



AJ INSTITUTE OF ENGINEERING & TECHNOLOGY

A Unit of Laxmi Memorial Education Trust

(Approved by AICTE, New Delhi, Affiliated to Visvesvaraya Technological University, Belgaovi)

RESEARCH & DEVELOPMENT CELL --- AJIET

ACADEMIC YEAR 2022-23

COMMITTEE LIST

Sl No.	Name	Designation and Department	ROLE & RESPONSIBILITY
1	Dr. Gnane S Satapathy	HoD ECE, Associate Professor	Chairman
2	Dr. Ranjan Kumar Mahapatra	Associate Professor, ECE	Coordinator
3	Dr. Sangeetha D M	Associate Professor, CIVIL	Member
4	Dr. Laxmi Gulagappagol	Associate Professor, CSE	Member
5	Mr. John Prakash Veigas	Associate Professor, ISE	Member
6	Dr. Sreejith B K	Associate Professor, MECH	Member
7	Mrs. Vilma D'souza	Asst. Professor, MATH	Member


Principal
Principal

A.J. Institute of Engineering & Technology
Mangaluru - 575 006


Principal
A.J. Institute of Engineering & Technology
Mangaluru - 575 006



Dr. Ranjan Kumar Mahapatra <mahapatra.ranjankumar@gmail.com>

VSPICE2022 submission 8113

1 message

VSPICE2022 <vspice2022@easychair.org>

To: Ranjan Kumar Mahapatra <mahapatra.ranjankumar@gmail.com>

Sat, Oct 29, 2022 at 12:26 PM

Dear authors,

We received your submission to VSPICE2022 ("Advances in VLSI, Signal Processing, Power Electronics, IoT, Communication and Embedded Systems"):

Authors : Ranjan Kumar Mahapatra, N S V Shet, Gnane S Satapathi and B Shivalal Patro
Title : A Comparison of Modulation schemes for wireless sensor networks
Number : 8113

The submission was uploaded by Ranjan Kumar Mahapatra <mahapatra.ranjankumar@gmail.com>. You can access it via the VSPICE2022 EasyChair Web page

<https://easychair.org/conferences/?conf=vspice2022>

Thank you for submitting to VSPICE2022.

Best regards,
EasyChair for VSPICE2022.

Principal

A.J. Institute of Engineering & Technology
Mangaluru - 575 006



A. J. Institute of Engineering and Technology Mangaluru



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email : ajenggcollege@gmail.com | website : www.ajiet.edu.in


ENDORSEMENT FROM THE HEAD OF THE INSTITUTION

PROJECT TITLE: COMBUSTION, PERFORMANCE AND EMISSION CHARACTERISTIC STUDIES OF CI ENGINE USING GRAPHENE AND Al_2O_3 NANOPARTICLES BLENDED WITH DWS BIO DIESEL USING STEAM INDUCTION TECHNOLOGY

Certified that the Institute welcomes participation of Dr. Vighnesha Nayak as the Principal Investigator and Mr. Prasad B. G., as the Co-Investigator for the project and that in the unforeseen event of discontinuance by the Principal Investigator, the Co-Investigator will assume the responsibility of the fruitful completion of the project (with due intimation to KSCST). Institute will provide the infrastructure and any such other administrative and basic facilities will be extended to the investigator(s) until completion of the project. Institute assumes to undertake the financial and other management responsibilities of the project and provide utilization certificate and Statement of Expenditure for the sanctioned amount after completion of the project.

Date: 13-09-2022

Place: AJIET, Mangaluru


Dr. Shantharama Rai C.
Principal

A.J. Institute of Engineering & Technology
Mangaluru - 575 006


Principal

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email : ajengcollege@gmail.com | website : www.ajiet.edu.in

ENDORSEMENT FROM THE HEAD OF THE INSTITUTION

PROJECT TITLE: Integrated photovoltaic and thermoelectric system for efficient utilisation of the entire solar spectrum Certified that the Institute welcomes participation of Dr. Sreejith B K as the Principal Investigator and Mr. Sudheer Kini K, as the Co-Investigator for the project and that in the unforeseen event of discontinuance by the Principal Investigator, the Co-Investigator will assume the responsibility of the fruitful completion of the project (with due intimation to KSCST). Institute will provide the infrastructure and any such other administrative and basic facilities will be extended to the investigator(s) until completion of the project. Institute assumes to undertake the financial and other management responsibilities of the project and provide utilisation certificate and Statement of Expenditure for the sanctioned amount after completion of the project.

Date: 13-09-2022

Place: AJIET Mangaluru


Dr. Shantharama Rai C.
Principal
A.J. Institute of Engineering & Technology
Mangaluru - 575 006


Principal
A.J. Institute of Engineering & Technology
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Placement & Higher Studies

UG [4 Years Program(s)]: Placement & higher studies for previous 3 years

Academic Year	No. of first year students intake in the year	No. of first year students admitted in the year	Academic Year	No. of students admitted through Lateral entry	Academic Year	No. of students graduating in minimum stipulated time	No. of students placed	Median salary of placed graduates(Amount in Rs.)	No. of students selected for Higher Studies
2016-17	300	124	2017-18	20	2018-20	115	102	333800(Three Lakh thirty three thousand six hundred)	8
2017-18	300	223	2018-19	12	2020-21	174	131	424800(Four Lakh twenty Four Thousand Fourty Eight)	11
2018-19	300	252	2019-20	25	2021-22	227	166	363000(Three Lakh Sixty Three Thousand)	8
2019-20	300	289	2020-21	13	2022-23	241	191	390000(Three lakh Sixty Thousand)	2


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IQAC

INTERNAL QUALITY ASSURANCE CELL (IQAC) MEETING (11TH FEB. 2023)

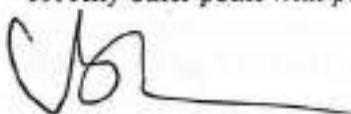
AJIET/MM/322/2022-23


Time:10.00am

IQAC meeting was held with the Chairman on 11.02.2023 at 10.00am in Conference room.

