

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

PROCEEDINGS OF 2nd BOARD OF STUDY MEETING HELD ON 07/09/2023 @ 10:30 AM

Dated: **07/09/2023**

Venue / Mode: **ONLINE**

Time: **10:30 AM**

Members Present

S. No.	Name of the Member	Designation	Organization
1	Dr. R N Kulkarni	Chairman	Professor & Head CSE - B.I.T.M. Ballari
2	Faculty Members with different specializations	Members	CSE & AIML Departments
3	Dr. Rajan M A	Member	Research Scientist & CTO ISM Core Group, TCS Research, TCS
4	Dr. Umakanth Kulkarni	Member	Professor & Head, CSE Department, SDMCET, Dharwad
5	Dr. Bharati Harsoor	Member	Professor & Head, ISE Department, PDACE Kalburgi
6	Dr. Basavaraj S Anami	Member	Principal, KLE Institute of Technology, Hubballi
7	Mr. Vijay Kaggal	Member	Chief Strategy Officer, SLK Bengaluru
8	Mr. Sundar K S	Member	Associate Vice – President, IMS Academia, Infosys Ltd., Mysuru
9	Smt. K Triveni	Member	Manager, JSW Torangallu
10	Mr. Suneet Patil	Member	Conversational AI Lead, EVRY India,
11	All faculty of CSE / AI&ML departments	Members	Ballari Institute of Technology & Management, Ballari.

At the outset, the Chairman welcomed all the Honorable members for the Board of Studies (UG) for discussing and finalizing the Scheme and Syllabus for B.E. III & IV Sem. [2022 Scheme] CSE, CSE[AI], CSE[DS] & AI & ML Branches and B.E. V & VI Sem. [2021 Scheme] for CSE and AI & ML Branches. The subjects proposed for BE III & IV Sem. [2022 Scheme] and BE V and VI Sem. [2021] Schemes are shown in the Table below:


Head of the Department,
Dept. of Computer Science & Engg
Ballari Institute of Technology & Management,
(formerly Bellary Engineering College)
BALLARI

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. in Computer Science & Engineering
 Scheme of Teaching and Examinations - 2022
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
 (Effective from the academic year 2023-24)

III SEMESTER

S. N	Course	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	BSC	22MCS31	Graph theory and Discrete Mathematical Structures	TD: Maths, PSB: Maths	3	0	0		03	50	50	100	3
2	IPCC	22CS32	Digital System Design and Computer Organization	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	2		03	50	50	100	4
3	IPCC	22CS33	Operating System	TD & PSB: CSE /AIML /CS[AI],CS[DS]	3	0	2		03	50	50	100	4
4	PCC	22CS34	Data Structures and Applications	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
5	PCCL	22CSL35	Data Structures Lab	TD & PSB: CSE /AIML / CS[AI],CS[DS]	0	0	2		03	50	50	100	1
6	ESC	22CS36	ESC/ETC/PLC Object Oriented Programming With JAVA	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
7	UHV	22CS37	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/ SEC	22CS38X	Ability Enhancement Course / Skill Enhancement Course - III	TD & PSB: CSE /AIML / CS[AI],CS[DS]	If the course is a Theory				01	50	50	100	1
					1	0	0						
					If the course is a Laboratory				02	100	---	100	0
0	0	2											
9	MC	22NS39	National Service Scheme (NSS)	NSS coordinator									
		22PE39	Physical Education (PE) (Sports and Athletics)	Physical Education Director	0	0	2		100	---	100	0	
		22YO39	Yoga	Yoga Teacher									
									Total	550	350	900	20

Ability Enhancement Course – III

22CS381	Unix and Shell Programming	22CS382	Version Controller with GIT
22CS383	R Programming		

Dalence
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IV SEMESTER												
S N	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits
					Theory Lecture	Tutorial Practical/ Drawing	Self Study hours	CIE Marks	SEE Marks	Total Marks		
					L	T	P				S	
1	BSC	22BB41	Biology for Engineers	TD & PSB:	3	0	0	03	50	50	100	3
2	IPCC	22CS42	Micro Controllers and Embedded System	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	2	03	50	50	100	4
3	IPCC	22CS43	Database Management Systems	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	2	03	50	50	100	4
4	PCC	22CS44	Analysis and Design of Algorithms	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0	03	50	50	100	3
5	PCCL	22CSL45	Algorithms Lab	TD & PSB: CSE /AIML / CS[AI],CS[DS]	0	0	2	03	50	50	100	1
6	ESC	22CS46X	ESC/ETC/PLC	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0	03	50	50	100	3
7	AEC / SEC	22SSA47	Soft Skill & Aptitude	TD & PSB: H & S	If the course is a Theory			01	50	50	100	1
					1	0	0					
					If the course is a Laboratory			02				
					0	0	2					
8	UHV	22UH48	Universal human values course	Any Department	1	0	0	01	50	50	100	1
9	MC	22NS49	National Service Scheme (NSS)	NSS coordinator	0	0	2		100	---	100	0
		22PE49	Physical Education (PE) (Sports and Athletics)	Physical Education Director								
		22YO49	Yoga	Yoga Teacher								
Total									500	400	900	20
Engineering Science Course (ESC/ETC/PLC)												
22CS461	System Software			22CS462	Object Oriented Programming with Python							
22CS463	Introduction to Data Analytics											

Signature
 Head of the Department,
 Dept. of Computer Science & Engg.
 Ballari Institute of Technology & Management,

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. V SEMSTER CSE & AI&ML

SL	Course category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration Of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	PCC	21CS51	Automata Theory & Compiler Design	Concerned Department	CSE	3	0	0	3	3	50	50	100
02	PCC	21CS52	System Software and Operating System	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS53 / 21AI53	Database Management System	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS54X / 21AI54X	Professional Elective – 1	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS55X / 21AI55X	Open Elective - 1	Other departments offering the course	Other departments offering the course	3	0	0	3	3	50	50	100
06	PCC	21CSL56 / 21AIL56	DBMS Lab with Mini Project	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL57	System Software & Operating System Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	AEC	21ADA580	Advanced Aptitude	Humanities	Humanities	1	0	0	1	2	50	50	100
09	AEC	21CS58X / 21AI58X	AEC	Concerned Department	CSE	1	0	0	1	2	50	50	100
10	HS	21ENV59	Environmental Studies	Humanities	Humanities	1	0	0	1	2	50	50	100
Total									20		500	500	1000

Ability Enhancement Course

01	21CS581 / 21AI581	C# and .Net Framework
02	21CS582 / 21AI582	PYTHON Programming

Professional Elective – 1

01	21CS541 / 21AI541	Agile Technology
02	21CS542 / 21AI542	Introduction to Data Analytics
03	21CS543 / 21AI543	Cyber Security

Open Elective -1

01	21CS551	Introduction to Data Structures
02	21CS552	Introduction to Database Management Systems
03	21CS553	Introduction to PYTHON Programming
04	21CS554	Introduction to Operating System

Signature

Head of the Department,



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. VI SEMSTER CSE & AI&ML

SL	Course Category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	HS	21CS61 / 21AI61	Software Project Management	Humanities / Concerned Department	Humanities / CSE	3	0	0	3	3	50	50	100
02	PCC	21CS62	Computer Networks	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS63	Artificial Intelligence & Machine Learning	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS64X / 21AI64X	Professional Elective - 2	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS65X / 21AI65X	Open Elective - 2	Other departments offering the course	CSE	3	0	0	3	3	50	50	100
06	PCC	21CSL66	Computer Networks Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL67	AI&ML Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	PW	21MN68	Mini Project	Concerned Department	CSE	Two contact hours /week for interaction between the faculty and students			2	3	50	50	100
09	AEC	21CS69X / 21AI69X		Concerned Department	CSE	1	0	0	1	2	50	50	100
10	INT	21INT691	Summer Internship-II	Completed during the intervening period of IV and V semesters.				2	---	100	-	100	
Total									22		550	450	1000

Ability Enhancement Course

01	21CS69A	Computer Graphics using Open GL
02	21CS69B	Mobile Application Development
03	21CS69C	Robotic Process Automation

Professional Elective - 2

01	21CS641 / 21AI641	Cloud Computing
02	21CS642 / 21AI642	Block Chain Technology
03	21CS643 / 21AI643	Natural Language Processing

Open Elective -2

01	21CS651	Programming in JAVA
02	21CS652	Introduction to Data Analytics
03	21CS653	Introduction to Artificial Intelligence & Machine Learning
04	21CS654	Introduction to Cyber Security

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 Dept. of Computer Science & Engg

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
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The Chairman of the Board presented the Scheme and Syllabus for both 2021 and 2022 Scheme subjects. The suggestions and the Action taken is given below:

DBMS – 21CS53	Suggestions	<ul style="list-style-type: none"> Take use case from Industry/Banking/... and ask the students to identify Entity, ER Diagram, Normalization,
	Action Taken	<ul style="list-style-type: none"> Informed the Couse faculty to implement in the suggested order
Agile Technology – 21CS54	Suggestions	<ul style="list-style-type: none"> Invite Industry People and Conduct Workshop on recent advancement in the area
	Action Taken	<ul style="list-style-type: none"> We will plan to Conduct the Workshop / Seminar in Collaboration with Industry
Data Analytics – 21CS54A	Suggestions	<ul style="list-style-type: none"> Incorporate how to restructure data
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Cyber Security – 21CS54B	Suggestions	<ul style="list-style-type: none"> Data Privacy is Missing – Add privacy aspects or conduct training or Workshop
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Robotic Process Automatio n - 21CS69C	Suggestions	<ul style="list-style-type: none"> How you will demonstrate the tool and lab Components
	Action Taken	<ul style="list-style-type: none"> As the Institute has already signed MoU with Robotic Process Automation [Automation Anywhere University] and UiPATH Four Faculty members are already certified from UiPATH Demonstration of the Tool and development of the Chat Bots will be taken care in the Laboratory
Overall Suggestions		<p>The following points were suggested by the Members:</p> <ol style="list-style-type: none"> Remove Question marks and definition kind of things from the Syllabus [What is AI?] Introduce NOSQL subject in the higher semester Do not list experiments in the Syllabus WEB 4.0 can be added as per Industry Perspective
Action Taken		<ul style="list-style-type: none"> Removed definition kind of things from the entire syllabus Plan to Introduce NOSQL in the Higher Semester List of experiments are removed wherever required Plan to introduce WEB 4.0 as Ability Enhancement Course


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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Signature of the Members

S. No.	Name of the Member	Designation	Signature
1	Dr. R N Kulkarni	Chairman	
2	Dr. Rajan M A	Member	ONLINE
3	Dr. Umakanth Kulkarni	Member	ONLINE
4	Dr. Bharati Harsoor	Member	ONLINE
5	Dr. Basavaraj S Anami	Member	ONLINE
6	Mr. Vijay Kaggal	Member	--
7	Mr. Sundar K S	Member	ONLINE
8	Smt. K Triveni	Member	ONLINE
9	Mr. Suneet Patil	Member	ONLINE
10	Dr. C.K. Srinivas	member	
11	Usman K	member	
12	A. panirama prasad	Member	
13	Dr B. M. Vidyavall	member	
14	Dr. Rajashree W. Burede	member	
15	Dr. Chidananda. H.	member	
16	Pratibha Mishra.	Member	
17	Sudhakar. Avareddy	member	
18	Manjula K	Member	
19	Dadapeer	member	
20	Ms. Shafique	Member	
21	DR. SURESH. Y	MEMBER	
22	Dr. Anita S. Patil.	Member	
23	Dr. T.R. Muhibur Rahman	Member	
24	DR. GIRISH. KUMAR	Member	
25	Sreenivasa M	Member	
26	CTM Praveen Kumar	Member	
27			

Head of the Department,
 Dept. of Computer Science & Engg
 Ballari Institute of Technology & Management



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(An ISO 9001:2015 Certified Institution)

NAAC A+ ACCREDITED & Autonomous Institution

DEPARTMENT OF CIVIL ENGINEERING

DATE: 01/09/2023

BOS MEETING HELD ON 01-09-23 (10:00AM – 01:00PM, BLENDED MODE)

Members participated in the meeting.

INTERNAL MEMBERS

1. Dr. D Manikanta
2. Mr. Basavaraj B
3. Mr. Md Khalid S
4. Mr. Anil Kumar H M
5. Mr. Ravichandra H
6. Mr. Sivakumar K

EXTERNAL MEMBERS

1. Dr. S V Dinesh
2. Dr. D.L. Venkatesh Babu
3. Dr. Adarsh Chatra
4. Dr. R T Srinivas
5. Mr. Ram Mohan Desai
6. Mr. Vinayak B
7. Mr. Irshad Ali

AGENDA

1. Approval of credits allocation for four-year degree program.
2. Approval of 2021 Scheme & Syllabus (i.e. for V & VI Semester) and 2022 Scheme & Syllabus (i.e. for III & IV Semester) for the academic year 2023-2024.

MINUTES OF THE MEETING

1. Total credits (160) proposed for four-year civil engineering program is been discussed and finalized the same by all members.
2. 2021 Scheme & Syllabus (i.e. for V & VI Semester) and 2022 Scheme & Syllabus (i.e. for III & IV Semester) for the academic year 2023-2024 and is discussed by all the committee members.



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DEPARTMENT OF CIVIL ENGINEERING

Following are the key suggestions given by BOS members with respect to 2021 and 2022 schemes respectively:

- As per the BOS member suggestion in the subject Code 21CV51, the classification of introduction to working stress and limit state design is differentiated. The codes references of IS Codes and American Codes are incorporated. Also, the serviceability is mentioned in the suggested learning resources, also the important codes references books are presented.
- In Structural Analysis for the course code 21CV52, Module 4 and Module 5 title has been modified as Matrix Method of Analysis (Flexibility Matrix) & Matrix Method of Analysis (Stiffness Matrix).
- For course code 21CV53 as per BOS Modules suggestion the title Basic Geotechnical Engineering is renamed as Geotechnical Engineering. In Module 1, the BIS Classification is incorporated. Furthermore, in suggested learning resources, the reference books are modified as per the directions of BOS members.
- In course code 21CV541, In Module 4, the contents have been altered in the chronological order i.e. reservoir and canal has been altered. In suggested learning resources, the references books have been modified.
- For course code 21CV543, In Module-1, the introduction to handling and erection stresses in prefabricated structures is added.
- Course code 21CV544 i.e. Disaster Management and Mitigation is transferred to open elective and 21CV551 i.e. Railways Harbors Tunnel & Airports is transferred to professional elective as per the direction of BOS members.
- In course code 21CVL56 i.e. Environmental Engg Lab, the word demonstration used for few experiments is been removed.
- In course code 21CV63, for the suggested learning resources, the references books have been modified.
- In course code 21CV642, the reference books have been modified.
- In course code 21AEC690, the title of Civil Software Lab is modified to Q – GIS and Civil Software Lab.
- In course code 22BCV405D, (Emerging Science Course) the water Shed Management subject is been replaced with Alternate Building Materials.

CONCLUSIONS

The meeting concluded with the above proposed suggestions and addressed the revisions of 2021 and 2022 schemes/syllabus and further submitted the same for final approval by the BOS committee members.


HOD SIGNATURE 7/9/23

Re: REVISED SCHEMES AND SYLLABUS AFTER THE BOS MEETING SCHEDULED ON 01.09.2023 FOR APPROVAL

VENKATESH BABU D.L. <drdlvbabu@gmail.com>

Fri 9/8/2023 4:38 PM

To: Dr. D Manikanta <dr.manikanta@bitm.edu.in>

Cc: Dinesh S. Viswanathaiah <dineshsv2004@gmail.com>; Irshadali <irshadaliklbg@gmail.com>; Adarsh chatra <adarshchatra@gmail.com>; Srinivasrao Raydurg <srinivasrao.raydurg@jsw.in>; Vinayaka Naik <swathicivilconsultancy@gmail.com>; Ram Mohan Desai <rmdesai@dpcpl.com>; DEAN ACADEMIC <dean_academics@bitm.edu.in>

Sir

I have approved the changes / suggestions made by BoS members are updated in Scheme and Details Syllabus of all the years .

Thank you

Regards

On Thu, Sep 7, 2023, 4:12 PM Dr. D Manikanta <dr.manikanta@bitm.edu.in> wrote:

Dear Respected BOS Members

Hope your doing well

Herewith reference to our Board of studies meeting conducted on September 1st , 2023.

The suggestions given by the BOS members have been addressed and incorporated in the revised scheme & syllabus for your kind perusal.

In this purview, I hereby request you to refer the corrected suggestions incorporated and approve the 2021 (i.e. for V/VI semester) and 2022 (i.e. for III/IV semester) scheme & syllabus for your information. Kindly send me an approval email for the same.

Thanking you

Best Regards,

Dr. D. Manikanta

Associate Professor & Head

Department of Civil Engineering

Ballari Institute of Technology & Management (BITM, Autonomous), Ballari.

manikanta299@gmail.com/dr.manikanta@bitm.edu.in

Mob: +91-8072162546

Re: [External Mail] REVISED SCHEMES AND SYLLABUS AFTER THE BOS MEETING
SCHEDULED ON 01.09.2023 FOR APPROVAL

Srinivasrao Raydurg <srinivasrao.raydurg@jsw.in>

Tue 9/19/2023 3:00 PM

To: Dr. D Manikanta <dr.manikanta@bitm.edu.in>

Cc: VENKATESH BABU D.L. <drdlvbabu@gmail.com>; dineshsv2004@gmail.com
<dineshsv2004@gmail.com>; irshadaliklbg@gmail.com <irshadaliklbg@gmail.com>; Adarsh chatra
<adarshchatra@gmail.com>; swathicivilconsultancy@gmail.com
<swathicivilconsultancy@gmail.com>; rmdesai@dpcpl.com <rmdesai@dpcpl.com>; DEAN ACADEMIC
<dean_academics@bitm.edu.in>

Sir,

I have approved the changes / suggestions made by BoS members that are updated in the Scheme and Details Syllabus of all the years .

Regards

Dr R.T.Srinivasa Rao

On Thu, Sep 7, 2023 at 4:12 PM Dr. D Manikanta <dr.manikanta@bitm.edu.in> wrote:

Dear Respected BOS Members
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Thanking you

Best Regards,
Dr. D. Manikanta
Associate Professor & Head
Department of Civil Engineering
Ballari Institute of Technology & Management (BITM, Autonomous), Ballari.
manikanta299@gmail.com / dr.manikanta@bitm.edu.in
Mob: +91-8072162546

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Dr. R T Srinivasa Rao
Associate Vice President
Environment Management
JSW Steel Limited, Vijayanagar Works, Toranagallu,
Sandur (Taluk) | Bellary (Dist) | Karnataka | PIN-583 275

Re: REVISED SCHEMES AND SYLLABUS AFTER THE BOS MEETING SCHEDULED ON 01.09.2023 FOR APPROVAL

Adarsh chatra <adarshchatra@gmail.com>

Wed 9/13/2023 10:34 AM

To: VENKATESH BABU D.L. <drdlvbabu@gmail.com>

Cc: Dr. D Manikanta <dr.manikanta@bitm.edu.in>; Dinesh S. Viswanathiah <dineshsv2004@gmail.com>; Irshadali <irshadaliklbg@gmail.com>; Srinivasrao Raydurg <srinivasrao.raydurg@jsw.in>; Vinayaka Naik <swathicivilconsultancy@gmail.com>; Ram Mohan Desai <rmdesai@dpcpl.com>; DEAN ACADEMIC <dean_academics@bitm.edu.in>

Respected sir,

I have approved the syllabus and scheme. The corrections suggested by the BOS members are incorporated by Dept of Civil Engg., BIT Bellary.

Thank you.

On Fri, 8 Sept 2023, 4:38 pm VENKATESH BABU D.L., <drdlvbabu@gmail.com> wrote:

Sir

I have approved the changes / suggestions made by BoS members are updated in Scheme and Details Syllabus of all the years .

Thank you

Regards

On Thu, Sep 7, 2023, 4:12 PM Dr. D Manikanta <dr.manikanta@bitm.edu.in> wrote:

Dear Respected BOS Members

Hope your doing well

Herewith reference to our Board of studies meeting conducted on September 1st, 2023.

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Thanking you

Best Regards,

Dr. D. Manikanta

Associate Professor & Head

Department of Civil Engineering

Ballari Institute of Technology & Management (BITM, Autonomous), Ballari,

manikanta299@gmail.com/dr.manikanta@bitm.edu.in

Mob: +91-8072162546

Re: [External Mail] REVISED SCHEMES AND SYLLABUS AFTER THE BOS MEETING
SCHEDULED ON 01.09.2023 FOR APPROVAL

Vinayaka Naik <swathicivilconsultancy@gmail.com>

Thu 9/21/2023 9:49 AM

To:Srinivasrao Raydurg <srinivasrao.raydurg@jsw.in>

Cc:Dr. D Manikanta <dr.manikanta@bitm.edu.in>;VENKATESH BABU D.L.

<drdlvbabu@gmail.com>;Dinesh S. Viswanathaiah <dineshsv2004@gmail.com>;irshadaliklbg@gmail.com

<irshadaliklbg@gmail.com>;Adarsh chatra <adarshchatra@gmail.com>;rmdesai@dpcpl.com

<rmdesai@dpcpl.com>;DEAN ACADEMIC <dean_academics@bitm.edu.in>

Respected sir ,

I have approved the syllabus changes incorporated as per BOS gudilanacue and suggestions sir .
Thank you

Regards

Dr.Vinayaka

Managing Director

Swathi Civil consultancy

Banglore -64

9663868893

**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

BITM/BOS/2023-24/CSE/09

05/09/2023

CIRCULAR

All the faculty members of CSE, AIML, CS [Data Science] and CS [Artificial Intelligence] are hereby informed that Board of Studies (BOS) meeting to approve autonomous syllabus of B.E 3rd Year of 2021 Scheme and 2nd Year of 2022 Scheme is scheduled on 07/09/2023 from 10:30 AM onwards. The meeting is expected to be conducted in online mode. Faculty members having more than 5 Years' Experience are requested to make it convenient to attend the meeting. The meeting link is already shared to your official E-mail Id.

