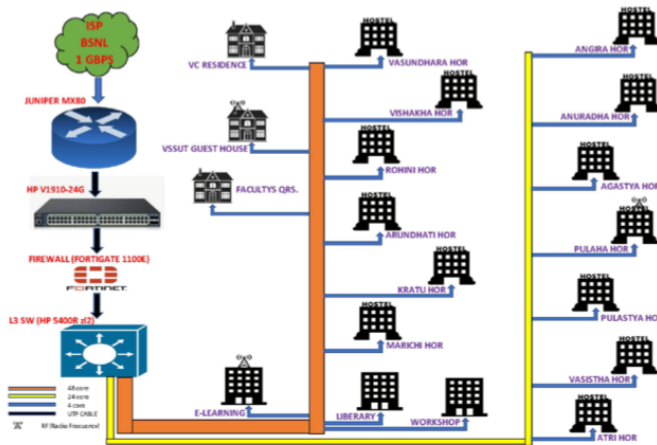
Security arrangements: As far as the security is concerned VSSUT provides the security at different levels of distribution to the client level. It has Core Layer switch, Firewall and CISCO controller for protecting students and staffs members from being affected from any DOA attack, hacking from outside and inside VSSUT. It also prevents malware and virus attacks. Intrusion Prevention System threat-detection, URL filtering, Web content filtering, application filtering and signature based filtering.

Annexure I
(A) PROGRAM OUTCOME (POs)

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: 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.

4. Conduct investigations of complex problems: 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.

5. Modern tool usage: 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.

6. The engineer and society: 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.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: 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.

11. Project management and finance: 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.

12. Life-long learning: 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.

(B) PROGRAM SPECIFIC OUTCOME (PSOs)
Program should specify 2-4 program specific outcomes.

PSO1	Identify, formulate design and investigate Production Engineering problems using first principles of mathematics, basic science and engineering.
PSO2	Establish themselves as practicing professionals in core service or research sector or entrepreneurial endeavors by solving real life engineering problems to offer techno-commercially feasible and socially acceptable solutions using contemporary knowledge and tools.
PSO3	Communicate ethically and effectively as well as demonstrate aspiration to learn and ability to handle problems with professional attitude.

Declaration

The head of the institution needs to make a declaration as per the format given -
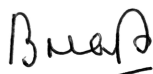
- I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines inforce as on date and the institutes hall fully abide by them.
- It is submitted that information provided in this Self Assessment Report is factually correct.
- I understand and agree that an appropriate disciplinary action against the Institute willbe initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute
Name : Prof. Banshidhar Majhi
Designation : Vice Chancellor, VSSUT
Signature :

Seal of The Institution :

Place : Burla
Date : 06-03-2024 20:28:03