Agenda:

1. Action taken report on the last IQAC meeting
2. Analysis of Academic Results (last year)
3. 2021 NEP Scheme Evaluation-Marks Split-up, Rubrics and Parameters for Integrated Professional Core Course, Professional Core Course Lab, Internship, Social Connect and Responsibility Subjects Branch wise (till 3rd Semester).
4. 2022 NEP Scheme Evaluation-Marks Split-up, Rubrics and Parameters for Integrated Professional Core Course, Professional Core Course Lab, Internship, Social Connect and Responsibility Subject Branch wise. (1st Semester)
5. Identified Gap in the Syllabus, Action Taken and Impact Analysis
6. InternshipDetails (Feedback, Outcome and Impact Analysis) and Final Year Project Progress
7. NEP-Activities and Progress
8. IIC-Activities and Progress
9. Atal-Activities and Progress
10. NIRF-Activities and Progress
11. AICTE 360 Degree Activities and Progress
12. Technical and Co-Curricular Activities Conducted and Planned (Workshops, Conference, Technical Talk and FDPs , Cultural etc (Feedback, Outcome and Impact Analysis)
13. Placement Analysis and Action Taken
14. To discuss the innovative processes adopted by the institution in Teaching-Learning
15. To discuss the initiatives taken to sensitize/promote Research and InnovationActivities in the Institution
16. Analysis of Best Practices Initiated in the Institution (Academic Audit, Min Project, Certifications (Student and Faculty,)
17. Activities carried out by different functional committees of the college
18. To discuss strategies for implementing future plans of action for the year 2023-24(NAAC, Starting New Program and Enhancing the Existing Program)
19. Any other point with permission of the chair


Dr. Antony P J
(Vice Principal and Convener of IQAC)


Dr. Shantharama Rai
(Principal and Chairman of IQAC)

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All HODs: (Civ, CSE, ECE, ISE, Mech, Phys, Chem, Maths, First year Coordinator, IQAC Members)

Minutes of Meeting

Chairperson welcomed the IQAC members & the following points were discussed as per the agenda in the meeting:

- Dr. Antony P J, the Vice Principal and the convener of IQAC of AJIET read the Action taken report on the last IQAC meeting and briefly explained the outcomes of each.
- All the heads of departments has presented their academic result in the meeting and discussed the low result subjects in the meeting, suggestions and advices has been discussed in the meeting to improve the results.
- Dr. Antony P J, the Vice Principal and NEP coordinator of the Institute explained the 2021 NEP Scheme Evaluation and 2022 NEP Scheme Evaluation -Marks Split-up, Rubrics and Parameters for Integrated Professional Core Course, Professional Core Course Lab, Internship, Social Connect and Responsibility Subjects Branch wise (till 3rd Semester).
- All the respective HODs and presented the Identified Gap in the Syllabus, Action Taken and Impact Analysis. The Industry experts have given their valuable suggestions and also ensure their supports to conduct various activities to fill the gaps in the syllabus.
- The respective HODs presented the Internship Details (Feedback, Outcome and Impact Analysis) and Final Year Project Progress in the meeting.
- Dr. Antony P J, the Vice Principal and NEP coordinator briefed the various NEP-Activities like seminar from the external and internal experts, workshops for both students and parents and also various NEP related competitions conducted in the institution for the effective implementation of New Education Policy in our institution.
- Dr. Suresh D, the IIC coordinator briefed the various IIC-Activities conducted as well as planned activities in the institution in this academic year in line with the IIC plan and action. The outcomes are discussed in the meeting and appreciated by the members in the meeting.
- Dr. Gnaneshwar, the Coordinator of the ATAL FDPs (Faculty Development Programme) conducted and planned during the academic year 2022-23. He has briefed the -Activities and Progress and how All India Council for Technical Education (AICTE) in India ranking system to review and rate institutions based on their effectiveness in executing the ATAL Faculty Development Programmes. The ranking seeks to encourage and recognise universities that excel at training and developing faculty members' talents.
- Dr. Gnaneshwar, the Coordinator of the NIRF-briefed about the NIRF activities in the institution. The NIRF (National Institutional Ranking Framework) to rate higher education institutions in the country based on numerous characteristics. The NIRF gathers data from participating Institutions using an online structured questionnaire. Institutions must disclose data on a variety of characteristics, including teaching, learning, research, outreach, and inclusion.
- Mr. Chanchal Antony, the technical committee coordinator briefed the various Technical Activities like Workshops, Conference, Technical Talk and FDPs, Cultural etc., Conducted

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and Planned during this academic year 2022-23. In the meeting, Discussed the Feedback, Outcome and Impact Analysis of all the activities.

- Mr. Vivek Ranjan Bhandary, the Head of Placement and Training department briefed the placement activities and campus placement statics of the current academic year. In the meeting, discussed the Placement Analysis and Action Taken to improve the campus placement. He has presented the various training programs conducted to final and pre-final year students.
- Dr. Shantharama Rai, the Principal of the institution initiated the discussion on innovative processes adopted by the institution in Teaching-Learning
- Dr. Ranjan, the Research Committee coordinator, briefed and discussed the initiatives taken to sensitize/promote Research and Innovation Activities in the Institution
- Dr. Shantharama Rai, the Principal briefed the analysis of Best Practices Initiated in the institution like Academic Audit, Min Project, Certifications programs for Students and Faculties.
- Respective committee chairman briefed the Activities carried out by different functional committees of the college and discussed the various actions taken to improve the quality of the institution in various perspectives.
- The Principal briefed the strategies for implementing future plans of action for the year 2023-24 like NAAC accreditation, Starting New Program in emerging areas as well as Enhancing the Existing Program.