Chairman
05/09/2023
Chairman
Joint BoS





Basavarajeswari Group of Institutions

ಬಳ್ಳಾರಿ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ & ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್, ಬಳ್ಳಾರಿ



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

Autonomous Institute under Visvesvaraya Technological University, Belagavi
(Recognized by Govt. of Karnataka & AICTE, New Delhi)

"Jnana Gangotri" Campus, #873/2, Ballari-Hosapele Road, Near Allipura, Ballari-583 104 (Karnataka)

Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/01

Date: 05/09/2023

To,

Dr. Basavaraj Anami

Registrar,

KLE Technological University,

Hubli

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)

Dr. B.S. KHENED

Dean Academics



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/02

Date: 05/09/2023

To,

Dr. Rajan M. A.

Research Scientist & CTO

ISM Core Group,

TCS Research, TCS Bengaluru

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)**Dr. B.S. KHENED**

Dean Academics

Ballari Institute of Technology & Management



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/03

Date: 05/09/2023

To,

Dr. Umakanth Kulkarni
Professor CSE Department,
SDMCET Dharwad

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)

Dr. B.S. KHENED
Dean Academics
Ballari Institute of Technology & Management





Basavarajeswari Group of Institutions
ಬಳ್ಳಾರಿ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ & ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್, ಬಳ್ಳಾರಿ



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/04

Date: 05/09/2023

To,

Dr. Bharati Harsoor
Professor & Vice Principal
PDACE Kalburgi

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)

Dr. B.S. KHENED

Dean Academics

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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/05

Date: 05/09/2023

To,

Mr. Vijay Kaggal

Chief Strategy Officer,

SLK Bengaluru

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely


Dr. B.S. Khened
(Dean-Academics)

Dr. B.S. KHENED

Dean Academics

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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/06

Date: 05/09/2023

To,

Mr. Sunder K S

Associate Vice – President, IMS Academia,

Infosys Ltd., Mysuru

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)

Dr. B.S. KHENED

Dean Academics

Ballari Institute of Technology & Management





Basavarajeswari Group of Institutions

ಬಳ್ಳಾರಿ ಇನ್ಫೋಟೆಕ್ನಾಲಜಿ ಅಂಡ್ ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್, ಬಳ್ಳಾರಿ



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/08

Date: 05/09/2023

To,

Mr. Suneet Patil

Solution Architect

Amazon

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)

Dr. B.S. KHENED

Dean Academics

Ballari Institute of Technology & Management



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/CSE/07

Date: 05/09/2023

To,

Mrs. K Triveni

Manager,

JSW torangallu

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Computer Science & Engineering** board is scheduled on **07/09/2023** from **10:30AM** onwards at our institute in **online mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)**Dr. B.S. KHENED**

Dean Academics

Ballari Institute of Technology & Management

Re: Request to Approve the Scheme and Syllabus of BE III, IV, V and VI Sem.

bharati a jeergi <bharati_a@rediffmail.com>

Wed 20-Sep-23 11:28 AM

To: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Dear sir,

Its fine and u can continue with it

Thanks & Regards

From: "Dr. R N Kulkarni" <rnkulkarni@bitm.edu.in>

Sent: Tue, 19 Sep 2023 14:05:50 GMT+0530

To: Sundar K S <sundarks@infosys.com>, "rajan.ma@tcs.com" <rajan.ma@tcs.com>, "upkulkarni@yahoo.com" <upkulkarni@yahoo.com>, "anami_basu@hotmail.com" <anami_basu@hotmail.com>, Triveni Kakimani <triveni.kakimani@gmail.com>, "bharati_a@rediffmail.com" <bharati_a@rediffmail.com>

Subject: Request to Approve the Scheme and Syllabus of BE III, IV, V and VI Sem.

Dear Respected BoS members,

As per the discussion held in the BoS Meeting on 07/09/2023 at 10:30 AM, I am herewith sharing the Final Copy of:

1. BE III & IV Sem. Scheme and Syllabus [2022 Scheme]
2. BE V and VI Sem. Scheme and Syllabus [2021 Scheme]

after incorporating all your suggestions. Kindly approve the same.

Kind Regards

Dr R N Kulkarni

BoS Chairman

Re: Request to Approve the Scheme and Syllabus of 21 Scheme and 22 Scheme

Triveni Kakimani <triveni.kakimani@gmail.com>

Tue 19-Sep-23 3:59 PM

To: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Cc: Sundar K S <sundarks@infosys.com>; Dept. of CSE <csestaff@bitm.edu.in>; Dept. of AIML <aiml@bitm.edu.in>; rajan.ma@tcs.com <rajan.ma@tcs.com>; suneetpatil90@gmail.com <suneetpatil90@gmail.com>; anami_basu@hotmail.com <anami_basu@hotmail.com>; upkulkarni@yahoo.com <upkulkarni@yahoo.com>; bharati_a@rediffmail.com <bharati_a@rediffmail.com>

Approved sir.

On Tue, Sep 19, 2023 at 3:00 PM Sundar K S <sundarks@infosys.com> wrote:

Pls go ahead

-----Original Message-----

From: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Sent: Saturday, September 16, 2023 12:24 PM

To: Dept. of CSE <csestaff@bitm.edu.in>; Dept. of AIML <aiml@bitm.edu.in>; rajan.ma@tcs.com;
Sundar K S <sundarks@infosys.com>; suneetpatil90@gmail.com; Triveni Kakimani
<triveni.kakimani@gmail.com>; anami_basu@hotmail.com; upkulkarni@yahoo.com;
bharati_a@rediffmail.com

Subject: Request to Approve the Scheme and Syllabus of 21 Scheme and 22 Scheme

[**EXTERNAL EMAIL**]

Dear Respected BoS members,

As per the discussion held in the BoS Meeting on 07/09/2023 at 10:30 AM, I am herewith sharing the Final Copy of:

1. BE III & IV Sem. Scheme and Syllabus [2022 Scheme] 2. BE V and VI Sem. Scheme and Syllabus [2021 Scheme]

after incorporating all your suggestions. Kindly approve the same.

Kind Regards
Dr R N Kulkarni
BoS Chairman

--
Regards,
Triveni

Re: Request to Approve the Scheme and Syllabus of BE III, IV, V and VI Sem.

Rajan A <rajan.ma@tcs.com>

Tue 19-Sep-23 2:48 PM

To: Sundar K S <sundarks@infosys.com>; Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>; upkulkarni@yahoo.com <upkulkarni@yahoo.com>; anami_basu@hotmail.com <anami_basu@hotmail.com>; Triveni Kakimani <triveni.kakimani@gmail.com>; bharati_a@rediffmail.com <bharati_a@rediffmail.com>

TCS Confidential

Fine With me too.

Thanks & Regards

Dr. Rajan M A

Senior Scientist, Applied Cryptography Group

Cyber Security and Privacy Research Area

TCS Research

Tata Consultancy Services

18, SJM Towers, Sheshadri Road,

Gandhinagar,

Bangalore - 560009, Karnataka

India

Ph:- 080 67247961

Buzz:- 4847961

Cell:- +91 9480319023/9845985805

Mailto: rajan.ma@tcs.com

Website: <http://www.tcs.com>

TCS Confidential

From: Sundar K S <sundarks@infosys.com>

Sent: Tuesday, September 19, 2023 2:42 PM

To: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>; Rajan A <rajan.ma@tcs.com>; upkulkarni@yahoo.com <upkulkarni@yahoo.com>; anami_basu@hotmail.com <anami_basu@hotmail.com>; Triveni Kakimani <triveni.kakimani@gmail.com>; bharati_a@rediffmail.com <bharati_a@rediffmail.com>

Subject: RE: Request to Approve the Scheme and Syllabus of BE III, IV, V and VI Sem.

External Email – Be cautious while opening any links or attachments.

Pls go ahead

Regards,

Sundar

-----Original Message-----

From: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Sent: Tuesday, September 19, 2023 2:06 PM

23, 2:50 PM

Mail - Dr. R N Kulkarni - Outlook

To: Sundar K S <sundarks@infosys.com>; rajan.ma@tcs.com; upkulkarni@yahoo.com; anami_basu@hotmail.com; Triveni Kakimani <triveni.kakimani@gmail.com>; bharati_a@rediffmail.com
Subject: Request to Approve the Scheme and Syllabus of BE III, IV, V and VI Sem.

[**EXTERNAL EMAIL**]

Dear Respected BoS members,

As per the discussion held in the BoS Meeting on 07/09/2023 at 10:30 AM, I am herewith sharing the Final Copy of:

1. BE III & IV Sem. Scheme and Syllabus [2022 Scheme] 2. BE V and VI Sem. Scheme and Syllabus [2021 Scheme]

after incorporating all your suggestions. Kindly approve the same.

Kind Regards

Dr R N Kulkarni

BoS Chairman

=====

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19/23, 2:51 PM

Mail - Dr. R N Kulkarni - Outlook

RE: Request to Approve the Scheme and Syllabus of BE III, IV, V and VI Sem:

Sundar K S <sundarks@infosys.com>

Tue 19-Sep-23 2:42 PM

To: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>; rajan.ma@tcs.com
<rajan.ma@tcs.com>; upkulkarni@yahoo.com <upkulkarni@yahoo.com>; anami_basu@hotmail.com
<anami_basu@hotmail.com>; Triveni Kakimani <triveni.kakimani@gmail.com>; bharati_a@rediffmail.com
<bharati_a@rediffmail.com>

Pls go ahead

Regards,
Sundar

-----Original Message-----

From: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Sent: Tuesday, September 19, 2023 2:06 PM

To: Sundar K S <sundarks@infosys.com>; rajan.ma@tcs.com; upkulkarni@yahoo.com;
anami_basu@hotmail.com; Triveni Kakimani <triveni.kakimani@gmail.com>; bharati_a@rediffmail.com
Subject: Request to Approve the Scheme and Syllabus of BE III, IV, V and VI Sem.

[**EXTERNAL EMAIL**]

Dear Respected BoS members,

As per the discussion held in the BoS Meeting on 07/09/2023 at 10:30 AM, I am herewith sharing the Final Copy of:

1. BE III & IV Sem. Scheme and Syllabus [2022 Scheme] 2. BE V and VI Sem. Scheme and Syllabus [2021 Scheme]

after incorporating all your suggestions. Kindly approve the same.

Kind Regards
Dr R N Kulkarni
BoS Chairman

Re: Request to Approve the Scheme and Syllabus of 21 Scheme and 22 Scheme

Suneet Patil <suneetpatil90@gmail.com>

Sat 16-Sep-23 12:34 PM

To: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Reviewed and approved from my side.

On Sat, 16 Sep 2023 at 12:24 PM, Dr. R N Kulkarni <rnkulkarni@bitm.edu.in> wrote:

Dear Respected BoS members,

As per the discussion held in the BoS Meeting on 07/09/2023 at 10:30 AM, I am herewith sharing the Final Copy of:

1. BE III & IV Sem. Scheme and Syllabus [2022 Scheme]
2. BE V and VI Sem. Scheme and Syllabus [2021 Scheme]

after incorporating all your suggestions. Kindly approve the same.

Kind Regards

Dr R N Kulkarni

BoS Chairman

Re: Fw: Joint Board of studies (BOS) Meeting of Computer Science & Engineering [CSE] / Artificial Intelligence & Machine Learning [AI&ML], CS [Data Science] and CS [Artificial Intelligence].

upkulkarni1968 KULKARNI <upkulkarni1968@gmail.com>

Mon 16-Oct-23 4:18 PM

To: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

I do hereby give my acceptance for the changes done as per the discussion done in BoS.

Thanks and
with regards

Dr. Umakant P. Kulkarni

Professor, Department of Computer Science and Engineering

SDM College of Engineering and Technology

Dhavalagiri

Dharwad-580002

Karnataka State

India.

Mobile: 09448915310

On Fri, Oct 6, 2023 at 7:39 AM Dr. R N Kulkarni <rnkulkarni@bitm.edu.in> wrote:

Thanks & Regards,

Dr. R. N. Kulkarni

Professor & Head

Dept. of Computer Science & Engg,

Ballari Institute of Technology & Management,

"Jnana Gangotri" Campus, Ballari - 583104.

Cell: +91 9448572340

Email: rnkulkarni@bitm.edu.in

rnkulkarni07@gmail.com

Department Vision:

To be a state of the art learning center that responds to the future challenges.

Department Mission:

- To impart knowledge with relevant theoretical and practical aspects.
- To inculcate design and development process relevant to the industry.

- To enhance leadership capabilities through team work and research

From: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Sent: Thursday, October 5, 2023 9:17 PM

To: upkulkarni@yahoo.com <upkulkarni@yahoo.com>

Subject: Fw: Joint Board of studies (BOS) Meeting of Computer Science & Engineering [CSE] / Artificial Intelligence & Machine Learning [AI&ML], CS [Data Science] and CS [Artificial Intelligence].

Thanks & Regards,

Dr. R. N. Kulkarni

Professor & Head

Dept. of Computer Science & Engg,

Ballari Institute of Technology & Management,

"Jnana Gangotri" Campus, Ballari - 583104.

Cell: +91 9448572340

Email: rnkulkarni@bitm.edu.in

rnkulkarni07@gmail.com

Department Vision:

To be a state of the art learning center that responds to the future challenges.

Department Mission:

- To impart knowledge with relevant theoretical and practical aspects.
- To inculcate design and development process relevant to the industry.
- To enhance leadership capabilities through team work and research

From: Dr. R N Kulkarni <rnkulkarni@bitm.edu.in>

Sent: Tuesday, September 5, 2023 4:30 PM

To: upkulkarni@yahoo.com <upkulkarni@yahoo.com>

Subject: Joint Board of studies (BOS) Meeting of Computer Science & Engineering [CSE] / Artificial Intelligence & Machine Learning [AI&ML], CS [Data Science] and CS [Artificial Intelligence].

Dear Sir / Madam,

On behalf of the Ballari Institute of Technology and Management, Ballari, I take the privilege of inviting you as a member of the Board of studies (BOS) of Computer Science & Engineering [CSE] / Artificial Intelligence & Machine Learning [AI&ML], CS [Data Science] and CS [Artificial Intelligence]. The meeting is scheduled on 07.09.2023 at 10:30 AM in ONLINE mode.

Copy of Draft Syllabus is attached with the mail. The agenda of the meeting is to finalize the Scheme and Syllabus of:

9:41 AM

B.E. III / IV semester for all the courses – 2022 SCHEME

B.E. V / VI semester for all the courses – 2021 SCHEME

The meeting link is:

https://teams.microsoft.com/dl/launcher/launcher.html?url=%2F%20%23%2F%2Fmeetup-join%2F19%3Ameeting_ZmFjYjMwMDAtMTE2OS00ZjZlTg0ZjgtNDAYY2U0MjRkMjJl%40thread.v2%2F0%3Fcontext%3D%257b%2522tid%2522%253a%2522d95f6094-d28c-42bc-9096-e0746ed850b7%2522%252c%2522oid%2522%253a%2522dfc890b8-339e-4b22-9244-1aa53fba25ce%2522%257d%26anon%3Dtrue&type=meetup-join&deeplinkId=f9c8ae7c-0443-41f0-8804-b366685363f9&directDI=true&msLaunch=true&enableMobilePage=true&suppressPrompt=true

I request you to make it convenient to join / attend the meeting and give your valuable suggestions.

Thanking you,

Dr. R N Kulkarni
Prof. & Head & Chairman BoS
Department of Computer Science & Engineering
Ballari Institute of Technology and Management Ballari.
Cell no. 9448572340



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

PROCEEDINGS OF 2nd BOARD OF STUDY MEETING HELD ON 07/09/2023 @ 10:30 AM

Dated: 07/09/2023

Venue / Mode: ONLINE

Time: 10:30 AM

Members Present

S. No.	Name of the Member	Designation	Organization
1	Dr. R N Kulkarni	Chairman	Professor & Head CSE - B.I.T.M. Ballari
2	Faculty Members with different specializations	Members	CSE & AIML Departments
3	Dr. Rajan M A	Member	Research Scientist & CTO ISM Core Group, TCS Research, TCS
4	Dr. Umakanth Kulkarni	Member	Professor & Head, CSE Department, SDMCET, Dharwad
5	Dr. Bharati Harsoor	Member	Professor & Head, ISE Department, PDACE Kalburgi
6	Dr. Basavaraj S Anami	Member	Principal, KLE Institute of Technology, Hubballi
7	Mr. Vijay Kaggal	Member	Chief Strategy Officer, SLK Bengaluru
8	Mr. Sundar K S	Member	Associate Vice – President, IMS Academia, Infosys Ltd., Mysuru
9	Smt. K Triveni	Member	Manager, JSW Torangallu
10	Mr. Suneet Patil	Member	Conversational AI Lead, EVRY India,
11	All faculty of CSE / AI&ML departments	Members	Ballari Institute of Technology & Management, Ballari.

At the outset, the Chairman welcomed all the Honorable members for the Board of Studies (UG) for discussing and finalizing the Scheme and Syllabus for B.E. III & IV Sem. [2022 Scheme] CSE, CSE[AI], CSE[DS] & AI & ML Branches and B.E. V & VI Sem. [2021 Scheme] for CSE and AI & ML Branches. The subjects proposed for BE III & IV Sem. [2022 Scheme] and BE V and VI Sem. [2021] Schemes are shown in the Table below:


Head of the Department,
Dept. of Computer Science & Engg
Ballari Institute of Technology & Management,
(formerly Bellary Engineering College)
BALLARI

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. in Computer Science & Engineering
 Scheme of Teaching and Examinations - 2022
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
 (Effective from the academic year 2023-24)

III SEMESTER

S. N	Course	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	BSC	22MCS31	Graph theory and Discrete Mathematical Structures	TD: Maths, PSB: Maths	3	0	0		03	50	50	100	3
2	IPCC	22CS32	Digital System Design and Computer Organization	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	2		03	50	50	100	4
3	IPCC	22CS33	Operating System	TD & PSB: CSE /AIML /CS[AI],CS[DS]	3	0	2		03	50	50	100	4
4	PCC	22CS34	Data Structures and Applications	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
5	PCCL	22CSL35	Data Structures Lab	TD & PSB: CSE /AIML / CS[AI],CS[DS]	0	0	2		03	50	50	100	1
6	ESC	22CS36	ESC/ETC/PLC Object Oriented Programming With JAVA	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
7	UHV	22CS37	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/ SEC	22CS38X	Ability Enhancement Course / Skill Enhancement Course - III	TD & PSB: CSE /AIML / CS[AI],CS[DS]	If the course is a Theory				01	50	50	100	1
					1	0	0						
					If the course is a Laboratory				0	0	2		02
9	MC	22NS39	National Service Scheme (NSS)	NSS coordinator									
		22PE39	Physical Education (PE) (Sports and Athletics)	Physical Education Director	0	0	2			100	---	100	0
		22YO39	Yoga	Yoga Teacher									
									Total	550	350	900	20

Ability Enhancement Course – III

22CS381	Unix and Shell Programming	22CS382	Version Controller with GIT
22CS383	R Programming		

Dalence
 Head of the Department,
 Dept. of Computer Science & Engg.
 Ballari Institute of Technology & Management
 (formerly Bellary Engineering College)

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. in Computer Science & Engineering Scheme
of Teaching and Examinations - 2022
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2023-24)

IV SEMESTER

S N	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits
					Theory Lecture	Tutorial Practical/ Drawing	Self Study hours	CIE Marks	SEE Marks	Total Marks		
											L	
1	BSC	22BB41	Biology for Engineers	TD & PSB:	3	0	0	03	50	50	100	3
2	IPCC	22CS42	Micro Controllers and Embedded System	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	2	03	50	50	100	4
3	IPCC	22CS43	Database Management Systems	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	2	03	50	50	100	4
4	PCC	22CS44	Analysis and Design of Algorithms	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	0	03	50	50	100	3
5	PCCL	22CSL45	Algorithms Lab	TD & PSB: CSE /AIML / CS[AII],CS[DS]	0	0	2	03	50	50	100	1
6	ESC	22CS46X	ESC/ETC/PLC	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	0	03	50	50	100	3
7	AEC / SEC	22SSA47	Soft Skill & Aptitude	TD & PSB: H & S	If the course is a Theory			01	50	50	100	1
					1	0	0					
					If the course is a Laboratory			02				
0	0	2										
8	UHV	22UH48	Universal human values course	Any Department	1	0	0	01	50	50	100	1
9	MC	22NS49	National Service Scheme (NSS)	NSS coordinator	0	0	2	100	---	100	0	
		22PE49	Physical Education (PE) (Sports and Athletics)	Physical Education Director								
		22YO49	Yoga	Yoga Teacher								
Total									500	400	900	20

Engineering Science Course (ESC/ETC/PLC)

22CS461	System Software	22CS462	Object Oriented Programming with Python
22CS463	Introduction to Data Analytics		

Signature
Head of the Department,
Dept. of Computer Science & Engg.
Ballari Institute of Technology & Management,

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. V SEMSTER CSE & AI&ML

SL	Course category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration Of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	PCC	21CS51	Automata Theory & Compiler Design	Concerned Department	CSE	3	0	0	3	3	50	50	100
02	PCC	21CS52	System Software and Operating System	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS53 / 21AI53	Database Management System	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS54X / 21AI54X	Professional Elective – 1	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS55X / 21AI55X	Open Elective - 1	Other departments offering the course	Other departments offering the course	3	0	0	3	3	50	50	100
06	PCC	21CSL56 / 21AIL56	DBMS Lab with Mini Project	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL57	System Software & Operating System Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	AEC	21ADA580	Advanced Aptitude	Humanities	Humanities	1	0	0	1	2	50	50	100
09	AEC	21CS58X / 21AI58X	AEC	Concerned Department	CSE	1	0	0	1	2	50	50	100
10	HS	21ENV59	Environmental Studies	Humanities	Humanities	1	0	0	1	2	50	50	100
Total									20		500	500	1000

Ability Enhancement Course

01	21CS581 / 21AI581	C# and .Net Framework
02	21CS582 / 21AI582	PYTHON Programming

Professional Elective – 1

01	21CS541 / 21AI541	Agile Technology
02	21CS542 / 21AI542	Introduction to Data Analytics
03	21CS543 / 21AI543	Cyber Security

Open Elective -1

01	21CS551	Introduction to Data Structures
02	21CS552	Introduction to Database Management Systems
03	21CS553	Introduction to PYTHON Programming
04	21CS554	Introduction to Operating System

Signature

Head of the Department,



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. VI SEMSTER CSE & AI&ML

SL	Course Category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	HS	21CS61 / 21AI61	Software Project Management	Humanities / Concerned Department	Humanities / CSE	3	0	0	3	3	50	50	100
02	PCC	21CS62	Computer Networks	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS63	Artificial Intelligence & Machine Learning	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS64X / 21AI64X	Professional Elective - 2	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS65X / 21AI65X	Open Elective - 2	Other departments offering the course	CSE	3	0	0	3	3	50	50	100
06	PCC	21CSL66	Computer Networks Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL67	AI&ML Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	PW	21MN68	Mini Project	Concerned Department	CSE	Two contact hours /week for interaction between the faculty and students			2	3	50	50	100
09	AEC	21CS69X / 21AI69X		Concerned Department	CSE	1	0	0	1	2	50	50	100
10	INT	21INT691	Summer Internship-II	Completed during the intervening period of IV and V semesters.				2	---	100	-	100	
Total									22		550	450	1000

Ability Enhancement Course

01	21CS69A	Computer Graphics using Open GL
02	21CS69B	Mobile Application Development
03	21CS69C	Robotic Process Automation

Professional Elective - 2

01	21CS641 / 21AI641	Cloud Computing
02	21CS642 / 21AI642	Block Chain Technology
03	21CS643 / 21AI643	Natural Language Processing

Open Elective -2

01	21CS651	Programming in JAVA
02	21CS652	Introduction to Data Analytics
03	21CS653	Introduction to Artificial Intelligence & Machine Learning
04	21CS654	Introduction to Cyber Security

Head of the Department,
 Dept. of Computer Science & Engg

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

The Chairman of the Board presented the Scheme and Syllabus for both 2021 and 2022 Scheme subjects. The suggestions and the Action taken is given below:

DBMS – 21CS53	Suggestions	<ul style="list-style-type: none"> Take use case from Industry/Banking/... and ask the students to identify Entity, ER Diagram, Normalization,
	Action Taken	<ul style="list-style-type: none"> Informed the Couse faculty to implement in the suggested order
Agile Technology – 21CS54	Suggestions	<ul style="list-style-type: none"> Invite Industry People and Conduct Workshop on recent advancement in the area
	Action Taken	<ul style="list-style-type: none"> We will plan to Conduct the Workshop / Seminar in Collaboration with Industry
Data Analytics – 21CS54A	Suggestions	<ul style="list-style-type: none"> Incorporate how to restructure data
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Cyber Security – 21CS54B	Suggestions	<ul style="list-style-type: none"> Data Privacy is Missing – Add privacy aspects or conduct training or Workshop
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Robotic Process Automation - 21CS69C	Suggestions	<ul style="list-style-type: none"> How you will demonstrate the tool and lab Components
	Action Taken	<ul style="list-style-type: none"> As the Institute has already signed MoU with Robotic Process Automation [Automation Anywhere University] and UiPATH Four Faculty members are already certified from UiPATH Demonstration of the Tool and development of the Chat Bots will be taken care in the Laboratory
Overall Suggestions		<p>The following points were suggested by the Members:</p> <ol style="list-style-type: none"> Remove Question marks and definition kind of things from the Syllabus [What is AI?] Introduce NOSQL subject in the higher semester Do not list experiments in the Syllabus WEB 4.0 can be added as per Industry Perspective
Action Taken		<ul style="list-style-type: none"> Removed definition kind of things from the entire syllabus Plan to Introduce NOSQL in the Higher Semester List of experiments are removed wherever required Plan to introduce WEB 4.0 as Ability Enhancement Course


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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Signature of the Members

S. No.	Name of the Member	Designation	Signature
1	Dr. R N Kulkarni	Chairman	
2	Dr. Rajan M A	Member	ONLINE
3	Dr. Umakanth Kulkarni	Member	ONLINE
4	Dr. Bharati Harsoor	Member	ONLINE
5	Dr. Basavaraj S Anami	Member	ONLINE
6	Mr. Vijay Kaggal	Member	--
7	Mr. Sundar K S	Member	ONLINE
8	Smt. K Triveni	Member	ONLINE
9	Mr. Suneet Patil	Member	ONLINE
10	Dr. C.K. Srinivas	member	
11	Usman K	member	
12	P. Parivara Prasad	Member	
13	Dr B. M. Vidyavall	member	
14	Dr. Rajashree W. Bhandari	member	
15	Dr. Chidananda. H.	member	
16	Pratibha Mishra.	Member	
17	Sudhakar. Avareddy	member	
18	Manjula K	Member	
19	Dadapeer	member	
20	Ms. Shafique	Member	
21	DR. SURESH. Y	MEMBER	
22	Dr. Anita S. Patil.	Member	
23	Dr. T.R. Muhibur Rahman	Member	
24	DR. GIRISH. KUMAR	Member	
25	Sreenivasa M	Member	
26	CTM Praveen Kumar	Member	
27			

Head of the Department,
 Dept. of Computer Science & Engg
 Ballari Institute of Technology & Management

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

PROCEEDINGS OF 2nd BOARD OF STUDY MEETING HELD ON 07/09/2023 @ 10:30 AM

Dated: 07/09/2023

Venue / Mode: ONLINE

Time: 10:30 AM

Members Present

S. No.	Name of the Member	Designation	Organization
1	Dr. R N Kulkarni	Chairman	Professor & Head CSE - B.I.T.M. Ballari
2	Faculty Members with different specializations	Members	CSE & AIML Departments
3	Dr. Rajan M A	Member	Research Scientist & CTO ISM Core Group, TCS Research, TCS
4	Dr. Umakanth Kulkarni	Member	Professor & Head, CSE Department, SDMCET, Dharwad
5	Dr. Bharati Harsoor	Member	Professor & Head, ISE Department, PDACE Kalburgi
6	Dr. Basavaraj S Anami	Member	Principal, KLE Institute of Technology, Hubballi
7	Mr. Vijay Kaggal	Member	Chief Strategy Officer, SLK Bengaluru
8	Mr. Sundar K S	Member	Associate Vice – President, IMS Academia, Infosys Ltd., Mysuru
9	Smt. K Triveni	Member	Manager, JSW Torangallu
10	Mr. Suneet Patil	Member	Conversational AI Lead, EVRY India,
11	All faculty of CSE / AI&ML departments	Members	Ballari Institute of Technology & Management, Ballari.

At the outset, the Chairman welcomed all the Honorable members for the Board of Studies (UG) for discussing and finalizing the Scheme and Syllabus for B.E. III & IV Sem. [2022 Scheme] CSE, CSE[AI], CSE[DS] & AI & ML Branches and B.E. V & VI Sem. [2021 Scheme] for CSE and AI & ML Branches. The subjects proposed for BE III & IV Sem. [2022 Scheme] and BE V and VI Sem. [2021] Schemes are shown in the Table below:


Head of the Department,
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Ballari Institute of Technology & Management,
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BALLARI



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. in Computer Science & Engineering
 Scheme of Teaching and Examinations - 2022
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
 (Effective from the academic year 2023-24)

III SEMESTER

S. N	Course	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours/Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	BSC	22MCS31	Graph theory and Discrete Mathematical Structures	TD: Maths, PSB: Maths	3	0	0		03	50	50	100	3
2	IPCC	22CS32	Digital System Design and Computer Organization	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	2		03	50	50	100	4
3	IPCC	22CS33	Operating System	TD & PSB: CSE /AIML /CS[AI],CS[DS]	3	0	2		03	50	50	100	4
4	PCC	22CS34	Data Structures and Applications	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
5	PCCL	22CSL35	Data Structures Lab	TD & PSB: CSE /AIML / CS[AI],CS[DS]	0	0	2		03	50	50	100	1
6	ESC	22CS36	ESC/ETC/PLC Object Oriented Programming With JAVA	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
7	UHV	22CS37	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/ SEC	22CS38X	Ability Enhancement Course / Skill Enhancement Course - III	TD & PSB: CSE /AIML / CS[AI],CS[DS]	If the course is a Theory				01	50	50	100	1
					1	0	0						
					If the course is a Laboratory								
					0	0	2		02				
9	MC	22NS39	National Service Scheme (NSS)	NSS coordinator									
		22PE39	Physical Education (PE) (Sports and Athletics)	Physical Education Director	0	0	2			100	---	100	0
		22YO39	Yoga	Yoga Teacher									
Total									550	350	900	20	

Ability Enhancement Course – III

22CS381	Unix and Shell Programming	22CS382	Version Controller with GIT
22CS383	R Programming		

Dalence
 Head of the Department,
 Dept. of Computer Science & Engg.
 Ballari Institute of Technology & Management
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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. in Computer Science & Engineering Scheme
of Teaching and Examinations - 2022
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2023-24)

IV SEMESTER

S N	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits
					Theory Lecture	Tutorial Practical/ Drawing	Self Study Duration in hours	CIE Marks	SEE Marks	Total Marks		
											L	
1	BSC	22BB41	Biology for Engineers	TD & PSB:	3	0	0	03	50	50	100	3
2	IPCC	22CS42	Micro Controllers and Embedded System	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	2	03	50	50	100	4
3	IPCC	22CS43	Database Management Systems	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	2	03	50	50	100	4
4	PCC	22CS44	Analysis and Design of Algorithms	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	0	03	50	50	100	3
5	PCCL	22CSL45	Algorithms Lab	TD & PSB: CSE /AIML / CS[AII],CS[DS]	0	0	2	03	50	50	100	1
6	ESC	22CS46X	ESC/ETC/PLC	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	0	03	50	50	100	3
7	AEC / SEC	22SSA47	Soft Skill & Aptitude	TD & PSB: H & S	If the course is a Theory			01	50	50	100	1
					1	0	0					
					If the course is a Laboratory			02				
0	0	2										
8	UHV	22UH48	Universal human values course	Any Department	1	0	0	01	50	50	100	1
9	MC	22NS49	National Service Scheme (NSS)	NSS coordinator	0	0	2	100	---	100	0	
		22PE49	Physical Education (PE) (Sports and Athletics)	Physical Education Director								
		22YO49	Yoga	Yoga Teacher								
Total									500	400	900	20

Engineering Science Course (ESC/ETC/PLC)

22CS461	System Software	22CS462	Object Oriented Programming with Python
22CS463	Introduction to Data Analytics		

Signature
Head of the Department,
Dept. of Computer Science & Engg.
Ballari Institute of Technology & Management,

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. V SEMSTER CSE & AI&ML

SL	Course category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration Of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	PCC	21CS51	Automata Theory & Compiler Design	Concerned Department	CSE	3	0	0	3	3	50	50	100
02	PCC	21CS52	System Software and Operating System	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS53 / 21AI53	Database Management System	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS54X / 21AI54X	Professional Elective – 1	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS55X / 21AI55X	Open Elective - 1	Other departments offering the course	Other departments offering the course	3	0	0	3	3	50	50	100
06	PCC	21CSL56 / 21AIL56	DBMS Lab with Mini Project	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL57	System Software & Operating System Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	AEC	21ADA580	Advanced Aptitude	Humanities	Humanities	1	0	0	1	2	50	50	100
09	AEC	21CS58X / 21AI58X	AEC	Concerned Department	CSE	1	0	0	1	2	50	50	100
10	HS	21ENV59	Environmental Studies	Humanities	Humanities	1	0	0	1	2	50	50	100
Total									20		500	500	1000

Ability Enhancement Course

01	21CS581 / 21AI581	C# and .Net Framework
02	21CS582 / 21AI582	PYTHON Programming

Professional Elective – 1

01	21CS541 / 21AI541	Agile Technology
02	21CS542 / 21AI542	Introduction to Data Analytics
03	21CS543 / 21AI543	Cyber Security

Open Elective -1

01	21CS551	Introduction to Data Structures
02	21CS552	Introduction to Database Management Systems
03	21CS553	Introduction to PYTHON Programming
04	21CS554	Introduction to Operating System

Signature

Head of the Department,



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. VI SEMSTER CSE & AI&ML

SL	Course Category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	HS	21CS61 / 21AI61	Software Project Management	Humanities / Concerned Department	Humanities / CSE	3	0	0	3	3	50	50	100
02	PCC	21CS62	Computer Networks	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS63	Artificial Intelligence & Machine Learning	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS64X / 21AI64X	Professional Elective - 2	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS65X / 21AI65X	Open Elective - 2	Other departments offering the course	CSE	3	0	0	3	3	50	50	100
06	PCC	21CSL66	Computer Networks Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL67	AI&ML Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	PW	21MN68	Mini Project	Concerned Department	CSE	Two contact hours /week for interaction between the faculty and students			2	3	50	50	100
09	AEC	21CS69X / 21AI69X		Concerned Department	CSE	1	0	0	1	2	50	50	100
10	INT	21INT691	Summer Internship-II	Completed during the intervening period of IV and V semesters.				2	---	100	-	100	
Total									22		550	450	1000

Ability Enhancement Course

01	21CS69A	Computer Graphics using Open GL
02	21CS69B	Mobile Application Development
03	21CS69C	Robotic Process Automation

Professional Elective - 2

01	21CS641 / 21AI641	Cloud Computing
02	21CS642 / 21AI642	Block Chain Technology
03	21CS643 / 21AI643	Natural Language Processing

Open Elective -2

01	21CS651	Programming in JAVA
02	21CS652	Introduction to Data Analytics
03	21CS653	Introduction to Artificial Intelligence & Machine Learning
04	21CS654	Introduction to Cyber Security

Head of the Department,
 Dept. of Computer Science & Engg

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

The Chairman of the Board presented the Scheme and Syllabus for both 2021 and 2022 Scheme subjects. The suggestions and the Action taken is given below:

DBMS – 21CS53	Suggestions	<ul style="list-style-type: none"> Take use case from Industry/Banking/... and ask the students to identify Entity, ER Diagram, Normalization,
	Action Taken	<ul style="list-style-type: none"> Informed the Couse faculty to implement in the suggested order
Agile Technology – 21CS54	Suggestions	<ul style="list-style-type: none"> Invite Industry People and Conduct Workshop on recent advancement in the area
	Action Taken	<ul style="list-style-type: none"> We will plan to Conduct the Workshop / Seminar in Collaboration with Industry
Data Analytics – 21CS54A	Suggestions	<ul style="list-style-type: none"> Incorporate how to restructure data
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Cyber Security – 21CS54B	Suggestions	<ul style="list-style-type: none"> Data Privacy is Missing – Add privacy aspects or conduct training or Workshop
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Robotic Process Automatio n - 21CS69C	Suggestions	<ul style="list-style-type: none"> How you will demonstrate the tool and lab Components
	Action Taken	<ul style="list-style-type: none"> As the Institute has already signed MoU with Robotic Process Automation [Automation Anywhere University] and UiPATH Four Faculty members are already certified from UiPATH Demonstration of the Tool and development of the Chat Bots will be taken care in the Laboratory
Overall Suggestions		<p>The following points were suggested by the Members:</p> <ol style="list-style-type: none"> Remove Question marks and definition kind of things from the Syllabus [What is AI?] Introduce NOSQL subject in the higher semester Do not list experiments in the Syllabus WEB 4.0 can be added as per Industry Perspective
Action Taken		<ul style="list-style-type: none"> Removed definition kind of things from the entire syllabus Plan to Introduce NOSQL in the Higher Semester List of experiments are removed wherever required Plan to introduce WEB 4.0 as Ability Enhancement Course


 Head of the Department,
 Dept. of Computer Science & Engg
 Ballari Institute of Technology & Management
 (formerly Bellary Engineering College)

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Signature of the Members

S. No.	Name of the Member	Designation	Signature
1	Dr. R N Kulkarni	Chairman	
2	Dr. Rajan M A	Member	ONLINE
3	Dr. Umakanth Kulkarni	Member	ONLINE
4	Dr. Bharati Harsoor	Member	ONLINE
5	Dr. Basavaraj S Anami	Member	ONLINE
6	Mr. Vijay Kaggal	Member	--
7	Mr. Sundar K S	Member	ONLINE
8	Smt. K Triveni	Member	ONLINE
9	Mr. Suneet Patil	Member	ONLINE
10	Dr. C.K. Srinivas	member	
11	Usman K	member	
12	A. panirama prasad	Member	
13	Dr B. M. Vidyavall	member	
14	Dr. Rajashree W. Burede	member	
15	Dr. Chidananda. H.	member	
16	Pratibha Mishra.	Member	
17	Sudhakar. Avareddy	member	
18	Manjula K	Member	
19	Dadapeer	member	
20	Ms. Shafique	Member	
21	DR. SURESH. Y	MEMBER	
22	Dr. Anita S. Patil.	Member	
23	Dr. T.R. Muhibur Rahman	Member	
24	DR. GIRISH. KUMAR	Member	
25	Sreenivasa M	Member	
26	CTM Praveen Kumar	Member	
27			

Head of the Department,
 Dept. of Computer Science & Engg
 Ballari Institute of Technology & Management

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

PROCEEDINGS OF 2nd BOARD OF STUDY MEETING HELD ON 07/09/2023 @ 10:30 AM

Dated: 07/09/2023

Venue / Mode: ONLINE

Time: 10:30 AM

Members Present

S. No.	Name of the Member	Designation	Organization
1	Dr. R N Kulkarni	Chairman	Professor & Head CSE - B.I.T.M. Ballari
2	Faculty Members with different specializations	Members	CSE & AIML Departments
3	Dr. Rajan M A	Member	Research Scientist & CTO ISM Core Group, TCS Research, TCS
4	Dr. Umakanth Kulkarni	Member	Professor & Head, CSE Department, SDMCET, Dharwad
5	Dr. Bharati Harsoor	Member	Professor & Head, ISE Department, PDACE Kalburgi
6	Dr. Basavaraj S Anami	Member	Principal, KLE Institute of Technology, Hubballi
7	Mr. Vijay Kaggal	Member	Chief Strategy Officer, SLK Bengaluru
8	Mr. Sundar K S	Member	Associate Vice – President, IMS Academia, Infosys Ltd., Mysuru
9	Smt. K Triveni	Member	Manager, JSW Torangallu
10	Mr. Suneet Patil	Member	Conversational AI Lead, EVRY India,
11	All faculty of CSE / AI&ML departments	Members	Ballari Institute of Technology & Management, Ballari.