Members Present: 07

Sl.No	Name	Designation	Signature
1	Dr. Shantharama Rai C, Principal	Chairman	
2	Dr. Antony P. J, (Vice Principal) NEP Coordinator	Coordinator	
3	Dr. Gnane Swarnadh Satapathi,(HOD-ECE) NIRF/AICTE 360° feedback Coordinator	Member	
4	Dr. Suresha,(HOD-ISE) IIC/Atal ranking Coordinator	Member	
5	Mr. Manjukiran B,(Asst. Prof-ECE) NBA Coordinator	Member	
6	Dr. Shobhitha Shetty,(HOD-Chem) NAAC Coordinator	Member	
7	Dr. Laxmi Gulagappagol,(Assoc. Prof- CSE) AICTE/University Activity Coordinator	Member	
8	Prof. Vivek Ranjan Bhandary,(HOD-T&P) Placement & Training coordinator	Member	
9	Dr.Rajesh Rai P(HOD-Mech)	HOD Mech, Academic Audit Committee – Coordinator	
10	Dr. Suman Kundapura	HOD -Civil	
11	Dr. Kishore Shetty	First Year Coordinator	
12	Dr. Sadanada Kumar	HOD-Physics	

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13	Dr. Pavitra Shanbhag	HOD-Maths	
10	Mr. Chanchal Antony	Technical Committee - Coordinator	
11	Dr. Ranjan Kumar Mahapatra	Research Committee - Coordinator	

The meeting concluded with thanks from the Chair to members present at 11.30am.

Dr. Antony P J
(Vice Principal and Convener of IQAC)

For Information:

President / Vice President, LMET

CC:

IQAC members

Dr. Shantharama Rai
(Principal and Chairman of IQAC)

Principal

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Principal

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List of IQAC Committee members for the academic year 2022-23

Sl. No.	Name	Department	Designation
1.	Dr. Shantharama Rai C.	Principal	Chairman
2.	Dr. Antony P. J.	HOD-ISE/Vice Principal	Coordinator/ NEP Coordinator
3.	Dr. Gnane Swarnadh Satapathi	HOD – ECE	NIRF/AICTE 360° feedback Coordinator/Member
4.	Dr. Suresha	HOD-ISE	IIC/Atal ranking Coordinator/ Member
5.	Mr. Manjukiran B	Ass.Prof/Coordinator-ECE	NBA Coordinator/Member
6.	Dr. Shobhitha Shetty	HOD-Chemistry	NAAC Coordinator/ Member
7.	Dr. Laxmi Gulagappagol	Assoc.Prof-CSE	AICTE/University Activity Coordinator/ Member
8.	Prof. Vivek Ranjan Bhandary	HOD-T&P	Placement & Trining coordinator /Member

PRINCIPAL
Principal

A.J. Institute of Engineering & Techno
Mangaluru - 575 008

Principal
A.J. Institute of Engineering & Technology
Mangaluru - 575 008



AJIET - ACADEMIC AUDIT COMMITTEE REPORT

Name of the Faculty :

Designation :

Department :

Subjects Handled details: Academic Year: 20__ - 20__

Semester: Even/Odd

Sl. No	Semester	Subject Code	Subject name
1			
2			
3			
4			
5			
6			
7			

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Please fill the details given below:

Sl. No.	Question	Please Mention - Yes/ No			
		Subject 1	Subject 2	Subject 3	Subject 4
1	Lesson plan				
	Uniformity in breakup of contents in each unit with reference to number of hours allotted.				
	Proposed cumulative percentage of portions covered.				
	Distribution of portions against I.A. with reference to Units				
	Observation:				
2	Attendance Register	Please Mention - Yes/ No			
		Subject 1	Subject 2	Subject 3	Subject 4
	Whether the attendance is monitored regularly in the classroom				
	Observation:				
3	Have you found any innovations in the delivery methods other than Blackboard Teaching, Videos, PPTs etc. (Yes/ No) :				
	If Yes; Give details:				
4	Notes (Soft & hard copy) with Question Bank (Yes/ No) :				
	Observation:				
5	Internal Assessment questions quality (consider blooms level)	Please Mention - Yes/ No			
		Subject 1	Subject 2	Subject 3	Subject 4
	on (a) par with blooms taxonomy				
	Questions matches with the COs				

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	Have you found scheme & solution of I.A. question paper.				
Observation on effectiveness of Rubrics					
Sub 1:					
Sub 2:					
Sub 3:					
Sub 4:					
6	Course Feedback:		Please Mention - Yes/ No		
	Subject 1	Course feedback covers all COs			
	Subject 2	Course feedback covers all COs			
	Subject 3	Course feedback covers all COs			
	Subject 4	Course feedback covers all COs			
Observation:					
7	I.A. question paper Syllabus Coverage	Subject 1	Subject 2	Subject 3	Subject 4
	Internal Assessment - 1	__units	__units	__units	__units
	Internal Assessment - 2	__units	__units	__units	__units
	Internal Assessment - 3	__units	__units	__units	__units
Observation on the I.A. question paper Syllabus covered:					
8	A)FOR THEORY COURSES:				
	Course File Records Available	Yes	No	Remarks	
	Course Information Sheet				
	Model lesson plan				

Principal



	Course Time Table			
	Content delivery			
	Attendance register			
	Internal Question paper, Scrutiny Sheet with Scheme of solution			
	Assignment Questions & scheme/Evaluation Parameter			
	Quiz / Seminar topic Details/Evaluation Parameter			
	Tutorial class materials			
	VTU Question paper			
	Notes with Question bank (Hard Copy & Soft Copy)			
	Proof for gap in the syllabus , content beyond the syllabus, Remedial class, Impact analysis (if any)			
	Observation			
8	B)FOR PRACTICAL COURSES:			
	Course File Records Available	Yes	No	Remarks
	Course Information Sheet			
	Cycle of Experiment with batch List (Sub batches if Necessary)			
	Course Time Table			
	Conduction of lab experiment			
	Attendance register			

Principal



	Internal Question paper with Scheme			
	Assignment/ mini Project (if Any)			
	Lab manual Master and student copy (Hard Copy)			
	Additional experiment if any			
	Observation			
	Academic Projects			
	Identification of Problem statement by:	Faculty ()	Student ()	
	Projects guided during Academic Year: ____ - ____			
	Nature of the Project (Please tick (√) appropriate one)		Outcome/achievement on all projects guided	
	i) Industry Relevant		i) Publications	
	ii) Research		ii) Patent	
	iii) Innovative product development		iii) Award	
	iv) Societal application		iv) Funding	
	v) Environment			
	vi) Any Other			
	Whether Project has been funded by any?	Yes ()	No ()	
	If yes, mention the funding agency and amount	Funding Agency		
		Amount		
	Whether the project is submitted to Any Inter-national/National/ State level competition?	Yes ()	No ()	
	If yes, mention the details:			
9				
10	Mentoring	Mention below Yes/ No/NA		
	Whether Done regularly?		If No: Give reason	

Principal



	Whether Mentoring records are well maintained?		If No: Give reason	
	Whether Mentor-student Interaction done		If Yes, frequency of interaction:	
	Mentor-parents Interaction held		If Yes, frequency of interaction:	
	Mention if Any best practices followed?		Details:	
	Outcome/Remarks:			
	FDPs/Workshops/Training/Pedagogy attended	Yes/No	Total No. of FDP's : Total No. of Workshops: Total No. of Training : Total No. of Pedagogy :	
11	Nature of the activity		Duration of the activity	Report submitted to Department
	1.			
	2.			
	3.			
	Submit Copy of the Reports available for the statements made above regarding the FDPs/Workshops/Training/Pedagogy organized: - for the perusal of the committee members Yes/No			
12	Have you conducted/organized any activity such as Training/FDPs/Workshops /Pedagogy programmers/seminars:	Yes/No	Details:	

Principal



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Note: Reports available for the statements made above regarding the Training/FDPs/Workshops/Pedagogy programmes /seminars conducted/organized for the perusal of the committee members - Yes/No	
13	Faculty contribution towards departmental activities:
14	Faculty contribution towards institutional activities:

Name & Signature of the Staff:

Name & Signature of the Internal Auditor:

Principal

A.J. Institute of Engineering & Technology
Mangaluru - 575 008



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Name & signature of the External Auditor:

Name & Signature of the HOD:

Name & Signature of the Institution AAC Chairman:

Name & Signature of the Principal:

Principal

**A.J. Institute of Engineering & Technology
Mangaluru - 575 006**



FOR INTEGRATED PROFESSIONAL CORE COURSE SUBJECT

COURSE FILE INDEX SHEET

1. Course Information Sheet
2. Model lesson plan and cycle of experiment with sub batches
3. Course Time Table
4. Content delivery
5. Attendance registers (Theory and laboratory)
6. Internal Question paper ,Scrutiny Sheet with Scheme of solution and internal assessment question paper and scheme of laboratory
7. Assignment Questions & scheme/Evaluation Parameter and laboratory record evaluation parameter
8. Tutorial class materials
9. VTU Question paper
10. Notes with Question bank (Hard Copy /Soft Copy) and lab manual master and student copy (Hard copy)
11. Proof for gap in the syllabus , content beyond the syllabus, Remedial class, Impact analysis and additional experiments (If any)

CONTENTS IN COURSE INFORMATION SHEET

- 1.1 Preliminary Information
- 1.2 Syllabus , text book, reference books
- 1.3 Course prerequisites
- 1.4 Application area
- 1.5 Course outcomes (Theory and Laboratory)
- 1.6 Course articulation matrix (CO, Po, PSO Mapping)
- 1.7 CO-PO Mapping justification
- 1.8 Gap in the syllabus
- 1.9 Content beyond the syllabus
- 1.10 Delivery instructional methods
- 1.11 Assessment methodology - (direct / indirect) theory and laboratory
- 1.12 Course result analysis (consolidated)
- 1.13 CO attainment level


Principal



FOR THEORY COURSE

COURSE FILE INDEX SHEET

12. Course Information Sheet
13. Model lesson plan
14. Course Time Table
15. Content delivery
16. Attendance register
17. Internal Question paper ,Scrutiny Sheet with Scheme of solution
18. Assignment Questions & scheme/Evaluation Parameter
19. Quiz / Seminar topic Details/Evaluation Parameter
20. Tutorial class materials
21. VTU Question paper
22. Notes with Question bank (Hard Copy /Soft Copy)
23. Proof for gap in the syllabus , content beyond the syllabus, Remedial class, Impact analysis(If any)

CONTENTS IN COURSE INFORMATION SHEET

- 1.14 Preliminary Information
- 1.15 Syllabus , text book, reference books
- 1.16 Course prerequisites
- 1.17 Application area
- 1.18 Course outcomes
- 1.19 Course articulation matrix (CO, Po, PSO Mapping)
- 1.20 CO-PO Mapping justification
- 1.21 Gap in the syllabus
- 1.22 Content beyond the syllabus
- 1.23 Delivery instructional methods
- 1.24 Assessment methodology - (direct/ indirect)
- 1.25 Course result analysis (consolidated)