At the outset, the Chairman welcomed all the Honorable members for the Board of Studies (UG) for discussing and finalizing the Scheme and Syllabus for B.E. III & IV Sem. [2022 Scheme] CSE, CSE[AI], CSE[DS] & AI & ML Branches and B.E. V & VI Sem. [2021 Scheme] for CSE and AI & ML Branches. The subjects proposed for BE III & IV Sem. [2022 Scheme] and BE V and VI Sem. [2021] Schemes are shown in the Table below:


Head of the Department,
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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. in Computer Science & Engineering
 Scheme of Teaching and Examinations - 2022
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
 (Effective from the academic year 2023-24)

III SEMESTER

S. N	Course	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours/Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	BSC	22MCS31	Graph theory and Discrete Mathematical Structures	TD: Maths, PSB: Maths	3	0	0		03	50	50	100	3
2	IPCC	22CS32	Digital System Design and Computer Organization	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	2		03	50	50	100	4
3	IPCC	22CS33	Operating System	TD & PSB: CSE /AIML /CS[AI],CS[DS]	3	0	2		03	50	50	100	4
4	PCC	22CS34	Data Structures and Applications	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
5	PCCL	22CSL35	Data Structures Lab	TD & PSB: CSE /AIML / CS[AI],CS[DS]	0	0	2		03	50	50	100	1
6	ESC	22CS36	ESC/ETC/PLC Object Oriented Programming With JAVA	TD & PSB: CSE /AIML / CS[AI],CS[DS]	3	0	0		03	50	50	100	3
7	UHV	22CS37	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/ SEC	22CS38X	Ability Enhancement Course / Skill Enhancement Course - III	TD & PSB: CSE /AIML / CS[AI],CS[DS]	If the course is a Theory				01	50	50	100	1
					1	0	0						
					If the course is a Laboratory				02				
9	MC	22NS39	National Service Scheme (NSS)	NSS coordinator									
		22PE39	Physical Education (PE) (Sports and Athletics)	Physical Education Director	0	0	2		100	---	100	0	
		22YO39	Yoga	Yoga Teacher									
									Total	550	350	900	20

Ability Enhancement Course – III

22CS381	Unix and Shell Programming	22CS382	Version Controller with GIT
22CS383	R Programming		

Dalence
 Head of the Department,
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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. in Computer Science & Engineering Scheme
of Teaching and Examinations - 2022
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2023-24)

IV SEMESTER

S N	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits
					Theory Lecture	Tutorial Practical/ Drawing	Self Study Duration in hours	CIE Marks	SEE Marks	Total Marks		
											L	
1	BSC	22BB41	Biology for Engineers	TD & PSB:	3	0	0	03	50	50	100	3
2	IPCC	22CS42	Micro Controllers and Embedded System	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	2	03	50	50	100	4
3	IPCC	22CS43	Database Management Systems	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	2	03	50	50	100	4
4	PCC	22CS44	Analysis and Design of Algorithms	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	0	03	50	50	100	3
5	PCCL	22CSL45	Algorithms Lab	TD & PSB: CSE /AIML / CS[AII],CS[DS]	0	0	2	03	50	50	100	1
6	ESC	22CS46X	ESC/ETC/PLC	TD & PSB: CSE /AIML / CS[AII],CS[DS]	3	0	0	03	50	50	100	3
7	AEC / SEC	22SSA47	Soft Skill & Aptitude	TD & PSB: H & S	If the course is a Theory			01	50	50	100	1
					1	0	0					
					If the course is a Laboratory			02				
0	0	2										
8	UHV	22UH48	Universal human values course	Any Department	1	0	0	01	50	50	100	1
9	MC	22NS49	National Service Scheme (NSS)	NSS coordinator	0	0	2	100	---	100	0	
		22PE49	Physical Education (PE) (Sports and Athletics)	Physical Education Director								
		22YO49	Yoga	Yoga Teacher								
Total								500	400	900	20	

Engineering Science Course (ESC/ETC/PLC)

22CS461	System Software	22CS462	Object Oriented Programming with Python
22CS463	Introduction to Data Analytics		

Signature
Head of the Department,
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Ballari Institute of Technology & Management,

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. V SEMSTER CSE & AI&ML

SL	Course category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration Of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	PCC	21CS51	Automata Theory & Compiler Design	Concerned Department	CSE	3	0	0	3	3	50	50	100
02	PCC	21CS52	System Software and Operating System	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS53 / 21AI53	Database Management System	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS54X / 21AI54X	Professional Elective – 1	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS55X / 21AI55X	Open Elective - 1	Other departments offering the course	Other departments offering the course	3	0	0	3	3	50	50	100
06	PCC	21CSL56 / 21AIL56	DBMS Lab with Mini Project	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL57	System Software & Operating System Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	AEC	21ADA580	Advanced Aptitude	Humanities	Humanities	1	0	0	1	2	50	50	100
09	AEC	21CS58X / 21AI58X	AEC	Concerned Department	CSE	1	0	0	1	2	50	50	100
10	HS	21ENV59	Environmental Studies	Humanities	Humanities	1	0	0	1	2	50	50	100
Total									20		500	500	1000

Ability Enhancement Course

01	21CS581 / 21AI581	C# and .Net Framework
02	21CS582 / 21AI582	PYTHON Programming

Professional Elective – 1

01	21CS541 / 21AI541	Agile Technology
02	21CS542 / 21AI542	Introduction to Data Analytics
03	21CS543 / 21AI543	Cyber Security

Open Elective -1

01	21CS551	Introduction to Data Structures
02	21CS552	Introduction to Database Management Systems
03	21CS553	Introduction to PYTHON Programming
04	21CS554	Introduction to Operating System

Signature

Head of the Department,



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B.E. VI SEMSTER CSE & AI&ML

SL	Course Category	Course Code	Course	BOS / Teaching Department	BOE / Paper Setting Board	Teaching Hours per Week			Credits	Duration of Exam	Marks		
						L	T	P			CIE	SEE	Total
01	HS	21CS61 / 21AI61	Software Project Management	Humanities / Concerned Department	Humanities / CSE	3	0	0	3	3	50	50	100
02	PCC	21CS62	Computer Networks	Concerned Department	CSE	3	0	0	3	3	50	50	100
03	PCC	21CS63	Artificial Intelligence & Machine Learning	Concerned Department	CSE	3	0	0	3	3	50	50	100
04	PE	21CS64X / 21AI64X	Professional Elective - 2	Concerned Department	CSE	3	0	0	3	3	50	50	100
05	OE	21CS65X / 21AI65X	Open Elective - 2	Other departments offering the course	CSE	3	0	0	3	3	50	50	100
06	PCC	21CSL66	Computer Networks Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
07	PCC	21CSL67	AI&ML Lab	Concerned Department	CSE	0	0	2	1	3	50	50	100
08	PW	21MN68	Mini Project	Concerned Department	CSE	Two contact hours /week for interaction between the faculty and students			2	3	50	50	100
09	AEC	21CS69X / 21AI69X		Concerned Department	CSE	1	0	0	1	2	50	50	100
10	INT	21INT691	Summer Internship-II	Completed during the intervening period of IV and V semesters.				2	---	100	-	100	
Total									22		550	450	1000

Ability Enhancement Course

01	21CS69A	Computer Graphics using Open GL
02	21CS69B	Mobile Application Development
03	21CS69C	Robotic Process Automation

Professional Elective - 2

01	21CS641 / 21AI641	Cloud Computing
02	21CS642 / 21AI642	Block Chain Technology
03	21CS643 / 21AI643	Natural Language Processing

Open Elective -2

01	21CS651	Programming in JAVA
02	21CS652	Introduction to Data Analytics
03	21CS653	Introduction to Artificial Intelligence & Machine Learning
04	21CS654	Introduction to Cyber Security

Head of  Department,
 Dept. of Computer Science & Engg

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

The Chairman of the Board presented the Scheme and Syllabus for both 2021 and 2022 Scheme subjects. The suggestions and the Action taken is given below:

DBMS – 21CS53	Suggestions	<ul style="list-style-type: none"> Take use case from Industry/Banking/... and ask the students to identify Entity, ER Diagram, Normalization,
	Action Taken	<ul style="list-style-type: none"> Informed the Couse faculty to implement in the suggested order
Agile Technology – 21CS54	Suggestions	<ul style="list-style-type: none"> Invite Industry People and Conduct Workshop on recent advancement in the area
	Action Taken	<ul style="list-style-type: none"> We will plan to Conduct the Workshop / Seminar in Collaboration with Industry
Data Analytics – 21CS54A	Suggestions	<ul style="list-style-type: none"> Incorporate how to restructure data
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Cyber Security – 21CS54B	Suggestions	<ul style="list-style-type: none"> Data Privacy is Missing – Add privacy aspects or conduct training or Workshop
	Action Taken	<ul style="list-style-type: none"> We will plan to conduct Workshop
Robotic Process Automation - 21CS69C	Suggestions	<ul style="list-style-type: none"> How you will demonstrate the tool and lab Components
	Action Taken	<ul style="list-style-type: none"> As the Institute has already signed MoU with Robotic Process Automation [Automation Anywhere University] and UiPATH Four Faculty members are already certified from UiPATH Demonstration of the Tool and development of the Chat Bots will be taken care in the Laboratory
Overall Suggestions		<p>The following points were suggested by the Members:</p> <ol style="list-style-type: none"> Remove Question marks and definition kind of things from the Syllabus [What is AI?] Introduce NOSQL subject in the higher semester Do not list experiments in the Syllabus WEB 4.0 can be added as per Industry Perspective
Action Taken		<ul style="list-style-type: none"> Removed definition kind of things from the entire syllabus Plan to Introduce NOSQL in the Higher Semester List of experiments are removed wherever required Plan to introduce WEB 4.0 as Ability Enhancement Course


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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Signature of the Members

S. No.	Name of the Member	Designation	Signature
1	Dr. R N Kulkarni	Chairman	
2	Dr. Rajan M A	Member	ONLINE
3	Dr. Umakanth Kulkarni	Member	ONLINE
4	Dr. Bharati Harsoor	Member	ONLINE
5	Dr. Basavaraj S Anami	Member	ONLINE
6	Mr. Vijay Kaggal	Member	--
7	Mr. Sundar K S	Member	ONLINE
8	Smt. K Triveni	Member	ONLINE
9	Mr. Suneet Patil	Member	ONLINE
10	Dr. C.K. Srinivas	member	
11	Usman K	member	
12	P. Parivara Prasad	Member	
13	Dr B. M. Vidyavall	member	
14	Dr. Rajashree W. Bhandari	member	
15	Dr. Chidananda. H.	member	
16	Pratibha Mishra	Member	
17	Sudhakar Avareddy	member	
18	Manjula K	Member	
19	Dadapeer	member	
20	Ms. Shafique	Member	
21	DR. SURESH. Y	MEMBER	
22	Dr. Anita S. Patil	Member	
23	Dr. T.R. Muhibur Rahman	Member	
24	DR. GIRISH. KUMAR	Member	
25	Sreenivasa M	Member	
26	CTM Praveen Kumar	Member	
27			

Head of the Department,
 Dept. of Computer Science & Engg
 Ballari Institute of Technology & Management



Bogavaraajowan Group of Institutions

ಬಲ್ಲಾರಿ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ & ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್, ಬಲ್ಲಾರಿ



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

Autonomous Institute under Visvesvaraya Technological University, Belagavi

(Recognized by Govt. of Karnataka & AICTE, New Delhi)

"Jnana Gangotri" Campus, #873/2, Ballari-Hosapote Road, Near Allipura, Ballari-583 104 (Karnataka)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Dr. Sadyojatha K M, B.E., M.E., Ph.D. Prof. & Head

Ph: 08392-237177, Email: sadyojatha@bilm.edu.in

PROCEEDINGS OF BOARD OF STUDY MEETING HELD ON 2nd Sep 2023

Venue: Online Meeting (Microsoft Teams)

Time: 02:30 PM

Members Present:

S. No	Name of the Member	Designation	Organization
1	Dr. K M Sadyojatha	Chairman	Professor & Head ECE - B.I.T.M. Ballari
2	Dr. V C Patil	Member	Professor ECE - B.I.T.M. Ballari
3	Dr. U Eranna	Member	Professor ECE - B.I.T.M. Ballari
4	Dr. Naseeruddin	Member	Assoc. Prof. ECE - B.I.T.M. Ballari
5	Dr. Fareduddin J S	Member	Assoc. Prof. ECE - B.I.T.M. Ballari
6	Dr. William Thomas	Member	Assoc. Prof. ECE - B.I.T.M. Ballari
7	Mr. Premchand D R	Member	Asst. Prof. ECE - B.I.T.M. Ballari
8	Dr. Patil Ramana Reddy	Member	Professor & Head, Dept. of E&CE, JNTU, CEA, Anantapur.
9	Dr. Seshachalam	VTU Nominated Member	Professor, Dept. of E&CE, BMSCE, Bengaluru.
10	Mr. Reddy Sridhar	Member	Robert Bosch, Bengaluru
11	Mr. Ishwarayya Mathapati	Member	Senior Member, Technical KPIT Cummins Info Systems Ltd.

Members Granted Leave of Absence:

S. No	Name of the Member	Designation	Organization
1	Dr. Subhash Kulkarni	Member	Principal, PESIT, Bangalore South Campus, Bengaluru.
2	Mr. Krishna Kumar M	Member	Vice President, Global Talent acquisition, CYENT Bengaluru.
3	Mr. Jayaprakash Yangal	Member	Director- Talent Acquisition, MIRAFI Technologies

At the outset, the Chairman welcomed all the Honorable members for the meeting of Board of Studies (UG) for discussing and finalizing the Scheme and Syllabus for B.E. 2nd year of 22Scheme and B.E. 3rd year of 21 Scheme of Electronics & Communication Engineering (E&CE).



**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT**

Autonomous Institute under Visvesvaraya Technological University, Belagavi

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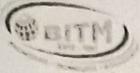
"Jnana Gangotri" Campus, #873/2, Ballari-Hosapete Road, Near Allipura, Ballari-583 104 (Karnataka)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERINGDr. Sadyojatha K M, BE, ME, Ph.D. Prof. & Head

Ph: 08392-237177, Email: sadyojatha@bitm.edu.in

To Consider and approve the scheme and syllabus for B.E. 2nd year and 3rd year of Electronics & Communication Engineering (E&CE) for the Academic Year 2023-24.

Sl. No.	Sem	Course Code	Name of the Course	Review Comments/Suggestions	Actions Taken
1.	All Sem	---	General Comments	<ul style="list-style-type: none"> Consider tutorial components to maintain well balanced curriculum structure. Scattered Professional elective (PE) courses with respect to core competencies. Suggested to remove pre-requisite part in open elective courses. Suggested to have very simplified curriculum for open elective courses from the multi-disciplinary perspective. Too much deviation from the core ECE is to be avoided by keeping minimum number of programming language courses as professional electives. Suggested to keep current trends in ECE core and industry relevance while framing the curriculum. Suggested to pre-plan suitable strategies for diversified mandatory courses (Yoga, NSS, NCC etc.) 	<ul style="list-style-type: none"> Tutorial hours are suitably included in the scheme Core competencies are streamlined and suitably the list of PE courses is modified. Pre-requisite part in open elective courses is removed. List of PE courses is modified suitably. Suggestions Incorporated Suggestions are noted and forwarded to Common Board for discussion.
2.		2IEC53	Microcontrollers & Embedded Systems	Justification to include 8051 microcontroller contents and suggested to seek opinion from other stake holders.	Suggestions Incorporated
3.	V	2IEC543	Operating Systems	Suggested to remove pre-requisite component "computer organization and architecture" due to listing of same titled course in the V Semester professional elective courses.	Suggestions Incorporated
4.		2IECL57	Microcontrollers & Embedded System Lab	Recommended to include higher level learning competencies in the lab experiments and reduce outdated experlments.	Suggestions Incorporated



Basavarajeswari Group of Institutions

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Dr. Sadyojatha K M, BE, ME, Ph.D. Prof. & Head

Ph: 08392-237177, Email: sadyojatha@bitm.edu.in

5.	VI	21EC63	VLSI Design	Recommended to consider the suitable modification in the course title as per the curriculum.	Suggestions Incorporated
6.		21ECL67	VLSI Lab	Review and confirm the list of experiments under Digital and analog design categories.	Suggestions Incorporated
7.		21AEC690	Internet of Things Laboratory	Modify the course content suitable to the recent trends in IoT focusing on higher cognitive learning experience.	Suggestions Incorporated
8.	III	22EC361	Computer Organization and Architecture	Recommended to focus on any one specific architecture in Module-5.	Suggestions Incorporated
9.	IV	22EC43	Control Systems	Review the Module-1 contents and suggested to improve the over-all content keeping recent advancements and practical aspects.	Suggestions Incorporated



Thanks & Regards,

Dr. K M Sadyojatha

Professor and Head,

Dept. of E&CE,

BITM, Ballari-04





Basavarajawari Group of Institutions

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Jnana Gangotri Campus, #873/2, Ballari-Hosapete Road, Near Allipura, Ballari-583 104 (Karnataka)

Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/ECE/01

Date: 25/08/2023

To,

Dr. PATIL RAMANA REDDY B. Tech, M. Tech, PhD

Professor & HOD Dept. of E&CE

JNTU, CEA, Anantapuram

Dear Sir,

Subject: Regarding Board of studies meeting.

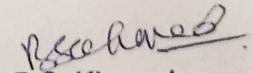
Board of studies meeting in **Electronics and Communication Engineering** board is scheduled on **02/09/2023** from **2.00PM** onwards at our institute in both **online and offline mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely


Dr. B.S. Khened
(Dean-Academics)



Ref. No. BITM/BOS/2023-24/ECE/02

Date: 25/08/2023

To,

Dr. Seshachalam

Professor, Dept. of E&CE

BMSCE, Bengaluru.

Dear Sir,

Subject: Regarding Board of studies meeting.

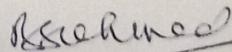
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Thanking you sir.

Yours sincerely


Dr. B.S. Khened
(Dean-Academics)



Basavarajawari Group of Institutions

ಬಲ್ಲಾರಿ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ & ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್, ಬಲ್ಲಾರಿ



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

Autonomous Institute under Visvesvaraya Technological University, Belagavi

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"Jnana Gangotri" Campus, #873/2, Ballari-Hosapote Road, Near Allipura, Ballari-583 104 (Karnataka)

Dr. B S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/ECE/03

Date: 25/08/2023

To,

Dr. SUBHASH KULKARNI, B. E, M. Tech, PhD

Professor & HOD Dept. of E&CE,

PES University, Bengaluru

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Electronics and Communication Engineering** board is scheduled on **02/09/2023** from **2.00PM** onwards at our institute in both **online and offline mode**. You are requested to kindly attend the meeting.

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2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)





Basavarajeswari Group of Institutions

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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/ECE/04

Date: 25/08/2023

To,

Mr. KRISHNA KUMAR M

Vice President, Global Talent Acquisition

CYIENT- Bengaluru

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Electronics and Communication Engineering** board is scheduled on **02/09/2023** from **2.00PM** onwards at our institute in both **online and offline mode**. You are requested to kindly attend the meeting.

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2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/ECE/05

Date: 25/08/2023

To,

Mr. REDDY SRIDHAR

Robert Bosch, Bengaluru

Dear Sir,

Subject: Regarding Board of studies meeting.

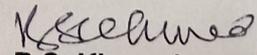
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2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely


Dr. B.S. Khened
(Dean-Academics)



Basavarajewari Group of Institutions

ಬಳ್ಳಾರಿ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ & ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್, ಬಳ್ಳಾರಿ



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/ECE/06

Date: 25/08/2023

To,

Mr. JAYAPRAKASH YANGAL

Director, Talent Acquisition

MIRAFI TECHNOLOGIES

Dear Sir,

Subject: Regarding Board of studies meeting.

Board of studies meeting in **Electronics and Communication Engineering** board is scheduled on **02/09/2023** from **2.00PM** onwards at our institute in both **online and offline mode**. You are requested to kindly attend the meeting.

The agenda of the meeting is to finalize

1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
2. Scheme and syllabus of B.E. 2nd Year- 2022 Scheme.

Thanking you sir.

Yours sincerely

Dr. B.S. Khened
(Dean-Academics)



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

Ref. No. BITM/BOS/2023-24/ECE/07

Date: 25/08/2023

To,

Mr. ISHWARAYYA MATHAPATI

Sr. Member, Technical,

KPIT Cummins Infor Systems Ltd

Dear Sir,

Subject: Regarding Board of studies meeting.

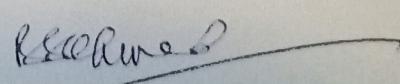
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1. Scheme and syllabus of B.E. 3rd Year- 2021 Scheme
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Thanking you sir.

Yours sincerely


Dr. B.S. Khened
(Dean-Academics)

Date: 30/08/2023

Minutes of Meeting

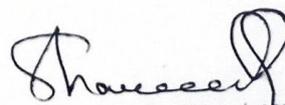
Board of Studies Meeting of Electrical & Electronics Department was held on 01/09/2023 at 3 PM through online/offline mode. The Chairman welcomed all the honorable members to the meeting.

The agenda of meeting was:

- 1) To finilize scheme and syllabus of 3rd and 4th semester 2022 scheme.
- 2) To finilize scheme and contents of the syllabus for 5th and 6th semester 2021 scheme.

The contents of the syllabus was discussed and following suggestions were given by the members.

Sl. No.	Se m	Course Code	Name of the Course		Review Comments/Suggestions
1		21EE52	Generation Transmission and Distribution	Suggestion	With 40 hours, difficult to teach entire syllabus .In module -1, Introduction to power systems may be removed and recommended to include economics of power station operation shall be included.
				Action	In 2 nd sem, students have been studied types of electrical power generation.Only quantitive analysis is to be covered can be covered in 8 hrs. Economics of power station is included in management and entrepreneurship course.
2		21AEC581	SCI LAB	Suggestion	LTP can be 0-0-2 instead of 1-0-2.
				Action	Corrected LTP as 0-0-2 instead of 1-0-2.
3	5 th & 6 th	21EEL56	Control system lab	Suggestion	Experiments are to be reordered and COs are to be redefined.
				Action	Experiments are reordered and COs are redefined.
4		21EE63	S&S and DSP	Suggestion	With LTP 2-2-0 for 3 credits may not justify complete treatment for the course.
				Action	Required basics for this course are included in the Engineering Maths -IV.
5		21EE691	EV technology using MATLAB	Suggestion	EV technology using MATLAB: Title appears more wide open(general) and LTP shall be 1-0-2.
				Action	Title is changed as Modeling and simulation of EV system using MATLAB
6		21EE644	Energy storage technologies .	Suggestion	References are to be given properly for energy storage technologies .
				Action	
7		22EE32	Digital Systems Design	Suggestion	Title can be Digital Electronics.The contents are ok. Use of the word Design in title indicates very high level of learning.
				Action	Title of the course is changed to Digital Electronics
8	3 rd & 4 th	22EE34	Electrical Machines-1	Suggestion	LTP in scheme is 3-0-0 whereas in syllabus it appeared as 3-0-2. Kindly correct.
				Action	Corrected .
9		22AEC381	Electric Circuit Analysis	Suggestion	Include simulation of resonant circuits.
				Action	Included simulation of resonant circuits.


 Head of the Department,
 Department of Electrical & Electronics Engineering,
 Ballari Institute of Technology & Management,
 BALLARI.

Copy to:

For internal circulation only

Sl. NO	Name of the Faculty	Role	Online / Offline	Signature
1	Dr.Sharana Reddy	Chairman	Attended Offline	<i>Sharana Reddy</i>
2	Dr.Manjunath Sharma	V.T.U.Nominee	Attended on line	<i>online</i>
3	Dr.Ramesh L.Chakrasali	Member (subject expert from outside)	Attended on line	<i>online</i>
4	Mr.Shivarajappa	Member	Attended on line	<i>online</i>
5	Dr.B S Khened	Member	Attended Offline	
6	Dr.Raghavendra P	Member	Attended Offline	<i>Raghavendra P</i>
7	Dr.Abdul Khadar.A	Member	Attended Offline	<i>Abdul Khadar</i>
8	Mrs. Arathi P.B	Member	Attended Offline	<i>P.B.</i>
9	Mr.Md Anwar	Member	Attended on line	<i>online</i>
10	Mr.Shridhar S M	Member	Attended Offline	<i>Shridhar S M</i>
11	Mr.Y Kamal Kishore	Member	Attended Offline	<i>Y Kamal</i>
12	Mr.Narasimhulu K	Member	Attended Offline	—
13	Mrs.Sujatha. D	Member	Attended Offline	<i>Sujatha D</i>
14	Mrs.Farzana Begum K.	Member	Attended Offline	<i>Farzana Begum K.</i>
15	Mrs.Parvathi	Member	Attended Offline	<i>Parvathi</i>
16	Mr.Harish Kumar G	Member	Attended Offline	<i>Harish Kumar G</i>
17	Mr.Santhosh B M	Member	Attended Offline	
18	Mr.Vijaya Krsihna M	Member	Attended Offline	<i>Vijaya Krsihna M</i>
19	Mr.Vijaya Kumar M K	Member	Attended Offline	<i>Vijaya Kumar M K</i>
20	Mrs. Pushpalatha kumari	Member	Attended Offline	<i>Pushpalatha kumari</i>

The meeting ended with vote of thanks by the chairman.