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1.26 CO attainment level

FOR PRACTICAL COURSE

COURSE FILE INDEX SHEET

1. Course Information Sheet
2. Cycle of Experiment with batch List (*Sub batches if Necessary*)
3. Course Time Table
4. Conduction of lab experiment
5. Attendance register
6. Internal Question paper with Scheme
7. Assignment/ mini Project (If Any)
8. Lab manual Master and student copy (Hard Copy)
9. Additional experiment if any

CONTENTS IN COURSE INFORMATION SHEET

- 1.1 Preliminary Information
- 1.2 Syllabus , text book, reference books
- 1.3 Course prerequisites
- 1.4 Application area
- 1.5 Course outcomes
- 1.6 Course articulation matrix (CO, Po, PSO Mapping)
- 1.7 CO-PO Mapping justification
- 1.8 Additional Experiments
- 1.9 Delivery instructional methods
- 1.10 Assessment methodology – (direct/ indirect)
- 1.11 Course result analysis (consolidated)
- 1.12 CO attainment level

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ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

(ವಿಶ್ವವಿದ್ಯಾಲಯ ಅಧಿನಿಯಮ 1994 ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿಸಲಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

(State University of Government of Karnataka Established as per the VTU Act, 1994)

Phone : 0831-2498100 / 2405

Fax : 0831-2405467

Email : registrar@vtu.ac.in

Web : https://vtu.ac.in

Prof. B. E. Rangaswamy, Ph.D
REGISTRAR

REF: VTU/BGM/BOS/PG Scheme 2022/2024-25/ 774

Date: 21 MAY 2024

NOTIFICATION

Sir,

Subject: The 2022 scheme's 4th Semester AEC's SEE Details regarding...

Reference: VTU/BGM/BOS/AEC-SEE Details/AY2023-24/6884, Dated:
26.03.2024.

VTU/BGM/.../2024-25/601, Dated: 11.05.2024

Annexure I and II, which are attached, include information about the **fourth-semester** Ability Enhancement Courses' SEE (Semester End Examinations) details for the 2022 Scheme.

This notice serves as an official notice to all principals of engineering colleges under the purview of the university, to instruct all teachers concerned to strictly adhere to the course type and SEE details as listed in Annexure I and II.

Please take note that principals have until May 23, 2024, to email the undersigned a scanned copy of the notification that has been signed by every teacher concerned.

Encl: Annexure-I and II

Sd/-
REGISTRAR

To,

1. The Principals of Affiliated, Constituent Engineering Colleges under the ambit of the university
2. The Chairpersons/Program coordinators of the University departments at Kalaburgi, Belagavi, Mysuru, and Bengaluru
3. The Director, ITI SMU VTU Belagavi

Copy to.

1. To the Hon'ble Vice-Chancellor through the secretary to VC, VTU Belagavi for Information
2. The Registrar(Evaluation) VTU Belagavi for information and needful
3. The Special Officer(QPDS) for information and needful
4. The Director, ITI SMU, VTU Belagavi for information and arrange for uploading the circular on the VTU web portal
5. The Special Officer Academic Section VTU Belagavi
6. Office Copy

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2022 SCHEME

Annexure-1

Ability Enhancement Course / Skill Enhancement Course 2022 SCHEME

4th SEM

S.NO.	Subject Code In Scheme	Subject Code In Syllabus	To be read as	Subject Title	SEE Options	SEE Duration
Civil Engineering						
1	BVCL456A	BCVL456A	BVCL456A	Building Information Modelling In Civil Engineering - Basic	Practical	2 Hour
2	BCV456B	BCVL456B	BCVL456B	GIS with Quantum GIS(Lab)	Practical	2 Hour
3	BCV456C	BCV456C		Electronic Waste Management - Issues and Challenges	MCQ	1 Hour
4	BCV456D	BCV456D		Technical Writing Skills	MCQ	1 Hour
Mining Engineering						
1	BMN456A	BMN456A		Finance for Professionals	MCQ	1 Hour
2	BMN456B	BMN456B	BMNL456B	Programming in Python	Practical	2 Hours
3	BMN456C	BMN456C	BMNL456C	Quantum GIS	Practical	2 Hours
4	BMN456D	BMN456D		Technical Writing Skills	MCQ	1 Hour
Computer Science & Engineering						
1	BCS456A	BCS456A		Green IT and Sustainability	MCQ	1 Hour
2	BCS456B	BCS456B		Capacity Planning for IT	MCQ	1 Hour
3	BCS456C	BCS456C		UI/UX	MCQ	1 Hour
4	BCSL456D	BCSL456D		Technical writing using LATEX	Practical	2 Hour
Computer Engineering						
1	BCS456A	BCS456A		Green IT and Sustainability	MCQ	1 Hour
2	BCS456B	BCS456B		Capacity Planning for IT	MCQ	1 Hour
3	BDSL456C	BDSL456C		MERN (0:0:2)	Practical	2 Hours
4	BCSL456D	BCSL456D		Technical writing using LATEX (0:0:2)	Practical	2 Hours
Artificial Intelligence & Data Science						
1	BDSL456A	BDSL456A		Scala (0:0:2)	Practical	2 Hours
2	BDSL456B	BDSL456B		MangoDB (0:0:2)	Practical	2 Hours
3	BDSL456C	BDSL456C		MERN (0:0:2)	Practical	2 Hours
4	BDSL456D	BDS456D	BDSL456D	Julia (0:0:2)	Practical	2 Hours
Artificial Intelligence and Machine Learning						
1	BDSL456A	BDSL456A		Scala (0:0:2)	Practical	2 Hours
2	BDSL456B	BDSL456B		Mango DB (0:0:2)	Practical	2 Hours
3	BDSL456C	BDSL456C		MERN (0:0:2)	Practical	2 Hours
4	BDSL456D	BDSL456D	BDSL456D	Julia (0:0:2)	Practical	2 Hours