Sharana Reddy
 Head of the Department,
 Department of Electrical & Electronics Engineering,
 Ballari Institute of Technology & Management.



Basavarajeswari Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
Department of Management Studies

Date: 25/09/2023

Letter of Acceptance

All the Members of Board of Studies (BOS) have accepted for the Ratification of the Subject codes for the academic year 2023-24 and subject codes has been changed accordingly.

SLNO	Name of the Internal BOS Member		Signature
1	Dr. Janet Jyothi D'Souza	Chairman &HOD	
2	Dr. Christopher Raj D	Internal Member	
3	Dr. Shaheeda Banu S	Internal Member	
4	Dr. B. Anupama	Internal Member	

SLNO	Name of the External BOS Member		
1	Smt. SEEMA SALI	Curator, Advanced Technological Solutions	Online Acceptance
2	Dr. P RAVEENDRA	Professor Department of Management Studies, MS Ramaiah Institute of Technology, Bengaluru	Online Acceptance
3	Dr. T MANJUNATHA	Professor (Also Chairman, VTU BOS in MBA) Visvevaraya Technological University, BDT college of Engineering, Davangere	Online Acceptance
4	Mrs. DIVYA ACHARYA	Head HR-TCS Financial Solutions, Tata Consultancy	Online Acceptance
5	Mrs. GAYATRI	Global Resource Management, Cap gemini, Bengaluru	Online Acceptance
6	Mr. NARAYANA P	Vice president HR, KFIL, Koppal	Online Acceptance
7	Mr. VELU. V	Rtd General Manager-HR TATA Motors Ltd	Online Acceptance



Basavarajeswari Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
Department of Management Studies

Date: 12-09-2023

CIRCULAR

All the Board of Studies (BOS) Members are hereby informed to attend the meeting on 23/09/2023 (Saturday) @ 10.30 AM through online mode (Microsoft Teams) ,to discuss the following points as per the agenda.

Agenda:

1. Review and approval on Scheme & Syllabus of 3rd semester (Batch 2022-24)
2. Review and approval on Scheme & Syllabus of 4th semester (Batch 2022-24)

HOD-DMS

HOD, Management Studies,
Ballari Institute of Technology & Mana
BALLARI.

25/09/2023

Proceedings of the BOS Meeting held on 23/09/2023

Members Present

Members of Board of Studies

S. No	Name of Internal BOS Member	
1	Dr. Janet Jyothi Dsouza	Chairman & HOD
2	Dr. Christopher Raj	Internal Member
3	Dr. Shaheeda Banu S	Internal Member
4	Dr. B.Anupama	Internal Member

[Handwritten signatures and initials]

S. No	Name of External BOS Member	
1	Smt. SEEMA SALI	Curator, Advanced Technology Solutions, IIMC
2	Dr. P V RAVEENDRA	Professor, Dept. of Management Studies, MS Ramaiah Institute of Technology, Bengaluru
3	Dr. T MANJUNATHA,	Professor (Also Chairman, VTU BOS in MBA), Visvesvaraya Technological University BDT College of Engineering, Davanagere
4	Mrs. DIVYA ACHARYA	Head HR - TCS Financial Solutions, Tata Consultancy
5	Mrs. GAYATRI	Global Resource Management, Cap Gemini, Bangalore
6	Mr. NARAYANA P,	Vice President HR, KFIL, Koppal
7	Mr. VELU .V	Rtd General Manager-HR TATA Motors LTD

Minutes of the meeting

1. BOS meeting has been conducted to review the scheme & syllabus and finalize the courses and contents of 3rd & 4th sem for the academic year 2022-24 in online mode.
2. Dr. Janet Jyothi Dsouza, Chairman & HOD-DMS, has initiated the meeting by welcoming all Internal and External members of BOS.
3. HOD presented the Scheme of 3rd & 4th semester with specializations offered and three credits in each specialization:
 - Data Analytics
 - Logistics & Supply chain Management
 - Marketing
 - Finance
 - Human Resource
4. Panel Members approved three credits for each course and also mentioned to include practical element for practical oriented courses.
5. Internal members have presented syllabus content of courses in each specialization
6. Changes made in III sem specializations are as follows:
7. Dr. Raveendra has suggested in Course 22MBALS302 Warehouse Management to Exclude the word Packing to incorporate "Pack"
8. Shri Narayan P has suggested in Course 22MBALS302 Warehouse Management to include the topic called "Automation of Warehouse"
9. The Specialization of Data Analytics and Marketing, HR and Finance remains unchanged
10. Changes made in IV sem specializations are as follows:

Some changes are made in the specializations of Data Analytics for IV sem, Logistics & Supply chain, Finance for IV sem.

 - In R Programming for Managers, Topics on Numeric & Arithmetic, Assignment, vectors are added in 2st module. Higher dimensional arrays, control statements and interfacing R with other languages has been added in remain modules and 1st module doesn't have any changes.
 - Project Management is allotted with subject code of 22MBADA402 & Business Intelligence is allotted with the code of 22MBADA405.
 - Some elaborate topics are added in the courses of Logistics & Supply chain Management. Those topics are presented to panel members and panel members gave their approval for those contents.



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Department of Management Studies

- Financial Derivatives is allotted with code 22MBAFM402 and Wealth Management is allotted with the code 22MBAFM404 and some numerical problems are added in indirect taxation subject.
- The Specialization of Marketing, HR remains unchanged
- Above made changes are communicated to External members of BOS and discussions are carried out on the changes and approval has been received.

CONCLUSION

Suggestions mentioned above were accepted by all the board members and decided to incorporate necessary corrections and suggestions in the respective courses of all the specializations.

Meeting ended with vote of thanks proposed by Dr. Janet Jyothi Dsouza, HOD-DMS, to all the panel members of the BOS .

HOD

HOD, Management Studies,
Ballari Institute of Technology & Management,
BALLARI.

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III Semester

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
 3rd Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
 Data Analytics Specialization

Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credits
		Lecture	Practical component	Total	CIE	SEE		
22MBADA301	Data Analytics For Managers	2	2	4	50	50	100	3
22MBADA302	DataBase Management System	2	2	4	50	50	100	3
22MBADA303	Python Programming For Managers	2	2	4	50	50	100	3
22MBADA304	Data Warehousing	2	2	4	50	50	100	3
22MBADA305	Decision Support System	2	2	4	50	50	100	3
22MBADA306	Digital Transformation	2	2	4	50	50	100	3
22MBAIN307	Internship	0	8	8	50	50	100	4
22MBAAT308	Business Aptitude (Mandatory Non – Credit Course)	2	2	4	100	-	100	-
	Total	14	22	36	450	350	800	22

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
 3rd Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
 Logistics & Supply Chain Management Specialization

Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credits
		Lecture	Practical component	Total	CIE	SEE		
22MBALS301	Basics of Logistics and Supply Chain Management	2	2	4	50	50	100	3
22MBALS302	Warehouse Management	2	2	4	50	50	100	3
22MBALS303	Purchasing and Strategic Sourcing	2	2	4	50	50	100	3
22MBALS304	Inventory Management	2	2	4	50	50	100	3
22MBALS305	Supply Chain Management and Risk Modeling	2	2	4	50	50	100	3
22MBALS306	E-Logistics	2	2	4	50	50	100	3
22MBAIN307	Internship	0	8	8	50	50	100	4
22MBAAT308	Business Aptitude (Mandatory Non – Credit Course)	2	2	4	100	-	100	-
	Total	14	22	36	450	350	800	22

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
3rd Semester Scheme (Course with Dual Specialization)
(Effective from the academic year 2022-23)
Finance Specialization

SN	Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credits
			Lecture	Practical component	Total	CIE	SEE		
1	22MBAFM301	Financial Markets and Services	2	2	4	50	50	100	3
2	22MBAFM302	Investment Management	2	2	4	50	50	100	3
3	22MBAFM303	Direct Taxation	2	2	4	50	50	100	3
4	22MBAFM304	Advanced Financial Management	2	2	4	50	50	100	3
5	22MBAFM305	Mergers & Acquisition and Business Valuation	2	2	4	50	50	100	3
6	22MBAFM306	Financial Modeling	2	2	4	50	50	100	3
7	22MBAIN307	Internship	0	8	8	50	50	100	4
8	22MBAAT308	Business Aptitude (Mandatory Non – Credit Course)	2	2	4	100	-	100	-
		Total	14	22	36	450	350	800	22

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
3rd Semester Scheme (Course with Dual Specialization)
(Effective from the academic year 2022-23)
Marketing Specialization

SN	Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credits
			Lecture	Practical component	Total	CIE	SEE		
1	22MBAMM301	Behavioural Marketing	2	2	4	50	50	100	3
2	22MBAMM302	Advanced Retail Management	2	2	4	50	50	100	3
3	22MBAMM303	Services Marketing	2	2	4	50	50	100	3
4	22MBAMM304	Marketing Research and Analytics	2	2	4	50	50	100	3
5	22MBAMM305	Business Marketing	2	2	4	50	50	100	3
6	22MBAMM306	Tourism Marketing	2	2	4	50	50	100	3
7	22MBAIN307	Internship	0	8	8	50	50	100	4
8	22MBAAT308	Business Aptitude (Mandatory Non – Credit Course)	2	2	4	100	-	100	-
		Total	14	22	36	450	350	800	22

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
3rd Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
 Human Resource Specialization

Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credits
		Lecture	Practical component	Total	CIE	SEE		
MBAHR301	Talent Acquisition	2	2	4	50	50	100	3
MBAHR302	Human Resource Analytics	2	2	4	50	50	100	3
MBAHR303	Organizational Change Management	2	2	4	50	50	100	3
MBAHR304	Learning And Development	2	2	4	50	50	100	3
MBAHR305	Employee Relations & Labour Laws	2	2	4	50	50	100	3
MBAHR306	Human Resource Audit	2	2	4	50	50	100	3
MBAIN307	Internship	0	8	8	50	50	100	4
MBAAT308	Business Aptitude (Mandatory Non – Credit Course)	2	2	4	100	-	100	-
	Total	14	22	36	450	350	800	22

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IV Semester

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
 4th Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
 Data Analytics Specialization

SN	Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Cred
			Lecture	Practical component	Total	CIE	SEE		
1	22MBADA401	R Programming For Managers	2	2	4	50	50	100	3
2	22MBADA402	Project Management	3	0	3	50	50	100	3
3	22MBADA403	Enterprise Resource Planning	3	0	3	50	50	100	3
4	22MBADA404	Peoples Analytics	2	2	4	50	50	100	3
5	22MBADA405	Business Intelligence	2	2	4	50	50	100	3
6	22MBADA406	Corporate Social and Web Analytics	2	2	4	50	50	100	3
7	22MBAPR407	Project Work	0	16	16	50	50	100	08
		Total	14	08	22	350	350	700	26

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
 4th Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
 Logistics & Supply Chain Management Specialization

SN	Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Cred
			Lecture	Practical component	Total	CIE	SEE		
1	22MBALS401	Port and Airport Management for Logistics	2	2	4	50	50	100	3
2	22MBALS402	Global Supply Chain Management	2	2	4	50	50	100	3
3	22MBALS403	Export Import Management	2	2	4	50	50	100	3
4	22MBALS404	International Logistics Management	2	2	4	50	50	100	3
5	22MBALS405	Containerization and Multimodal Transportation Management	2	2	4	50	50	100	3
6	22MBALS406	Supply Chain Information System	2	2	4	50	50	100	3
7	22MBAPR407	Project Work	0	16	16	50	50	100	08
		Total	12	12	24	350	350	700	26

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
4th Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
 Finance Specialization

Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credits
		Lecture	Practical component	Total	CIE	SEE		
22MBAFM401	Risk Management & Insurance	2	2	4	50	50	100	3
22MBAFM402	Financial Derivatives	2	2	4	50	50	100	3
22MBAFM403	Indirect Taxation	2	2	4	50	50	100	3
22MBAFM404	Wealth Management	2	2	4	50	50	100	3
22MBAFM405	Behavioral Finance	2	2	4	50	50	100	3
22MBAFM406	International Financial Management	2	2	4	50	50	100	3
22MBAPR407	Project Work	0	16	16	50	50	100	08
	Total	12	12	24	350	350	700	26

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
4th Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
 Marketing Specialization

Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credits
		Lecture	Practical component	Total	CIE	SEE		
22MBAMM401	Sales Management	2	2	4	50	50	100	3
22MBAMM402	Integrated Marketing Communication & Advertising	2	2	4	50	50	100	3
22MBAMM403	Digital & Social Media Marketing	2	2	4	50	50	100	3
22MBAMM404	Strategic Brand Management	2	2	4	50	50	100	3
22MBAMM405	Rural Marketing	2	2	4	50	50	100	3
22MBAMM406	International Marketing Management	2	2	4	50	50	100	3
22MBAPR407	Project Work	0	16	16	50	50	100	08
	Total	12	12	24	350	350	700	26

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT - BALLARI
4th Semester Scheme (Course with Dual Specialization)
 (Effective from the academic year 2022-23)
Human Resource Specialization

SN	Course Code	Course Name	Teaching hours per week			Marks for		Total Marks	Credit
			Lecture	Practical component	Total	CIE	SEE		
1	22MBAHR401	Leadership & Building Organization	2	2	4	50	50	100	3
2	22MBAHR402	Personal Growth and Interpersonal Effectiveness	2	2	4	50	50	100	3
3	22MBAHR403	International Human Resource Management	2	2	4	50	50	100	3
4	22MBAHR404	Public Relations	2	2	4	50	50	100	3
5	22MBAHR405	Compensation Management & Reward system	2	2	4	50	50	100	3
6	22MBAHR406	Talent Management	2	2	4	50	50	100	3
7	22MBAHR407	Project Work	0	16	16	50	50	100	08
		Total	12	12	24	350	350	700	26



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Dr. B.S.Khened, Dean - Academics

Ph: 08392-237170, Email: dean_academics@bitm.edu.in

10-02-2024

Proceedings of BoS Meeting

Meeting of Board of Studies – Department of Master of Computer Applications is convened on 10/02/2024 at 10:45AM in Board Room, BITM, Ballari to approve the scheme and syllabus of I/II semester of MCA Department for the academic year 2023-24.

The following Members were Present

S.N	Name of the Member	Designation	Organization
1	Dr. Girish Kumar D	Chairperson	Professor & HOD, MCA Department, BITM, Ballari
2	Dr. R N Kulkarni	Special Invitee	Professor & HOD, CSE Department, BITM, Ballari
3	Dr. Dayanand J	Member	Professor & HOD, AIML Department, GNDEC, Bidar, Karnataka
4	Dr. Sangamesh C Jalade	Member	Professor & HOD, ISE Department, YIT, Mangaluru
5	Dr. Rajesh L	Member	Dr. Rajesh L Associate Professor, ISE Department DSATM, Bengaluru
6	Mr. Raveendra Kumar Medicherla	Member	Principal Scientist, TCS, Bengaluru
7	Mr. Yatish K S	Member	Oracle DBA at IBM Kyndryl at IBM, Bengaluru
8	Mrs. Renukambika P	Member	Principle Software Engineer, DELL Technologies, Bengaluru
9	Dr. S D N Hayath Ali	Member	Associate Professor, MCA Department, BITM, Ballari





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Dr. B.S.Khened, Dean - Academics

At the outset, the Chairman welcomed all the Honorable members for the 1st meeting of Board of Studies (PG) for discussing and finalizing the Scheme and Syllabus for MCA I & II Sem. for year 2023-2024. The subjects proposed for MCA I & II Sem. are:

MCA I & II Sem

I SEMESTER													
Sl. No	Course	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSSB)	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	BSC	23MCA11	Mathematical Foundation for Computer Applications	MATHS	3	0	0		03	50	50	100	3
2	IPCC	23MCA12	Operating System with UNIX	MCA	3	0	2		03	50	50	100	4
3	PCC	23MCA13	Data Structures and Applications	MCA	3	0	0		03	50	50	100	3
4	PCC	23MCA14	Software Engineering & Project Management	MCA	4	0	0		03	50	50	100	4
5	PCC	23MCA15	Web Technologies	MCA	3	0	0		03	50	50	100	3
6	PCCL	23MCAL16	Data Structures Laboratory	MCA	0	0	4		03	50	50	100	2
7	PCCL	23MCAL17	Web Technologies Laboratory	MCA	0	0	4		03	50	50	100	2
8	MCC	23MCA18	Research Methodology and IPR	MCA	3	0	0		03	50	50	100	3
9	AUD/AEC	23MCA19	BOS Recommended ONLINE Courses	Classes and evaluation procedures are as per the policy of the online course providers (Infosys Spring Board, NPTEL Courses)								PP	
									Total	400	400	800	24
Bridge Course is a non-credit course introduced to the students who are from non-computer science background													
II SEMESTER													
Sl. No	Course	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSSB)	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ SDA	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PCC	23MCA21	Database Management System	MCA	3	0	0		03	50	50	100	3
2	PCC	23MCA22	Object Oriented Programming with JAVA	MCA	3	0	0		03	50	50	100	3
3	PCC	23MCA23	Computer Networks	MCA	4	0	0		03	50	50	100	4
4	IPCC	23MCA24	Introduction to Python	MCA	3	0	2		03	50	50	100	4
5	PEC	23MCA25X	PROFESSIONAL Elective-1	MCA	3	0	0		03	50	50	100	3
6	PEC	23MCA26X	PROFESSIONAL Elective-2	MCA	3	0	0		03	50	50	100	3
7	PCCL	23MCAL27	DBMS Lab	MCA	0	0	4		03	50	50	100	2
8	PCCL	23MCAL28	JAVA Programming Lab	MCA	0	0	4		03	50	50	100	2
9	SEM	22MCA29	SEMINAR	MCA	0	0	4		03	100	--	100	2
									Total	500	400	900	26

Note: PCC: Professional core courses, PEC: Professional Elective Courses, IPCC-Integrated Professional Core Courses.



A Unit of T.E.H.R.D. Trust @ Ballari





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PROFESSIONAL Elective-1		PROFESSIONAL Elective-2	
Course Code under 22MCA25X	Course Title	Course Code under 22MCA26X	Course Title
23MCA251	Computer Graphics with Open GL	23MCA261	Introduction to Artificial Intelligence
23MCA252	Cyber Security	23MCA262	Mobile Application Development
23MCA253	Software Testing	23MCA263	Distributed Operating System
23MCA254	Introduction to Data Analytics	23MCA264	Natural Language Processing

The Chairman of the Board of Studies presented the Scheme and Syllabus for 2023 scheme subjects.

The suggestions and the action taken is given below:

OS 23MCA12	Suggestions	<ul style="list-style-type: none"> Incorporate at least one module with respect to UNIX command and operating system
	Action Taken	<ul style="list-style-type: none"> Incorporated two modules with respect to UNIX commands and operating system and the title is also appropriately changed
DBMS 23MCA21	Suggestions	<ul style="list-style-type: none"> Include a separate module on Normal forms
	Action Taken	<ul style="list-style-type: none"> Incorporated in the syllabus
OOP using JAVA 23MCA22	Suggestions	<ul style="list-style-type: none"> Incorporate lambda concepts instead of event handling and java swings
	Action Taken	<ul style="list-style-type: none"> Incorporated in the syllabus
Online Course 23MCA19	Suggestions	<ul style="list-style-type: none"> The members suggested to introduce various online courses (relevant courses from NPTEL, MOOCS, Infosys Spring Board, Quantum Learning) out of which the student has to select one course and complete the certification on that course
	Action Taken	<p>The list of certification course are:</p> <ul style="list-style-type: none"> C Programming Web Technology Research Methodology Data Structures Operating System Unix programming Software Project Management

Overall Summary:

Suggestions given by the honorable members were taken into consideration and the corrections are been incorporated in the syllabus. The honorable members expressed that the syllabus is well framed and satisfies the requirements. Also, the syllabus covers all the aspects of the learning as per the standards. It is quite apt and relevant as it will definitely enhances the learning experience of the students.



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Semester: I**Engineering science course**Course Name: **ELEMENTS OF MECHANICAL ENGINEERING**

Course Code	22EME13/23	CIE Marks	50
Teaching Hours/Week (L: T:P)	1:0:0	SEE Marks	50
Credits	3	Exam Hours	03
Total Hours of Pedagogy	40	Total Marks	100

Course Learning Objectives

- To develop basic Knowledge on Mechanical Engineering, Fundamentals and Energy Sources.
- Understand the concept of different types of Machine tool operations and Modern Manufacturing Processes like CNC, 3D printing.
- To know the concept of IC engines and Future Mobility vehicles.
- To give exposure in the field of Engineering Materials and Manufacturing Processes Technology and its applications

To acquire a basic understanding role of Mechanical Engineering in the Robotics and Automation in industry.

Teaching-Learning Process

Teaching-Learning Process

Adopt Problem Based Learning (PBL), which fosters students' Analytical skills and develops thinking skills such as evaluating, generalizing, and analyzing information.

- Adopt different types of teaching methods to develop the outcomes through PowerPoint presentations and Video demonstrations or Simulations.
- Arrange visits to show the live working models other than laboratory topics.
- Adopt collaborative (Group Learning) Learning in the class.

Module – 1**Introduction to Mechanical Engineering (Overview only):**

Role of Mechanical Engineering in Industries and Society- Emerging Trends and Technologies in different sectors such as Energy, Manufacturing, Automotive, Aerospace, and Marine sectors.

Steam Formation and Application:

Modes of heat transfer, Steam formation, Types of steam, Steam properties and applications of steam (simple numerical problems).

Energy Sources and Power Plants:

Basic working principles of Hydel power plant, Thermal power plant, nuclear power plant, Solar power plant, Tidal power plant and Wind power plant.