REMARKS



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Biotechnology						
1	BBT456A	BBT456A		Hydroponics, Aquaponics and Aeroponics	MCQ	1 Hour
2	BBTL456B	BBTL456B		Water Analysis Lab	Practical	2 Hours
3	BBTL456C	BBTL456C		Extraction methods and herbal products lab	Practical	2 Hours
4	BBT456D	BBT456D		Biopesticides and Biofertilizers	MCQ	1 Hour
Computer & Communication Engineering						
1	BCS456A	BCS456A		Green IT and Sustainability	MCQ	1 Hour
2	BCS456B	BCS456B		Capacity Planning for IT	MCQ	1 Hour
3	BCML456C	BCML456C		System Programming	Practical	2 Hours
4	BCSL456D	BCSL456D		Technical writing using LATEX	Practical	2 Hours
Computer Science & Business System						
1	BCS456A	BCS456A		Green IT and Sustainability	MCQ	1 Hour
2	BCS456B	BCS456B		Capacity Planning for IT	MCQ	1 Hour
3	BCS456C	BCS456C		UI/UX	MCQ	1 Hour
4	BCB456D	BCB456D		Business Communication	MCQ	1 Hour
Computer Science & Design						
1	BCGL456A	BCS456A	BCGL456A	JavaScript and JQuery: Interactive Front-End Web Development	Practical	2 Hours
2	BCGL456B	BCS456B	BCGL456B	Responsive Web design with Bootstrap 5.0	Practical	2 Hours
3	BCGL456C	BCS456C	BCGL456C	Mobile First Web design with W3.CSS	Practical	2 Hours
4	BCSL456D	BCB456D	BCSL456D	Technical writing using LATEX	Practical	2 Hours
Computer Science & Engineering (IoT)						
1	BCO456A	BCO456A		Data Analytics for IOT	MCQ	1 Hour
2	BCS456B	BCS456B		Capacity Planning for IT	MCQ	1 Hour
3	BDSL456C	BDSL456C		MERN	Practical	2 Hours
4	BCS456D	BCSL456D		Technical writing using LATEX	Practical	2 Hours
CSE (Artificial Intelligence & Machine Learning)						
1	BDSL456A	BDSL456A		Scala (0:0:2)	Practical	2 Hours
2	BDSL456B	BDSL456B		MangoDB (0:0:2)	Practical	2 Hours
3	BDSL456C	BDSL456C		MERN (0:0:2)	Practical	2 Hours
4	BCSL456D	BCSL456D		Technical writing using LATEX (0:0:2)	Practical	2 Hours
CSE (Artificial Intelligence)						
1	BDSL456A	BDSL456A		Scala (0:0:2)	Practical	2 Hours
2	BDSL456B	BDSL456B		MangoDB (0:0:2)	Practical	2 Hours
3	BDSL456C	BDSL456C		MERN (0:0:2)	Practical	2 Hours
4	BCSL456D	BCSL456D		Technical writing using LATEX (0:0:2)	Practical	2 Hours



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CSE (Cyber Security)					
1	BCY456A	BCY456A	Workplace security practices	MCQ	1 Hour
2	BCY456B	BCY456B	Managed Detection and Resolution (MDR) in Cyber Security	MCQ	1 Hour
3	BCY456C	BCY456C	Problem management in Cyber Security	MCQ	1 Hour
4	BCSL456D	BCSL456D	Technical writing using LATEX (0:0:2)	Practical	2 Hours
CSE (Data Science)					
1	BDSL456A	BDSL456A	Scala (0:0:2)	Practical	2 Hours
2	BDSL456B	BDSL456B	MangoDB (0:0:2)	Practical	2 Hours
3	BDSL456C	BDSL456C	MERN (0:0:2)	Practical	2 Hours
4	BDSL456D	BDSL456D	Julia (0:0:2)	Practical	2 Hours
CSE (IoT & Cyber Security including Block Chain Technology)					
1	BCO456A	BCO456A	Data Analytics for IOT	MCQ	1 Hour
2	BICL456B	BICL456B	Embedded C	Practical	2 Hours
3	BCY456C	BCY456C	Problem Management in Cyber Security	MCQ	1 Hour
4	BCSL456D	BCSL456D	Technical writing using LATEX (0:0:2)	Practical	2 Hours
Data Science					
1	BDSL456A	BDSL456A	Scala (0:0:2)	Practical	2 Hours
2	BDSL456B	BDSL456B	MangoDB (0:0:2)	Practical	2 Hours
3	BDSL456C	BDSL456C	MERN (0:0:2)	Practical	2 Hours
4	BDSL456D	BDSL456D	Julia (0:0:2)	Practical	2 Hours
Information Science & Engineering					
1	BCS456A	BCS456A	Green IT and Sustainability	MCQ	1 Hour
2	BCS456B	BCS456B	Capacity Planning for IT	MCQ	1 Hour
3	BCS456C	BCS456C	UI/UX	MCQ	1 Hour
4	BCSL456D	BCSL456D	Technical Writing using LaTeX	Practical	2 Hours
Computer Science					
1	BCS456A	BCS456A	Green IT and Sustainability	MCQ	1 Hour
2	BCS456B	BCS456B	Capacity Planning for IT	MCQ	1 Hour
3	BCS456C	BCS456C	UI/UX	MCQ	1 Hour
4	BCSL456D	BCSL456D	Technical writing using LATEX (0:0:2)	Practical	2 Hours
Electronics & Communication Engg					
1	BEC456A	BECL456A	Microcontrollers Lab	Practical	2 Hours