08 Hours

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Module - 2**Machine Tool Operations:**

Lathe: Principle of working of a center lathe, lathe operations: Turning, facing, knurling, thread cutting, taper turning by swiveling the compound rest,

Drilling Machine: Working of simple drilling machine, drilling operations: drilling, boring, reaming, tapping, counter sinking, counter boring,

Milling Machine: Working methods of milling (up milling and Down milling), milling operations: plane milling, end milling and slot milling.

(No sketches of machine tools, sketches to be used only for explaining the operations).

Introduction to Advanced Manufacturing Systems: Introduction, components of CNC, advantages and applications of CNC, 3D printing.

08 Hours**Module - 3**

Introduction to IC Engines: Components and working principles, 4-Stroke Petrol and Diesel engines, Application of IC Engines, performance of IC engines (Simple numerical).

Introduction to Refrigeration and Air Conditioning: Principle of refrigeration, Refrigerants, and their desirable properties. Working principle of VCR and VAR refrigeration system, working principle of room air conditioner & Applications of air Conditioners.

08 Hours**Module - 4****Mechanical Power Transmission:**

Gear Drives: Types - spur, helical, bevel, worm and rack and pinion, velocity ratio, simple and compound gear trains (simple numerical problems)

Belt Drives: Introduction, Types of belt drives (Flat and V-Belt Drive)

Joining Processes: Soldering, Brazing and Welding, Definitions, classification of welding process, Arc welding, Gas welding, (types of flames), TIG welding, MIG welding, Thermit welding, Laser beam welding and Electron beam welding processes

08 Hours**Module - 5**

Insight into future mobility technology; Electric and Hybrid Vehicles, Components of Electric and Hybrid Vehicles. Advantages and disadvantages of Electric Vehicles (EVs) and Hybrid vehicles.

Introduction to Mechatronics and Robotics: open-loop and closed-loop mechatronic systems. Robot anatomy, Applications of Robots in material handling, processing and assembly and inspection.

08 Hours

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COURSE OUTCOMES:

At the end of the course, the student will be able to:

CO1	Acquire a basic understanding about scope of mechanical engineering, fundamentals about steam and nonconventional energy sources.
CO2	Acquire a basic knowledge about conventional and advanced manufacturing processes.
CO3	Acquiring a basic understanding about IC engines, propulsive devices, and air-conditioner
CO4	Acquiring a basic knowledge about power transmission and joining processes.
CO5	Acquiring a basic insight into future mobility and mechatronics and robotics.

Assessment Details:

CIE:

	Components	Number	Weightage	Max. Marks
(i)	Tests (A)	3*	60%	30
(ii)	Alternate Assessment Tools (AAT) (B)	3-4	40%	20
	Total Marks			50

Final CIE Marks = (A) + (B)

The following are the Alternate Assessment Tools and not limited to: Quiz, Assignments, Presentations, Paper Publications, MOOCs, Industrial Visits and Report Writing, Open Book, Self E-Learning with Certifications, and other cooperative and problem-based learning.

(Preferred pattern of all tests are like the SEE pattern, however; teacher may follow the CIE test pattern of other engineering courses)
Two assignments each of 10 Marks

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50).

A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination (SEE), and a minimum of 40% (40 marks out of 100) in the sum of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation (CIE):

Three Unit Tests each of 20 Marks (duration 01 hour)

- First test at the end of 5th week of the semester
- Second test at the end of the 10th week of the semester
- Third test at the end of the 15th week of the semester

Two assignments each of 10 Marks

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- First assignment at the end of 4th week of the semester
- Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for 20 Marks (duration 01 hours) at the end of the 13th week of the semester.

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be scaled down to 50 marks

Semester End Examination (SEE):

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (duration 03 hours)

The question paper shall be set for 100 marks. The medium of the question paper shall be English/Kannada). The duration of SEE is 03 hours.

The question paper will have 10 questions. Two questions per module. Each question is set for 20 marks. The students must answer 5 full questions, selecting one full question from each module. The student must answer for 100 marks and marks scored out of 100 shall be proportionally reduced to 50 marks.

There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), should have a mix of topics under that module.

Suggested Learning Resources:

SN	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbooks				
1	Engineering Design	John. Kurnitz, Stephen O'Brien and John P. Hutchinson	Cengage learning	Second Edition, 2013
2	The Design of Business	Roger Martin	Harvard Business Press	2009
3	Design Thinking: Understand – Improve – Apply	Hasso Plattner, Christoph Meinel and Larry Leifer	Springer	2011.
Reference Books				
1	Design Thinking for Strategic Innovation	Idris Mootee	John Wiley & Sons	Second Edition, 2011.
2	Engineering Design Process	Yousef Haik and Tamer M. Shahin	Cengage Learning	1st edition, 2012

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E-Resources:

17. www.tutor2u.net/business/presentations/. /Product lifecycle/default.html
18. https://docs.oracle.com/cd/E11108_02/otn/pdf/. /E11087_01.pdf
19. www.bizfilings.com > Home > Marketing > Product Development
20. <http://www.mindtools.com/brainstm.html>
21. <https://www.quicksprout.com/. /How-to-reverse-engineer-your-competitor>
22. www.vertabelo.com/blog/documentation/reversengineering
23. <https://support.microsoft.com/en-us/kb/273814>
24. <https://support.google.com/docs/answer/179740?hl=en>
25. <https://www.youtube.com/watch?v=2mjSDlBaUIM>thevirtualinstructor.com/foreshortening.html
26. <https://dschool.stanford.edu/.../designresources/.../ModeGuideBOOTCAMP2010L.pdf>
27. <https://dschool.stanford.edu/use-our-methods/>
28. <https://www.interaction-design.org/literature/article/stages-in-the-design-thinking-process>
29. <http://www.creativityatwork.com/design-thinking-strategy-for-innovation/> 49 8.
30. <https://www.nngroup.com/articles/design-thinking/>
31. <https://designthinkingforeducators.com/design-thinking/>
32. www.designthinkingformobility.org/wp-content/.../10/NapkinPitch_Worksheet.pdf

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning
<http://dschool.stanford.edu/dgift/>



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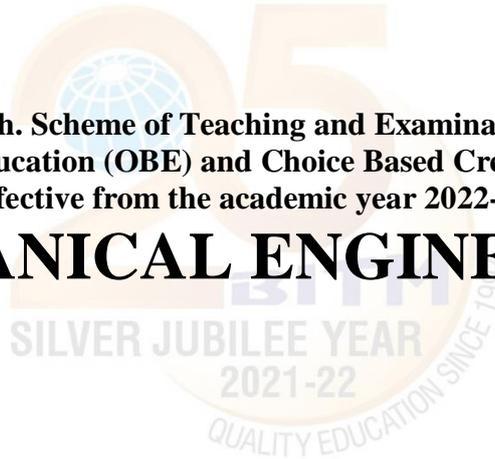
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BE/B.Tech. Scheme of Teaching and Examinations-2022
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2022-23)

MECHANICAL ENGINEERING



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SN	Category
1	ASC-Applied Science Course.
2	ESC- Engineering Science Courses.
3	ETC- Emerging Technology Course.
4	PLC- Programming Language Course.
5	AEC- Ability Enhancement Course.
6	HSMC-Humanity and Social Science and management Course.
7	AEC- Ability Enhancement Course.
8	SDC- Skill Development Course.
9	IC – Integrated Course (Theory Course Integrated with Practical Course).
10	
11	
12	



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I Semester

Scheme of Teaching and Examination 2022-23

Outcome-Based Education(OBE) and Choice Based Credit System(CBCS) (Effective from the academic year 2022-23)

For Physics Group

I Semester (Mechanical Engineering Stream)													
Sl. No	Course and Course Code		Course title	TD/PSB	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
1	*ASC(IC)	22MATM11	Mathematics for MES-I	Maths	2	2	2	0	03	50	50	100	04
2	#ASC(IC)	22PHYM12	Physics for MES	PHY	2	2	2	0	03+02	50	50	100	04
3	ESC	22EME13	Elements of Mechanical Engineering	Mechanical	If offered as theory course				03	50	50	100	03
					2	2	0	0					
3	ESC	22EME13	Elements of Mechanical Engineering	Mechanical	If offered as Integrated course				03	50	50	100	03
					2	0	2	0					
4	ESC-I	22ESC14x	Engineering Science Course-I	Respective Engg Dept.	3	0	0	0	03	50	50	100	03
5	ETC-I	22ETC15x	Emerging Technology Course-I	Any Engineering Dept	3	0	0	0	03	50	50	100	03
					OR				2				
6	AEC	22ENG16	Communicative English	Humanities	1	0	0	0	01	50	50	100	01
7	HSMC	22KSK17/ 22KKB17	Sanskritika Kannada/ Balake Kannada	Humanities	1	0	0	0	01	50	50	100	01
		OR											
8	AEC/SDC	22IDT18	Innovation and Design Thinking	Any Dept	1	0	0	0	01	50	50	100	01
		OR											
TOTAL										400	400	800	20

SDA-Skill Development Activities, TD/PSB- Teaching Department / Paper Setting Board, ASC-Applied Science Course, ESC- Engineering Science Courses, ETC- Emerging Technology Course, AEC- Ability Enhancement Course, HSMS-Humanity and Social Science and management Course, SDC- Skill Development Course, CIE-Continuous Internal Evaluation, SEE- Semester End Examination, IC – Integrated Course (Theory Course Integrated with Practical Course)

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(Recognized by Govt. of Karnataka & AICTE, New Delhi)

"Jnana Gangotri" Campus, #873/2, Ballari-Hosapete Road, Near Allipura, Ballari-583 104 (Karnataka)

Credit Definition:

1- hour Lecture (L) per week=1Credit
 2-hours Tutorial(T) per week=1Credit
 2- hours Practical / Drawing (P) per week=1Credit
 2-hous Skill Development Actives (SDA) per week = 1 Credit

04-Credits courses are to be designed for 50 hours of Teaching-Learning Session
 04-Credits (IC) are to be designed for 40 hours' theory and 12-14 hours of practical sessions
 03-Credits courses are to be designed for 40 hours of Teaching-Learning Session
 02- Credits courses are to be designed for 25 hours of Teaching-Learning Session
 01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions

Student's Induction Program: Motivating (Inspiring) Activities under the Induction program – The main aim of the induction program is to provide newly admitted students a broad understanding of society, relationships, and values. Along with the knowledge and skill of his/her study, students' character needs to be nurtured as an essential quality by which he/she would understand and fulfill the responsibility as an engineer. The following activities are to be covered in 21 days. Physical Activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to Local areas, Familiarization with Department/Branch and Innovation, etc. For details, refer the ANNEXURE- I of Induction Programs notification of the University published at the beginning of the 1st semester.

AICTE Activity Points to be earned by students admitted to BE/ B.Tech., / B. Plan day college program (For more details refer to Chapter 6, AICTE Activity Point Program, Model Internship Guidelines): Over and above the academic grades, every regular student admitted to the 4 years Degree program and every student entering 4 years Degree programs through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Program. Students transferred from other Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, any time during the semester weekends, and holidays, as per the liking and convenience of the student from the year of entry to the program. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, an Eighth Semester Grade Card shall be issued only after earning the required activity points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

*-22MATM11 Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers
 #-22PHYM12 SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination
ESC or ETC of 03 credits Courses shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required practical learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0).
All 01 Credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

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(ESC-I) Engineering Science Courses-I					(ETC-I) Emerging Technology Courses-I				
Code	Title	L	T	P	Code	Title	L	T	P
22ESC141	Introduction to Civil Engineering	3	0	0	22ETC15A	Smart Materials and Systems	3	0	0
22ESC142	Introduction to Electrical Engineering	3	0	0	22ETC15B	Green Buildings	3	0	0
22ESC143	Introduction to Electronics Engineering	3	0	0	22ETC15C	Operation and Maintenance of Solar Electric Systems	3	0	0
22ESC144	Introduction to Mechanical Engineering	3	0	0	22ETC15D	Introduction to Embedded System	3	0	0
22ESC145	Introduction to C Programming	2	0	2	22ETC15E	Introduction to Nano Technology	3	0	0
					22ETC15F	Introduction to Drone Technology	3	0	0
					22ETC15G	Introduction to Sustainable Engineering	3	0	0
					22ETC15H	Renewable Energy Sources	3	0	0
					22ETC15I	Waste Management	3	0	0
					22ETC15J	Emerging Applications of Biotechnology	3	0	0
					22ETC15K	Introduction to Internet of Things (IOT)	3	0	0
					22ETC15L	Introduction to Cyber Security	3	0	0
(PLC-I) Programming Language Courses-I									
Code	Title	L	T	P					
22PLC15A	Introduction to Web Programming	2	0	2					
22PLC15B	Introduction to Python Programming	2	0	2					
22PLC15C	Basics to JAVA programming	2	0	2					
22PLC15D	Introduction to C++ Programming	2	0	2					

- The student has to select one course from the ESC-I group.
- MES stream Students shall opt for any one of the courses from the ESC-I group **except, 22ESC144- Introduction to Mechanical Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-I or PLC-I group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa

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II Semester

Scheme of Teaching and Examination 2022-23

Outcome-Based Education (OBE) and Choice Based Credit System(CBCS)

(Effective from the academic year 2022-23)

 For Physics Group(For the students who attend the 1st semester under Physics Group)

II Semester (Mechanical Engineering Stream)													
Sl. No	Course and Course Code		Course title	TD/PSB	Teaching Hours/Week				Examination				
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	*ASC(IC)	22MATM21	Mathematics for MES-II	Maths	2	2	2	0	03	50	50	100	04
2	#ASC(IC)	22CHE22	Chemistry for MES	Chemistry	2	2	2	0	03+02	50	50	100	04
3	ESC	22CED23	Computer-Aided Engineering Drawing	Mechanical	2	0	2	0	03	50	50	100	03
4	ESC-II	22ESC24x	Engineering Science Course-II	Respective Engg Dept.	3	0	0	0	03	50	50	100	03
5	PLC-II	22PLC25x	Programming language Course-II	Any Engineering Dept	3	0	0	0	03+02	50	50	100	03
	OR												
	ETC-II	22ETC25x	Emerging Technology Course-II		3	0	0	0	03				
6	AEC	22PWS26	Professional Writing Skills in English	Humanities	1	0	0	0	01	50	50	100	01
7	HSMC	22KSK27/ 22KBK27	Sanskritika Kannada/ Balake Kannada	Humanities	1	0	0	0	01	50	50	100	01
		OR											
		22ICO27	Indian Constitution										
8	AEC/SDC	22IDT28	Innovation and Design Thinking	Any Dept	1	0	0	0	01	50	50	100	01
		OR											
		22SFH28	Scientific Foundations of Health		1	0	0	0	01				
TOTAL										400	400	800	20

SDA-Skill Development Activities, TD/PSB- Teaching Department / Paper Setting Board, ASC-Applied Science Course, ESC- Engineering Science Courses, ETC- Emerging Technology Course, AEC- Ability Enhancement Course, HSMS-Humanity and Social Science and management Course, SDC- Skill Development Course, CIE-Continuous Internal Evaluation, SEE- Semester End Examination, IC – Integrated Course (Theory Course Integrated with Practical Course)

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*-22MATM21 Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers

#-22CHEM22- SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination

ESC or ETC of 03 credits Courses shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required practical learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0)

All 01 Credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

(ESC-II) Engineering Science Courses-II					(ETC-II) Emerging Technology Courses-II				
Code	Title	L	T	P	Code	Title	L	T	P
22ESC241	Introduction to Civil Engineering	3	0	0	22ETC25A	Smart materials and Systems	3	0	0
22ESC242	Introduction to Electrical Engineering	3	0	0	22ETC25B	Green Buildings	3	0	0
22ESC243	Introduction to Electronics Engineering	3	0	0	22ETC25C	Operation and Maintenance of Solar ElectricSystems	3	0	0
22ESC244	Introduction to Mechanical Engineering	3	0	0	22ETC25D	Introduction to Embedded System	3	0	0
22ESC245	Introduction to C Programming	2	0	2	22ETC25E	Introduction to Nano Technology	3	0	0
					22ETC25F	Introduction to Drone Technology	3	0	0
					22ETC25G	Introduction to Sustainable Engineering	3	0	0
					22ETC25H	Renewable Energy Sources	3	0	0
					22ETC25I	Waste Management	3	0	0
					22ETC25J	Emerging Applications of Biotechnology	3	0	0
					22ETC25K	Introduction to Internet of Things(IoT)	3	0	0
					22ETC25L	Introduction to Cyber Security	3	0	0
(PLC-II) Programming Language Courses-II									
Code	Title	L	T	P					
22PLC25A	Introduction to Web Programming	2	0	2					
22PLC25B	Introduction to Python Programming	2	0	2					
22PLC25C	Basics of JAVA programming	2	0	2					
22PLC25D	Introduction to C++ Programming	2	0	2					

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- The student has to select one course from the ESC-II group.
- Mechanical Engineering stream Students shall opt for any one of the courses from the ESC-II group **except, 22ESC244-Introduction to Mechanical Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-II or PLC-II group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa



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I Semester

Scheme of Teaching and Examination 2022-23

Outcome-Based Education (OBE) and Choice Based Credit System(CBCS)

(Effective from the academic year 2022-23)

I Semester (Mechanical Engineering Stream)					(For Chemistry group)								
Sl.No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	*ASC(IC)	22MATM11	Mathematics for ME Streams-I	Maths	2	2	2	0	03	50	50	100	04
2	#ASC(IC)	22CHEE12	Chemistry for ME Streams	Chemistry	2	2	2	0	03+02	50	50	100	04
3	ESC	22CED13	Computer Aided Engineering Drawing	Civil/Mech Enggdept	2	0	2	0	03	50	50	100	03
4	ESC-I	22ESC14x	Engineering Science Course-I	Respective Engg Dept	3	0	0	0	03	50	50	100	03
5	ETC-I	22ETC15x	Emerging Technology Course-I/	Any Engg Dept	3	0	0	0	03	50	50	100	03
	OR												
	PLC-I	22PLC15x	Programming Language Course-I		2	0	2	0	03+02				
6	AEC	22PWS16	Professional Writing Skills in English	Humanities	1	0	0	0	01	50	50	100	01
7	HSMS	22ICO17	Indian Constitution	Humanities	1	0	0	0	01	50	50	100	01
		OR											
		22KSK17 22KKBK17	Sanskritika Kannada/ Balake Kannada										
8	AEC/SEC	22SFH18	Scientific Foundations for Health	Any Dept	1	0	0	0	01	50	50	100	01
		OR											
		22IDT18	Innovation and Design Thinking		1	0	0	0	01				
TOTAL										400	400	800	20

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SDA-Skill Development Activities, **TD/PSB**- Teaching Department / Paper Setting Board, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**- Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSMS**-Humanity and Social Science and management Course, **SDC**- Skill Development Course, **CIE** -Continuous Internal Evaluation, **SEE**- Semester End Examination, **IC** – Integrated Course (Theory Course Integrated with Practical Course)

*-**22MATM11** Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers

#-**22CHEM12**- SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination **ESC or ETC of 03 credits Courses** shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required practical learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0) Questions from the practical component shall be included in SEE, however, there is no SEE for practical component.

All 01 Credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

Credit Definition:

- 1-hour Lecture (L) per week=**1Credit**
- 2-2-hours Tutorial(T) per week=**1Credit**
- 3-hours Practical / Drawing (P) per week=**1Credit**
- 2-hous Skill Development Actives (SDA) per week = **1 Credit**

- 04-Credits courses are to be designed for 50 hours of Teaching-Learning Session 04-Credits (IC) are to be designed for 40 hours' theory and 12-14 hours of practicalsessions
- 03-Credits courses are to be designed for 40 hours of Teaching-Learning Session 02- Credits courses are to be designed for 25 hours of Teaching-Learning Session
- 01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions

Student's Induction Program: Motivating (Inspiring) Activities under the Induction program – The main aim of the induction program is to provide newly admitted students a broad understanding of society, relationships, and values. Along with the knowledge and skill of his/her study, students' character needs to be nurtured as an essential quality by which he/she would understand and fulfill the responsibility as an engineer. The following activities are to be covered in 21 days. Physical Activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to Local areas, Familiarization with Department/Branch and Innovation, etc. For details, refer the ANNEXURE-I of Induction Programs notification of the University published at the beginning of the 1st semester.