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2	BEC456B			Programmable Logic Controllers	MCQ	1 Hopur
3	BEC456C	BECL456C		Octave Programming	Practical	2 Hours
4	BEC456D	BECL456D		Data Structures Lab Using C	Practical	2 Hours
Biomedical Engineering						
1	BBM456A	BBM456A		Programming in MATLAB	Practical	2 Hours
2	BBM456B	BBM456B		Bioinstrumentation Techniques	MCQ	1 Hours
3	BBM456C	BBM456C		Signal Conditioning Lab using Pspice / Multisim	Practical	2 Hours
4	BBM456D	BBM456D		Python Programming for Instrumentation	Practical	3 Hours
Electrical & Electronics Engineering						
1	BEEL456A	BEE456A		Basics of VHDL Lab	Practical	2 Hours
2	BEEL456B	BEEL456B		Sci Lab / MATLAB for Electrical and Electronic Measurements	Practical	2 Hours
3	BEEL456C	BEEL456C		PCB Design Laboratory	Practical	2 Hours
4	BEEL456D	BEEL456D		Aurdino & Raspberry PI Based Projects	Practical	2 Hours
Electronics & Instrumentation Engineering						
1	BEI456A	BEI456A		Programming in MATLAB / SCILAB	Practical	2 Hours
2	BEI456B	BEI456B		Virtual Instrumentation using LabView	Practical	2 Hours
3	BEI456C	BEI456C		Python Programming for Instrumentation	Practical	2 Hours
4	BEI456D	BEI456D		Arduino UNO Programming	Practical	2 Hours
Electronics & Telecommunication Engg						
1	BEC456A	BECL456A		Microcontrollers Lab	Practical	2 Hours
2	BEC456B	BEC456B		Programmable Logic Controllers (PLC)	MCQ	1 Hopur
3	BEC456C	BECL456C		Octave Programming	Practical	2 Hours
4	BEC456D	BECL456D		Data Structures Lab Using C	Practical	2 Hours
Electronics Engg (VLSI Design and Technology)						
1	BVL456A	BVL456A	BVLL456A	Microcontroller Lab	Practical	2 Hours
2	BVL456B	BVL456B		Programmimng Logic Controllers	MCQ	1 Hour
3	BVL456C	BVL456C	BVLL456C	Octave Programming	Practical	2 Hours
4	BVL456D	BVL456D	BVLL456D	Dta Structure Lab using C	Practical	2 Hours
Electronics and Communication (Advanced Communication Technology)(EA)						
1	BEC456A	BECL456A		Microcontrollers Lab	Practical	2 Hours
2	BEC456B			Programmable Logic Controllers	MCQ	1 Hopur
3	BEC456C	BECL456C		Octave Programming	Practical	2 Hours
4	BEC456D	BECL456D		Data Structures Lab Using C	Practical	2 Hours

Title is missing in Syllabus



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Same as ECE Syllabus

Electronics and Computer Engineering						
1	BUEL456A	BUEL456A		Software Tools and Technologies	Practical	2 Hours
2	BUEL456B	BUEL456B	BUEL456B	Electronic Circuit Application Lab	Practical	2 Hours
3	BUEL456C	BUEL456C		Introduction to Raspberry Pi	Practical	2 Hours
4	BUEL456D	BUEL456D		Octave /Scilab for Signals	Practical	2 Hours
Aeronautical Engineering						
1	BAEL456A	BAE456A	BAEL456A	Fundamentals on Spreadsheet	Practical	2 Hours
2	BAEL456B/ BAS456B			DRONE Pilot Training	MCQ	1 Hour
3	BAE456C			Concept of Augmented Reality	MCQ	1 Hour
4	BAE456D	BAE456A	BAEL456D	Introduction to programming with MATLAB and Python	Practical	2 Hours
Aerospace Engineering						
1	BAS456A	BAS456A	BASL456A	Introduction to Programming in Matlab	Practical	2 Hours
2	BAS456B/ BAE456B	BAS456B/ BAE456B		DRONE Pilot Training	MCQ	1 Hour
3	BAS456C	BAS456C		High Temperature and Smart Materials	MCQ	1 Hour
4	BAS456D	BAS456D		Engineering and Society	MCQ	1 Hour
Agricultural Engineering						
1	BAGL456A	BAGL456A		Simulation and Analysis using Ansys workbench	Practical	2 Hours
2	BAG456B	BAG456B		Economics for Engineers	MCQ	1 Hour
3	BAGL456C	BAGL456C		Introduction to Data Analytics	Practical	2 Hours
4	BAG456D	BAG456D		Human Engineering & Safety	MCQ	1 Hour
Automation and Robotics						
1						
2				Refer Robotics and Automation Syllabus		
3						
4						
Automobile Engineering						
1	BAU456A	BAU456A		Theory and Applications of Sensors and Actuators	MCQ	1 Hour
2	BAU456B	BAU456B	BAUL456B	MATLAB for Engineers (Lab)	Practical	2 Hours
3	BAU456C	BAU456C		Autonomous vehicles	MCQ	1 Hour
4	BAU456D	BAU456D		Drive Cycles of Electric Vehicles	MCQ	1 Hour
Chemical Engineering						
1	BCH456A	BCH456A		Data Analytics	MCQ	1 Hours