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AICTE Activity Points to be earned by students admitted to BE/ B.Tech., / B. Plan day college program (For more details refer to Chapter 6, AICTE Activity Point Program, Model Internship Guidelines): Over and above the academic grades, every regular student admitted to the 4 years Degree program and every student entering 4 years Degree programs through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Program. Students transferred from other Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, any time during the semester weekends, and holidays, as per the liking and convenience of the student from the year of entry to the program. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, an Eighth Semester Grade Card shall be issued only after earning the required activity points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

(ESC-I) Engineering Science Courses-I					(ETC-I) Emerging Technology Courses-I				
Code	Title	L	T	P	Code	Title	L	T	P
22ESC141	Introduction to Civil Engineering	3	0	0	22ETC15A	Smart Materials and Systems	3	0	0
22ESC142	Introduction to Electrical Engineering	3	0	0	22ETC15B	Green Buildings	3	0	0
22ESC143	Introduction to Electronics Engineering	3	0	0	22ETC15C	Operation and Maintenance of Solar Electric Systems	3	0	0
22ESC144	Introduction to Mechanical Engineering	3	0	0	22ETC15D	Introduction to Embedded System	3	0	0
22ESC145	Introduction to C Programming	2	0	2	22ETC15E	Introduction to Nano Technology	3	0	0
					22ETC15F	Introduction to Drone Technology	3	0	0
					22ETC15G	Introduction to Sustainable Engineering	3	0	0
					22ETC15H	Renewable Energy Sources	3	0	0
					22ETC15I	Waste Management	3	0	0
					22ETC15J	Emerging Applications of Biotechnology	3	0	0
					22ETC15K	Introduction to Internet of Things (IOT)	3	0	0
					22ETC15L	Introduction to Cyber Security	3	0	0
(PLC-I) Programming Language Courses-I									
Code	Title	L	T	P					
22PLC15A	Introduction to Web Programming	2	0	2					
22PLC15B	Introduction to Python Programming	2	0	2					
22PLC15C	Basics to JAVA programming	2	0	2					
22PLC15D	Introduction to C++ Programming	2	0	2					

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- The student has to select one course from the ESC-I group.
- MES stream Students shall opt for any one of the courses from the ESC-I group **except, 22ESC144-Introduction to Mechanical Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-I or PLC-I group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa



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II Semester

Scheme of Teaching and Examination 2022-23

Outcome-Based Education (OBE) and Choice Based Credit System(CBCS)

(Effective from the academic year 2022-23)

II Semester (Mechanical Engineering Stream. (For the students who have attended Isemster under Chemistry Group)

Sl.No	Course and CourseCode		Course Title	TD/PSB	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
1	*ASC(IC)	22MATM21	Mathematics for ME Streams-II	Maths	3	0	2	0	03	50	50	100	04
2	#ASC(IC)	22PHYM22	Physics for ME Streams	PHY	2	2	2	0	03+02	50	50	100	04
3	ESC	22EME23	Elements of Mechanical Engineering	Mechanical	If offered as theory course				03	50	50	100	03
					2	2	0	0					
4	ESC-II	22ESC24x	Engineering Science Course-II	Respective Engg Dept	If offered as Integrated course				03	50	50	100	03
					2	0	2	0					
5	PLC-II	22PLC25x	Programing Language Course-II	Any Engg Dept	2	0	2	0	03+02	50	50	100	03
					OR				03				
	ETC-II	22ETC25x	Emerging Technology Course-II		3	0	0	0	03				
6	AEC	22ENG26	Communicative English	Humanities	0	2	0	0	01	50	50	100	01
7	HSMC	22KSK27	Samskrutika Kannada/ Balake Kannada	Humanities	0	2	0	0	01	50	50	100	01
		22KKBK27											
		OR			22ICO27	Indian Constitution							
8	AEC/SDC	22IDT28	Innovation and Design Thinking	Any Dept	0	0	2	0	02	50	50	100	01
		OR											
		22SFH28	Scientific Foundations of Health		1	0	0	0	01				
TOTAL										400	400	800	20

SDA-Skill Development Activities, TD/PSB- Teaching Department / Paper Setting Board, ASC-Applied Science Course, ESC- Engineering Science Courses, ETC- Emerging

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Technology Course, **AEC**- Ability Enhancement Course, **HSMS**-Humanity and Social Science and management Course, **SDC**- Skill Development Course, **CIE**-Continuous Internal Evaluation, **SEE**- Semester End Examination, **IC** – Integrated Course (Theory Course Integrated with Practical Course)

*-**22MATM21** Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers

#-**22PHYM22** SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination

ESC or ETC of 03 credits Courses shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required practical learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0),.

All 01 Credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

(ESC-II) Engineering Science Courses-II					(ETC-II) Emerging Technology Courses-II				
Code	Title	L	T	P	Code	Title	L	T	P
22ESC241	Introduction to Civil Engineering	3	0	0	22ETC25A	Smart materials and Systems	3	0	0
22ESC242	Introduction to Electrical Engineering	3	0	0	22ETC25B	Green Buildings	3	0	0
22ESC243	Introduction to Electronics Engineering	3	0	0	22ETC25C	Operation and Maintenance of Solar ElectricSystems	3	0	0
22ESC244	Introduction to Mechanical Engineering	3	0	0	22ETC25D	Introduction to Embedded System	3	0	0
22ESC245	Introduction to C Programming	2	0	2	22ETC25E	Introduction to Nano Technology	3	0	0
					22ETC25F	Introduction to Drone Technology	3	0	0
					22ETC25G	Introduction to Sustainable Engineering	3	0	0
					22ETC25H	Renewable Energy Sources	3	0	0
					22ETC25I	Waste Management	3	0	0
					22ETC25J	Emerging Applications of Biotechnology	3	0	0
					22ETC25K	Introduction to Internet of Things(IoT)	3	0	0
					22ETC25L	Introduction to Cyber Security	3	0	0
(PLC-II) Programming Language Courses-II									
Code	Title	L	T	P					
22PLC25A	Introduction to Web Programming	2	0	2					
22PLC25B	Introduction to Python Programming	2	0	2					
22PLC25C	Basics to JAVA programming	2	0	2					
22PLC25D	Introduction to C++ Programming	2	0	2					

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- The student has to select one course from the ESC-II group.
- Mechanical Engineering stream Students shall opt for any one of the courses from the ESC-II group **except, 22ESC244-Introduction to Mechanical Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-II or PLC-II group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa



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"Jnana Gangotri" Campus, #873/2, Ballari-Hosapete Road, Near Allipura, Ballari-583 104 (Karnataka)

Semester: I**(COMMON TO ALL BRANCHES)****Course Title: Computer Aided Engineering Drawing**

Course Code	22CAED13/23	CIE Marks	50
Teaching Hours/Week (L:T:P)	2:0:2	SEE Marks	50
Credits	03	Exam Hours	03
Total Number of Pedagogy Hours	40	Total Marks	100

Pre-requisites: Knowledge of basic geometrical shapes and instruments, measurement, unit conversions

Course objectives:

- Understand drawing as a communication mode
- Expose students to standards and conventions followed in preparation of engineering drawings
- Develop the ability of conveying the engineering information through drawings
- Acquire the knowledge of generating the orthographic views of lines, planes and solids.
- Understand the development of surfaces and isometric projections.
- To make them understand the relevance of engineering drawings to different engineering domains

Module – 1

Introduction to Sketching: Principles of Engineering Graphics and their significance, Drawing Instruments and their uses, BIS conventions, free hand sketching, Drawing sheets, Fundamentals of Scales, Introduction to Software (solid edge): Creation of 2D/3D environment, selection of drawing sheet size and scale, different commands, Dimensioning rules, Line Conventions.

Introduction to Orthographic Projections, planes of projection, reference line and conventions employed, First and Third angle of projection,

Orthographic Projections of points situated in all four quadrants.

Orthographic Projection of straight lines located in first quadrant with inclined to VP and HP. Problems on applications of straight lines without traces.

Orthographic Projection of plane surfaces (First angle projection only) Projection of regular plane surfaces- triangle, square, rectangle, pentagon, hexagon and circular laminae in simple positions resting on HP/ VP and inclined to HP/ VP using change of position method. (No problems on punched and composite plates).

10 Hours

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Module - 2**Orthographic Projection of Solids:** Introduction, Projections of right regular solids- prisms & pyramids (triangle, square, rectangle, pentagon and hexagon), cones, cubes (hexahedron) and tetrahedron, solids resting on HP ONLY**10 Hours****Module – 3****Isometric Projection:** Introduction, Isometric scale, Isometric projection of- simple plane figures, individual solids and combination of two simple solids, Conversion of Isometric to orthographic views. Problems on applications of Isometric projection of simple Engineering components and conversion to orthographic projections (Mechanical, electrical and electronic components for CIE only).**10 Hours****Module - 4****Development of Lateral Surfaces of Solids:** Development of lateral surfaces of right regular prisms, pyramids, cylinders and cones resting with base on HP only. Development of lateral surfaces of Sphere, frustums and truncation. Problems on applications of Development of lateral surfaces viz, funnel, tray, transition pieces, connecting two ducts**10 Hours****Module – 5****Engineering Applications of Engineering Graphics:** Sketching and drawing simple Mechanisms, wiring and lighting diagrams, Basic building Drawings, Electronic Drawing- PCB Drawings. Introduction to Development of Computer Graphical Packages**10 Hours****COURSE OUTCOMES:**

At the end of the course, the student will be able to:

CO1	Understand the basics of Engineering graphics and to implement the principles of orthographic projections of points, lines and planes,
CO2	Analyze and draw the orthographic projections of solids.
CO3	Visualize three dimensional objects and to draw Isometric projection
CO4	Develop the lateral surfaces of solids
CO5	Visualize the components used in Engineering disciplines.

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Assessment Details

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks) and that for SEE minimum passing marks is 35% of the maximum marks (18 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination (SEE), and a minimum of 40% (40 marks out of 100) in the sum of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Examination / Evaluation (CIE):

	Components	Number	Weightage	Max. Marks
(i)	Tests (A)	3*	60%	30
(ii)	Alternate Assessment Tools(AAT) (B)	3-4	40%	20
	Total Marks			50

Final CIE Marks = (A) + (B)

The Alternate Assessment Tools are Quiz, Assignments, Presentations, Open Book, Self E-Learning and Model Making.

Semester End Examination (SEE):

The SEE question paper will be set for 100 marks and the marks will be proportionally reduced to 50.

1. The question paper will have 8 full questions from module-1 to module-4 as per below tabled

Module	Max. Marks Weightage	Evaluation Weightage in marks	
		Computer display and print out (a)	Preparatory sketching (b)
Module 1	20	13	07
Module 2	30	19	11
Module 3	25	16	09
Module 4	25	16	09
Total	100	64	36
Consideration of SEE Marks		Total of (a) + (b) ÷ 2 = Final SEE marks	

weightage details.

2. The students will have to answer 4 full questions, selecting one full question from each module.

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Suggested Learning Resources:

SN	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbooks				
1	Engineering Drawing: Plane and Solid Geometry	Bhatt, N.D	53rd Edition, Charotar Publishing House Pvt. Limited, Gujarat	2019
2	Engineering Graphics	GopalakrishnaK.R	32nd Edition, Subash Stores, Bangalore	2005
3				
Reference Books				
1	A Textbook of Engineering Drawing	Dhawan R. K	3/e, S. Chand Publishing	2019
2	A Textbook of Engineering Graphics	Venugopal K., and Prabhuraj	New Age International Publishers	2014
3	Engineering Drawing	Parthasarathy N. S., Vela Murali,	Oxford University Press	2015

E-Resources:

1. <https://www.youtube.com/watch?v=p62LPzFqGQw>: Engineering Graphics and Design - Intro, IIT Delhi
2. <https://youtu.be/26-RdMraMAY>: Orthographic Projections, NPTEL
3. <https://youtu.be/DW7dpKdxVrA>: Orthographic Projections, NPTEL
4. <https://www.youtube.com/watch?v=AoNIOxnxDO0&list=PLlhUrsYr8yHx7TVB51jN3HZV yW3R6RiBq>
5. <https://www.youtube.com/watch?v=7JpSSBVeSpl>
6. <https://www.youtube.com/watch?v=66R4esOwuAg&list=RDCMUCNQHebTzfRahptcsmuOVufg&index=4>

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Semester: I/II

(ETC-I/II) Emerging Technology Courses-I/II

(Mechanical Engineering stream)

Course Name: INTRODUCTION TO SUSTAINABLE ENGINEERING

Course Code	22ETC15g/25g	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Credits	03	Exam Hours	03
Total Number of Pedagogy Hours	40	Total Marks	100

Pre-requisites:

Course Learning Objectives:

- To familiarize the students to the area of sustainability and concepts of sustainability engineering.
- To enable students with an understanding of principles and frame work of sustainable engineering
- To provide students with an understanding of Life Cycle Assessment tool in sustainable engineering.
- To provide students with understanding of integration of sustainability with design. Teaching-Learning Process.

Module – 1

Sustainable Development and Role of Engineers: Introduction, Why and What is Sustainable Development, THE SDFs, Paris Agreement and Role of Engineering, Sustainable Development and the Engineering Profession, Key attributes of the Graduate Engineering

Sustainable Engineering Concepts: Key concepts – Factor 4 and Factor 10: Goals of sustainability, System Thinking, Life Cycle Thinking and Circular Economy

08 Hours

Module - 2

Sustainable Engineering and Concepts, Principles and Frame Work: Green Economy and Low Carbon Economy, Eco Efficiency, Triple bottom Line, Guiding principles of sustainable engineering, Frameworks for sustainable Engineering.

Tools for sustainability Assessment: Environmental Management System, Environmental Auditing, Cleaner Production Assessment, Environmental Impact Assessment, Strategic Environmental

08 Hours

Module – 3

Fundamentals of Life Cycle Assessment

Why and What is LCA, LCA Goal and Scope, Life cycle inventory, Life Cycle Impact Assessment, Interpretation and presentation of Results, Iterative Nature of LCA, Methodological Choices, LCI Databases and LCA Softwares, Strength and Limitations of LCA.

08 Hours

Module - 4

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Environmental Life Cycle Costing, Social Life Cycle Assessment, and Life Cycle Sustainability Assessment: Introduction, Environmental Life Cycle Costing, Social Life Cycle Assessment, Life Cycle Sustainability, LCA Applications in Engineering: Environmental Product Declarations and Product Category Rules, Carbon and Water Foot Printing, Energy systems, Buildings and the Built Environment, Chemical and Chemical Production Food and Agriculture

Introduction to Environmental Economics: Introduction – What Is Environmental Economics?, Valuing the Environment, Market-based Incentives (or Economic Instruments) for Sustainability

08 Hours

Module – 5

Integrating Sustainability in Engineering Design: Problems Solving in Engineering, conventional to Sustainable Engineering Design Process, Design for Life Guidelines and Strategies, Measuring Sustainability, Sustainable Design through sustainable procurement criteria, Case studies on sustainable Engineering Design Process – Sustainable Process Design, Sustainable Production Design.

08 Hours

COURSE OUTCOMES:

At the end of the course, the student will be able to:

CO1	Elucidate the basics of sustainable development, sustainable engineering and its role in engineering
CO2	Application of Sustainable Engineering Concepts and Principles in Engineering
CO3	Apply the Principle, and methodology of Life Cycle Assessment Tool to engineering systems.
CO4	Outline the concept of integration methods of sustainability to Engineering Design
CO5	Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles

Assessment Details:

CIE:

(Preferred pattern of the all test are similar to the SEE pattern, however; teacher may follow the CIE test pattern of other engineering courses)

Two assignments each of 10 Marks

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50).

A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination (SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation(CIE):

Three Unit Tests each of 20 Marks (duration 01 hour)

First test at the end of 5th week of the semester

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Second test at the end of the 10th week of the semester

Third test at the end of the 15th week of the semester

Two assignments each of 10 Marks

First assignment at the end of 4th week of the semester

Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for 20 Marks (duration 01 hours) t the end of the 13th week of the semester.

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be scaled down to 50 marks

Semester End Examination(SEE):

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (duration 03 hours)

The question paper shall be set for 100 marks. The medium of the question paper shall be English/Kannada). The duration of SEE is 03 hours.

The question paper will have 10 questions. Two questions per module. Each question is set for 20 marks. The students have to answer 5 full questions, selecting one full question from each module. The student has to answer for 100 marks and marks scored out of 100 shall be proportionally reduced to 50 marks.

There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), should have a mix of topics under that module.

Suggested Learning Resources:

SN	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbooks				
1	Introduction to Sustainability for Engineers	Toolseeram Ramjeawon	CRC Press	1stEdn., 2020
2	Sustainability Engineering: Concepts, Design and Case studies,	Prentice Hall		1stEdn, 2015
3	System Analysis for sustainable Engineering: Theory and applications, ,	Ni bin Chang	McGraw Hill Publications	1stEdn., 2010
Reference Books				
1	Engineering for Sustainable development: Delivery a sustainable development goals, ,	UNESCO	International Centre for Engineering Education, France,	1stEdn., 2021
2	Introduction to Sustainable Engineering	Rag. R.L. and Ramesh Lakshmi Dinachandran,	PHI Learning Pvt. Ltd.	2ndEdn, 2016

Web links and Video Lectures (e-Resources):

- VTU/EDUSAT/SWAYAM/NPTEL/MOOC.
- <https://npTEL.ac.in/courses/127105018>
- <https://npTEL.ac.in/courses/107103081/www.macfound.org>
- <https://unesdoc.unesco.org/>
- <https://unesdoc.unesco.org/ark:/48223/pf0000375644.locale=en>
- <https://engineeringforoneplanet.org/>

Semester: I/II

(ETC-I/II) Emerging Technology Courses-I/II

(Mechanical Engineering stream)

Course Name: SMART MATERIALS AND SYSTEM

Course Code	22ETC15a/25a	CIE Marks	50
Teaching Hours/Week (L:T:P:S)	3:0:0:0	SEE Marks	50
Total Hours of Teaching-Learning	40	Total Marks	100
Credits	03	Exam Hours	03

Pre-requisites: Knowledge of Basic mathematics and sciences.

Course objectives:

1. To develop the students ability to learn emerging materials.
2. To make students to learn prefabricated building components
3. To understand the Actuators deployed in smart materials and shape memory alloys
4. To learn building information modeling for building design
5. To learn the concepts of 3-D printing

Teaching-Learning Process These is sampling Strategies; which teachers can use to accelerate the attainment of the various course outcomes.

1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
2. Arrange visits to nearby sites to give brief information about the Civil Engineering structures.
3. Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
4. Encourage collaborative (Group) Learning in the class.
5. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
6. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
7. Topics will be introduced in multiple representations.
8. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
9. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
10. Individual teachers can devise innovative pedagogy to improve teaching-learning.

Module – 1

Emerging Materials Honey comb structure (Carbon composites), Nano-materials, engineered polymers, emerging sustainable by products (Fly ash and GGBS) and construction chemicals.

Alternative Assessment Activities:

1. Demonstration of emerging materials properties.
2. Laboratory demonstration and Experiments on solid materials.

08 Hours

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Module - 2

Prefabricated/ Manufactured building components Definition, types of prefabricated/ manufactured building components and infrastructure, modular coordination, standardization, materials, systems, production, transportation and installation.

Alternative Assessment Activities:

1. *Demonstration of manufactured components*
2. *Video demonstration prefabricated/ manufactured building*

08 Hours

Module – 3

Smart Materials: Definition, Principles of Piezo-electricity, materials (Polymers and Ceramics), sensors (Piezo-electric sensor, strain gauge, shear sensor) smart composites, Overview **Magneto rheological Fluids, Magnetostrictive and shape memory Materials.**

Alternative Assessment Activities:

1. *Demonstration of Piezo-electricity, materials*
2. *Laboratory demonstration and Experiments.*

08 Hours

Module - 4

Actuators, Piezoelectric Ceramic, Functional Gradient

Introduction, Actuators, Piezoelectric Ceramics, Functionally Graded Materials.

Electroceramics: Introduction Electroceramics and Smart Systems Electromechanical Actuators, Actuator Materials

Alternative Assessment Activities:

1. *Demonstration of various smart materials.*
2. *Laboratory Demonstrations and Practical Experiments*

08 Hours

Module – 5

3-D Printing Importance, Historic development, advantages, common terminologies, classification, Process chain, 3 – D modeling, Data conversion and transmission, checking and preparation, Building, Post processing, Applications

Alternative Assessment Activities:

1. *Demonstration of 3D Models.*
2. *Laboratory Demonstrations and Practical Experiments*

08 Hours

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COURSE OUTCOMES:

At the end of the course, the student will be able to:

CO1	Make use emerging materials for construction
CO2	Decide the proper prefabricated building component
CO3	Use smart materials and methods in building construction
CO4	Use smart materials and shape memory alloys in building actuators
CO5	Prepare 3-D modeling and manufacture building component

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination (SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation (CIE):

Two Unit Tests each of 30 Marks (duration 01 hour) First test after the completion of 30-40 % of the syllabus• Second test after completion of 80-90% of the syllabus• One Improvement test before the closing of the academic term may be conducted if necessary. However best two tests out of three shall be taken into consideration

Two assignments each of 20 Marks

The teacher has to plan the assignments and get them completed by the students well before the closing of the term so that marks entry in the examination portal shall be done in time. Formative (Successive) Assessments include Assignments/Quizzes/Seminars/ Course projects/Field surveys/ Case studies/ Hands-on practice (experiments)/Group Discussions/ others. The Teachers shall choose the types of assignments depending on the requirement of the course and plan to attain the Cos and POs. (to have a less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course). CIE methods /test question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

The sum of two tests, two assignments, will be out of 100 marks and will be scaled down to 50 marks

Semester End Examination (SEE):

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (duration 03 hours)

- The question paper shall be set for 100 marks. The medium of the question paper shall be English/Kannada). The duration of SEE is 03 hours.
- The question paper will have 10 questions. Two questions per module. Each question is set for 20 marks. The students have to answer 5 full questions, selecting one full question from each module. The student has to answer for 100 marks and **marks scored out of 100 shall be proportionally reduced to 50 marks.**
- There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), should have a mix of topics under that module.

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Suggested Learning Resources:

Text Books

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Essentials of Materials Science and Engineering,	Donald R. Askeland and Pradeep P. Fulay	Cengage Learning	2009,
2	Smart Materials Volume 1 And Volume 2	I Schwartz, Mel M.	A Wiley-Interscience Publication John Wiley & Sons, Inc. The <i>Encyclopedia of Smart Materials is available Online at</i> www.interscience.wiley.com/reference/esm	ISBN 0-471-17780-6 (cloth : alk.paper)
3	Materials Science and Engineering	Callister Jr, W.D., Rethwisch, D.G.,	Hoboken, NJ: Wiley	10th Ed., 2018

Reference Books

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Engineering Materials 1: An Introduction to Properties, Application and Design	Jones, D.R.H., and Ashby, M.F	Butterworth-Heinemann	4th Ed., 2011
2	Engineering Materials 2: An Introduction to Microstructure and Processing	. Jones, D.R.H., and Ashby, M.F	Butterworth-Heinemann	4th Ed., 2012
3	Physical Metallurgy Principles	Abbaschian, R., Abbaschian, L., Reed-Hill, R. E	Cengage Learning	4th Ed., 2009

Web links and Video Lectures (e-Resources): YouTube Videos.

- Activity Based Learning (Suggested Activities in Class)/ Practical Based learning Site visits to understand the prefabricated building components.
- Visit to Smart material manufacturing facilities
- Visit to 3-D printing facility

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Semester: I/II

Engineering Science Course-I/II

Course Name: **INTRODUCTION TO MECHANICAL ENGINEERING**

Course Code	22ESC144/244	CIE Marks	50
Teaching Hours/Week (L:T:P)	1:0:0	SEE Marks	50
Credits	3	Exam Hours	03
Total Hours of Pedagogy	40	Total Marks	100

Course Learning Objectives

- To develop basic Knowledge on Mechanical Engineering, Fundamentals and Energy Sources.
- Understand the concept of different types of Machine tool operations and Modern Manufacturing Processes like CNC, 3D printing.
- To know the concept of IC engines and Future Mobility vehicles.
- To give exposure in the field of Engineering Materials and Manufacturing Processes Technology and its applications

To acquire a basic understanding role of Mechanical Engineering in the Robotics and Automation in industry.

Teaching-Learning Process

Adopt Problem Based Learning (PBL), which fosters students Analytical skills and develops thinking skills such as evaluating, generalizing, and analyzing information.

- Adopt different types of teaching methods to develop the outcomes through PowerPoint presentations and Video demonstrations or Simulations.
- Arrange visits to show the live working models other than laboratory topics.
- Adopt collaborative (Group Learning) Learning in the class.

Module – 1

Introduction to Emerging Technologies

Introduction: Role of Mechanical Engineering in Industries and Society- Emerging Trends and Technologies in different sectors such as Energy, Manufacturing, Automotive, Aerospace, and Marine sectors.

Energy Sources and Power Plants: Review of energy sources; Construction and working of Hydel power plant, Thermal power plant, Solar power plant by photovoltaic (PV) cell, Wind power plant.

08 Hours

Module - 2

Energy and I C Engine

Introduction to IC Engines: Components and Working Principles, 4-Stroke Petrol and Diesel Engines, Application of IC Engines.

Insight into Future Mobility; Electric and Hybrid Vehicles, Components of Electric and Hybrid Vehicles. Advantages and disadvantages of EVs and Hybrid vehicles

08 Hours

Module – 3

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Machine Tool Operations:

Lathe: Principle of working of a center lathe, lathe operations: Turning, facing, knurling, thread cutting, taper turning by swivelling the compound rest,

Drilling Machine: Working of simple drilling machine, drilling operations: drilling, boring, reaming, tapping, counter sinking, counter boring,

Milling Machine: Working, milling methods(Up milling down milling) operations milling: plane milling, end milling and slot milling.

Introduction to Advanced Manufacturing Systems: Introduction, components of CNC, advantages and applications of CNC,

08 Hours

Module - 4

Engineering Materials: Types and applications of Ferrous & Nonferrous Metals, silica, ceramics, graphite, and polymer. Shape Memory Alloys.

Joining Processes: Soldering, Brazing and Welding, Definitions, classification of welding process, Arc welding, Gas welding and types of flames.

08 Hours

Module – 5

Introduction to Mechatronics and Robotics: open-loop and closed-loop mechatronic systems. Classification based on robotics configuration: polar cylindrical, Cartesian coordinate and spherical. Application, Advantages and disadvantages.

Automation in industry: Definition, types – Fixed, programmable and flexible automation , advantages and disadvantages.

Evolution of technologies; Introduction to Industrial revolution, Fourth industrial revolution (IR 4.0) Industrial IOT definition, merit, demerit and application.

08 Hours

COURSE OUTCOMES:

At the end of the course, the student will be able to:

CO1	Explain the concepts of Role of Mechanical Engineering and Evolution of technologies
CO2	Explain the Working Principle of Energy sources and IC engines
CO3	Describe the Machine Tool Operations and advanced Manufacturing process. and various Metal Joining Processes
CO4	Describe the advanced Manufacturing process and EV vehicles.
CO5	Explain the Concepts of evolution technologies automation and Robotics

Assessment Details

CIE:

	Components	Number	Weightage	Max. Marks
(i)	Tests (A)	3*	60%	30
(ii)	Alternate Assessment Tools(AAT) (B)	3-4	40%	20
	Total Marks			50

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Final CIE Marks = (A) + (B)

The following are the Alternate Assessment Tools and not limited to: Quiz, Assignments, Presentations, Paper Publications, MOOCs, Industrial Visits and Report Writing, Open Book, Self E-Learning with Certifications and other cooperative and problem based learning.

(Preferred pattern of the all test are similar to the SEE pattern, however; teacher may follow the CIE test pattern of other engineering courses)

Two assignments each of 10 Marks

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50).

A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination (SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation(CIE):

Three Unit Tests each of 20 Marks (duration 01 hour)

- First test at the end of 5th week of the semester
- Second test at the end of the 10th week of the semester
- Third test at the end of the 15th week of the semester

Two assignments each of 10 Marks

- First assignment at the end of 4th week of the semester
- Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for 20 Marks (duration 01 hours) t the end of the 13th week of the semester.

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be scaled down to 50 marks

Semester End Examination(SEE):

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (duration 03 hours)

- The question paper shall be set for 100 marks. The medium of the question paper shall be English/Kannada). The duration of SEE is 03 hours.

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□ The question paper will have 10 questions. Two questions per module. Each question is set for 20 marks. The students have to answer 5 full questions, selecting one full question from each module. The student has to answer for 100 marks and marks scored out of 100 shall be proportionally reduced to 50 marks.

□ **There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), should have a mix of topics under that module.**

Suggested Learning Resources :

SN	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbooks				
1	Engineering Design	John.R.Karsnitz, Stephen O'Brien and John P. Hutchinson	Cengagelearning	Second Edition, 2013
2	The Design of Business	Roger Martin	Harvard Business Press	2009
3	Design Thinking: Understand – Improve – Apply	Hasso Plattner, Christoph Meinel and Larry Leifer	Springer	2011.
Reference Books				
1	Design Thinking for Strategic Innovation	Idris Mootee	John Wiley & Sons	Second Edition, 2011.
2	Engineering Design Process	Yousef Haik and Tamer M.Shahin	CengageLearning	1st edition, 2012

E-Resources:

- www.tutor2u.net/business/presentations/. /product lifecycle/default.html
- https://docs.oracle.com/cd/E11108_02/otn/pdf/. /E11087_01.pdf
- www.bizfilings.com > Home > Marketing > Product Development
- <https://www.mindtools.com/brainstm.html>
- <https://www.quicksprout.com/. /how-to-reverse-engineer-your-competitor>
- www.vertabelo.com/blog/documentation/reversengineering
- <https://support.microsoft.com/en-us/kb/273814>
- <https://support.google.com/docs/answer/179740?hl=en>
- <https://www.youtube.com/watch?v=2mjSDiBaUIM> thevirtualinstructor.com/foreshortening.html
- <https://dschool.stanford.edu/.../designresources/.../ModeGuideBOOTCAMP2010L.pdf>
- <https://dschool.stanford.edu/use-our-methods/>
- <https://www.interaction-design.org/literature/article/stages-in-the-design->

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thinking-process

13. <http://www.creativityatwork.com/design-thinking-strategy-for-innovation/> 49 8.

14. <https://www.nngroup.com/articles/design-thinking/>

15. <https://designthinkingforeducators.com/design-thinking/>

16. www.designthinkingformobility.org/wp-content/.../10/NapkinPitch_Worksheet.pdf

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

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Semester: I**Engineering science course**Course Name: **ELEMENTS OF MECHANICAL ENGINEERING**

Course Code	22EME13/23	CIE Marks	50
Teaching Hours/Week (L: T:P)	1:0:0	SEE Marks	50
Credits	3	Exam Hours	03
Total Hours of Pedagogy	40	Total Marks	100

Course Learning Objectives

- To develop basic Knowledge on Mechanical Engineering, Fundamentals and Energy Sources.
- Understand the concept of different types of Machine tool operations and Modern Manufacturing Processes like CNC, 3D printing.
- To know the concept of IC engines and Future Mobility vehicles.
- To give exposure in the field of Engineering Materials and Manufacturing Processes Technology and its applications

To acquire a basic understanding role of Mechanical Engineering in the Robotics and Automation in industry.

Teaching-Learning Process

Teaching-Learning Process

Adopt Problem Based Learning (PBL), which fosters students' Analytical skills and develops thinking skills such as evaluating, generalizing, and analyzing information.

- Adopt different types of teaching methods to develop the outcomes through PowerPoint presentations and Video demonstrations or Simulations.
- Arrange visits to show the live working models other than laboratory topics.
- Adopt collaborative (Group Learning) Learning in the class.

Module – 1**Introduction to Mechanical Engineering (Overview only):**

Role of Mechanical Engineering in Industries and Society- Emerging Trends and Technologies in different sectors such as Energy, Manufacturing, Automotive, Aerospace, and Marine sectors.

Steam Formation and Application:

Modes of heat transfer, Steam formation, Types of steam, Steam properties and applications of steam (simple numerical problems).

Energy Sources and Power Plants:

Basic working principles of Hydel power plant, Thermal power plant, nuclear power plant, Solar power plant, Tidal power plant and Wind power plant.

08 Hours

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Module - 2

Machine Tool Operations:

Lathe: Principle of working of a center lathe, lathe operations: Turning, facing, knurling, thread cutting, taper turning by swiveling the compound rest,

Drilling Machine: Working of simple drilling machine, drilling operations: drilling, boring, reaming, tapping, counter sinking, counter boring,

Milling Machine: Working methods of milling (up milling and Down milling), milling operations: plane milling, end milling and slot milling.

(No sketches of machine tools, sketches to be used only for explaining the operations).

Introduction to Advanced Manufacturing Systems: Introduction, components of CNC, advantages and applications of CNC, 3D printing.

08 Hours

Module - 3

Introduction to IC Engines: Components and working principles, 4-Stroke Petrol and Diesel engines, Application of IC Engines, performance of IC engines (Simple numerical).

Introduction to Refrigeration and Air Conditioning: Principle of refrigeration, Refrigerants, and their desirable properties. Working principle of VCR and VAR refrigeration system, working principle of room air conditioner & Applications of air Conditioners.

08 Hours

Module - 4

Mechanical Power Transmission:

Gear Drives: Types - spur, helical, bevel, worm and rack and pinion, velocity ratio, simple and compound gear trains (simple numerical problems)

Belt Drives: Introduction, Types of belt drives (Flat and V-Belt Drive)

Joining Processes: Soldering, Brazing and Welding, Definitions, classification of welding process, Arc welding, Gas welding, (types of flames), TIG welding, MIG welding, Thermit welding, Laser beam welding and Electron beam welding processes

08 Hours

Module - 5

Insight into future mobility technology; Electric and Hybrid Vehicles, Components of Electric and Hybrid Vehicles. Advantages and disadvantages of Electric Vehicles (EVs) and Hybrid vehicles.

Introduction to Mechatronics and Robotics: open-loop and closed-loop mechatronic systems. Robot anatomy, Applications of Robots in material handling, processing and assembly and inspection.

08 Hours

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COURSE OUTCOMES:

At the end of the course, the student will be able to:

CO1	Acquire a basic understanding about scope of mechanical engineering, fundamentals about steam and nonconventional energy sources.
CO2	Acquire a basic knowledge about conventional and advanced manufacturing processes.
CO3	Acquiring a basic understanding about IC engines, propulsive devices, and air-conditioner
CO4	Acquiring a basic knowledge about power transmission and joining processes.
CO5	Acquiring a basic insight into future mobility and mechatronics and robotics.

Assessment Details:

CIE:

	Components	Number	Weightage	Max. Marks
(i)	Tests (A)	3*	60%	30
(ii)	Alternate Assessment Tools (AAT) (B)	3-4	40%	20
	Total Marks			50

Final CIE Marks = (A) + (B)

The following are the Alternate Assessment Tools and not limited to: Quiz, Assignments, Presentations, Paper Publications, MOOCs, Industrial Visits and Report Writing, Open Book, Self E-Learning with Certifications, and other cooperative and problem-based learning.

(Preferred pattern of all tests are like the SEE pattern, however; teacher may follow the CIE test pattern of other engineering courses)
Two assignments each of 10 Marks

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50).

A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination (SEE), and a minimum of 40% (40 marks out of 100) in the sum of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation (CIE):

Three Unit Tests each of 20 Marks (duration 01 hour)

- First test at the end of 5th week of the semester
- Second test at the end of the 10th week of the semester
- Third test at the end of the 15th week of the semester

Two assignments each of 10 Marks

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E-Resources:

17. www.tutor2u.net/business/presentations/. /Product lifecycle/default.html
18. https://docs.oracle.com/cd/E11108_02/otn/pdf/. /E11087_01.pdf
19. www.bizfilings.com > Home > Marketing > Product Development
20. <http://www.mindtools.com/brainstm.html>
21. <https://www.quicksprout.com/. /How-to-reverse-engineer-your-competitor>
22. www.vertabelo.com/blog/documentation/reversengineering
23. <https://support.microsoft.com/en-us/kb/273814>
24. <https://support.google.com/docs/answer/179740?hl=en>
25. <https://www.youtube.com/watch?v=2mjSDlBaUIM>
thevirtualinstructor.com/foreshortening.html
26. <https://dschool.stanford.edu/.../designresources/.../ModeGuideBOOTCAMP2010L.pdf>
27. <https://dschool.stanford.edu/use-our-methods/>
28. <https://www.interaction-design.org/literature/article/stages-in-the-design-thinking-process>
29. <http://www.creativityatwork.com/design-thinking-strategy-for-innovation/> 49 8.
30. <https://www.nngroup.com/articles/design-thinking/>
31. <https://designthinkingforeducators.com/design-thinking/>
32. www.designthinkingformobility.org/wp-content/.../10/NapkinPitch_Worksheet.pdf

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Ballari Institute of Technology and Management, Ballari

Department of Mechanical Engineering

Circular

Date: 03.08.2024

In the view of Department 5th Board of Studies meeting, all the concerned faculty are here by informed to attend the meeting on 06.08.2023 at 10.30 am, HOD chamber.


HOD

Agenda:

1. To finalize the 21 Scheme and Syllabus of the VII and VIII semesters for the academic year 2024-25.
2. To finalize the 22 Scheme and Syllabus of the V and VI semesters for the academic year 2024-25.

Sl. No	Name of the Faculty	Signature
1	Dr. Yadavalli Basavaraj	
2	Dr. Raghavendra Joshi	
3	Dr. V. Venkata Ramana	
4	Dr. B. Ganesh	Ganesh
5	Dr. T. Lakshmi Kumari	LK
6	Dr. HM Anil Kumar	
7	Dr. Banakar Nagaraj	
8	Dr. Manjunatha. T.H	TH
9	Dr. Pavan Kumar B.K	PBK
10	Dr. Shivaramakrishna. A	
11	Dr. Shekar. K	SK
12	Mr. B. Jaya Prakash	JP
13	Mr. Vishnu Prasad	VP
14	Mr. V. Srinivasulu	
15	Mr. K. Raghavendra	KR
16	Mr. Mohammed Fayaz	
17	Mr. Mayur Pawar	MP
18	Mr. Vijay Kumar. B.P	VKB
19	Mr. Shiva Kumar. S.Y	SKS
20	Mr. Manjunath. E	ME
21	Dr. Santhosh Janamatti	SJ
22	Mr. Gavisiddappa. P	GS
23	Mr. Rajashekar. K	RK
24	Mr. Maharaja Gowda	MG
25	Mr. Raghavendra Karnool	RK
26	Mr. Raghavendra Shetty	RS
27	Mr. A. Taranath	AT
28	Mr. Kalyan Babu	KB
29	Mr. Venkatesh K.C	VK
30	Mr. Irayya Shikkerimath	IS

Dean Academics : *[Signature]*

NEW BOARD OF STUDIES: MECHANICAL DEPARTMENT

DEPT. OF MECHANICAL ENGINEERING.

6.8.24.

S. No.	Category	Nomination of the Committee	Name of the person
1	Head of the Dept.	Chairperson	Dr. V. VENKATA RAMANA Professor & HOD – Mechanical Engg.
2	Faculty Members at different levels veering different specializations	Members	
3	Subject Experts from outside the College nominated by Academic Council	1 9448286076	Mr. SUNIL KATARIA Executive Vice President, JSW Steels Ltd., Toranagallu (Karnataka) Email: sunil.kataria@jsw.in Phone: 9448286076
		2 9480694934	Dr. RAMESHWAR SAH, Associate Vice President, R & D Department JSW Steels Ltd., Toranagallu Email ID: rameshwar.sah@jsw.in Phone: 9480694934
4	Expert from outside college, nominated by Vice-Chancellor <i>Virtual ✓</i>	Member 9449735400 8660223641	Dr. JAYANT KITTUR, Principal, KLS Gogte Institute of Technology – Belagavi Phone: 9449735400 Email ID: jkk@git.edu
5	Representative from industry / corporate sector / allied area relating to placement nominated by Academic Council <i>Virtual ✓</i>	Member 9632411799	Ganapathy Bhatta A.S. Triveni Turbine Limited 12-A Peenya Industrial Area, Bangalore 560058, Karnataka, India Mob: +91 9632411799 Tel: 080 -22164000, Extn: 4062 Fax: 080-22164100 Website: www.triveniturbines.com
6	Postgraduate meritorious alumnus nominated by Principal Member	Member 9742529824	Mr. SUBODH KUMAR, Asst. Manager, JSW Steels Ltd. – Toranagallu Email: subodh066@gmail.com
7	Co-opted members <i>Virtual ✓</i> <i>Virtual ✓</i>	7338888702 9739367996	Mr. Vijeesh Kumar A vijeshkumar.a@harita.co.in Harita TechServ Ltd., Bangalore, 9739367996
		9900502818	Jaya Prakash A J Delivery Manager, Aerospace Vertical Tata Consultancy Services Cell:- +91 9900502818 Mailto: jayaprakash.aj@tcs.com Website: http://www.tcs.com

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF MECHANICAL ENGINEERING

Date: 06/08/2024

PROCEEDINGS OF 5th BOARD OF STUDY MEETING HELD ON 06th AUGUST, 2024

Venue: HOD Chamber, Ground Floor, C.V.RAMAN Block

Time: 10:30 AM

Mode: Hybrid

Platform: Teams

Agenda:

At the outset, the Chairman welcomed all the Honorable members for the 4th meeting of Board of Studies (UG) for discussing and finalizing the Scheme and Syllabus for B.E. 3rd year 21 scheme and 2nd year 22 scheme of Mechanical Engineering.

1. To Consider and approve the scheme and syllabus of “V Semester” for 3rd Year UG Course for the Academic Year 2024-25 under 22 Scheme.
2. To Consider and approve the scheme and syllabus of “VI Semester” for 3rd Year UG Course for the Academic Year 2024-25 under 22 Scheme.
3. To Consider and approve the scheme and syllabus of “VII Semester” for 4th Year UG Course for the Academic Year 2024-25 under 21 Scheme..
4. To Consider and approve the scheme and syllabus of “VIII Semester” for 4th Year UG Course for the Academic Year 2024-25 under 21 Scheme..
5. Any other matter with the permission of the chair
6. Vote of thanks.

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF MECHANICAL ENGINEERING

Suggestions:

1. To Consider and approve the scheme and syllabus of “5th Semester” for 3rd Year UG Course for the Academic Year 2024-25 under 22 Scheme.

The suggestions given by the BOS panel are listed below,

Course Name	FLUID POWER ENGINEERING
Suggestions	1. Interchange of Modules 4,5 to Modules 2,3
Course Name	COMPOSITE MATERIALS
Suggestions	1. To use ASM Hand Book
Course Name	SUPPLY CHAIN MANAGEMENT
Suggestions	1. To incorporate critical path method.

2. To Consider and approve the scheme and syllabus of “6th Semester” for 3rd Year UG Course for the Academic Year 2024-25 under 22 Scheme..

--NIL--

3. To Consider and approve the scheme and syllabus of “7th Semester” for 4th Year UG Course for the Academic Year 2024-25 under 21 Scheme.

Course Name	COMPUTER INTEGRATED MANUFACTURING LABORATORY
Suggestions	1. Post processing of CNC programs for standard CNC control systems using FANUC only
Course Name	Tribology
Suggestions	1. To cite different examples and case studies
Course Name	Automatic Control Systems
Suggestions	1. To modify the chapter title for Polar plots as “Stability analysis using Polar and Nyquist plots”
Course Name	Production Planning and Control
Suggestions	1. To include topic on Sub Contracting Principles or Vendor Management. 2. To modify the chapter tile in module 2 from method study to Time and Method Study

4. To Consider and approve the scheme and syllabus of “8th Semester” for 4th Year UG Course for the Academic 2024-25 under 21 Scheme.

--NIL--

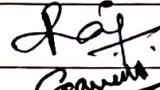
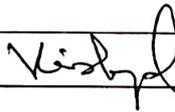
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DEPARTMENT OF MECHANICAL ENGINEERING

General Suggestions:

1. Articulation matrix for every subject should be added in the syllabus.
2. Check for typographical errors and alignment
3. Create opportunity for students for Self-Learning through text books
4. Activity based learning in theory and laboratory subjects.
5. Industry personal / Alumni to deliver talk on the management, finance and supply chain management subjects

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
DEPARTMENT OF MECHANICAL ENGINEERING

List of External and Internal Members of the BOS:

S. No.	Name of the Member	Designation	Signature
1	Dr. V. Venkata Ramana	Chairman	
2	Dr. Yadavalli Basavaraj	Member	
3	Dr. Raghavendra Joshi	Member	
4	Dr. B. Ganesh	Member	
5	Dr. HM Anil Kumar	Member	AB
6	Mr. K. Raghavendra	Special Invitee	
7	Mr. Sunil Kataria	External Member	online
8	Dr. Jayant Kittur	External Member	online
9	Mr. Ganapathy Bhatta	External Member	online
10	Mr. Subodh Kumar	External Member	AB
11	Mr. Vijeesh Kumar	External Member	online
12	Dr. Rameshwar Sah	External Member	online
13	Department Faculty	Member	
14	Mr. B. Vishnu Prasad	Special Invitee	

Date: 06-08-2024

Place: Ballari