In Syllabus wrongly written as
Theory (SEE-Practical)



in SEE MCQ wrongly typed

2	BCH456B	BCH456B		Entrepreneurship Development	Theory	2 Hours
3	BCH456C	BCH456C		Basics of Accounting and Taxation	Theory	2 Hours
4	BCH456D	BCH456D		Energy and Environmental Auditing	MCQ	1 Hours
Industrial & Production Engineering						
1	BIP456A	BIP456A		Essentials of New Product Development	MCQ	1 Hours
2	BIP456B	BIP456B		An overview of Quality Improvement Tools	MCQ	1 Hours
3	BIP456C	BIP456C		Basics of Financial Management	MCQ	1 Hours
4	BIPL456D	BIPL456D		Basics of MATLAB (Laboratory)	Practical	2 hours
Marine Engineering						
1	BMR456A	BMR456A	BMRL456A	Advanced Programming in Python (0-0-2-0)	Practical	2 Hours
2	BMR456B	BMR456B		PLC and SCADA (1:0:0)	MCQ	1 Hour
3	BMR456C	BMR456C		Maritime law (1-0-0-0)	MCQ	1 Hour
4	BMR456D	BMR456D		Fundamentals of Virtual Reality (1-0-0-0)	MCQ	1 Hour
Mechanical & Smart Manufacturing						
1	BMM456A	BMM456A		Quality Engineering	MCQ	1 Hour
2	BMM456B	BMM456B		Mechanical Design Concepts	MCQ	1 Hour
3	BMM456C	BMM456C		Special Manufacturing Processes	MCQ	1 Hour
4	BMM456D	BMM456D				
Mechanical Engineering						
1	BME456A	BME456A	BMEL456A	Introduction to AI & ML [0-0-2]	Practical	2 Hours
2	BME456B	BME456B		Digital Marketing [0-2-0]	MCQ	1 Hour
3	BME456C	BME456C	BMEL456C	Introduction to Data Analytics [0-0-2]	Practical	2 Hours
4	BME456D	BME456D	BMEL456D	Introduction to Programming in C++ [0-0-2]	Practical	2 Hours
Mechatronics						
1	BMT456A	BMT456A	BMTL456A	Mechanism Design and Animation (0-0-2)	Practical	2 Hours
2	BMT456B	BMT456B	BMTL456B	3-D Printing Technology (0-0-2)	Practical	2 Hours
3	BMT456C	BMT456C	BMTL456C	CNC programming and simulation (0-0-2)	Practical	2 Hours
4	BMT456D	BMT456D	BMTL456D	IoT (0-0-2)	Practical	2 Hours
Robotics & Automation						
1	BRA456A	BRA456A		Introduction to AI and ML	MCQ	1 Hour
2	BRA456B	BRA456B	BRA456B	Embedded C Basics	Practical	2 Hours
3	BRA456C	BRA456C		Supervisory Control & Data Acquisition System (SCADA)	MCQ	1 Hour

General Question paper pattern

General Question paper pattern



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4	BRA456D	BRA456D	BRAL456D	Introduction to Raspberry Pi Controllers	Practical	2 Hours
Robotics and Artificial Intelligence						
1	BRI456A	BRI456A	BRIL456A	Spread Sheets for Engineers (0:0:2:0)	Practical	2 Hour
2	BRI456B	BRI456B	BRIL456B	Embedded C Basics (0:0:2:0)	Practical	2 Hour
3	BRI456C	BRI456C		Supervisory Control and Data Acquisition System (SCADA) (1:0:0:0)	MCQ	1 Hour
4	BRI456D	BRI456D	BRIL456D	Applications of Raspberry Pi Controllers (0:0:2:0)	Practical	2 Hour
Silk Technology						
1	BTX456A	BTX456A		Processing of MMFs and Blends	Theory	2 Hour
2	BTX456B	BTX456B		Textured yarn Technology	Theory	2 Hours
3	BTX456C	BTX456C		Eco-friendly process of Textiles	Theory	2 Hours
4	BTXL456D	BTXL456D		Evaluation of textiles fibres using modern tools -lab	Practical	2 hours
Textile Technology						
1	BTX456A	BTX456A		Processing of MMFs and Blends	Theory	2 Hour
2	BTX456B	BTX456B		Textured yarn Technology	Theory	2 Hours
3	BTX456C	BTX456C		Eco-friendly process of Textiles	Theory	2 Hour
4	BTXL456D	BTXL456D		Evaluation of textiles fibers using modern tools -lab	Practical	2 hours
Smart Agritech						
1	BSAL456A	BSAL456A		Mastering MS - Office (MS Word, Excel, PPT, Outlook)	Practical	2 Hours
2	BSAL456B	BSAL456B		Animation in agriculture	Practical	2 Hours
3	BSAL456C	BSAL456C		Principles of Soil Science	Practical	2 Hours
4	BSA456D	BSA456D		Technical writing skills	MCQ	1 Hour

General question paper
Refer Textile Syllabus
General question paper

General question paper
General question paper
General question paper



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CIE and SEE marks entry details on VTU web portal for AEC subjects

Type of the SEE	About CIE	About SEE
MCQ	Actual Marks scored out of 50 are entered on the VTU portal by the concerned teacher	SEE paper shall be set for 50 questions, each of the 01 marks. The pattern of the question paper is MCQ (multiple choice questions). The time allotted for SEE is 01 hour . The student has to secure a minimum of 35% of the maximum marks meant for SEE. Actual Marks are entered on VTU web portal by the evaluator as per maximum marks of question paper (No scale down by system further).
Practical	Actual Marks scored out of 50 are entered on the VTU portal by the concerned teacher	SEE for practical shall be evaluated for 100 marks and scored marks out of 100 marks are entered on the VTU portal by the examiner (System will scale down the marks to 50).
General Theory Question paper	Actual Marks scored out of 50 are entered on the VTU portal by the concerned teacher	<ul style="list-style-type: none"> The question paper will have ten questions. Each question is set for 10 marks. There will be 2 questions from each module. Each of the two questions under a module may or may not have the sub-questions (with maximum sub-questions of 02, with marks distributions 5+5, 4+6, 3+7). The students have to answer 5 full questions, selecting one full question from each module. Digital Valuation is done and marks are evaluated according to question paper defragmentation (No scale-down by the system further)


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