

Rayat Shikshan Sanstha's
**Karmaveer Bhaurao Patil,
College of Engineering,
Satara.**

**An Autonomous Institute & Affiliated to DBATU Lonere
Accredited by NAAC with "B++" Grade**



Second Year to Final Year B. Tech
Computer Science & Engineering

Structure & Curriculum

(w.e.f. A.Y. 2026-27)

As Per NEP 2020

NCrF Level 6

**Recommended in BOS (CSE) Meeting Dated: 15th June 2026
&
Approved in Academic Council Meeting Dated: 20th July 2026**


Dr. G. D. Dangat
BOS Chairman (CSE)


Dr. S. J. Modi
**Member Secretary
Academic Council**


Dr. A. C. Attar
Principal





Rayat Shikshan Sanstha's

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Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere – from 2017

Rayat Shikshan Sanstha's

KARMAVEER BHAURAO PATIL COLLEGE OF ENGINEERING, SATARA

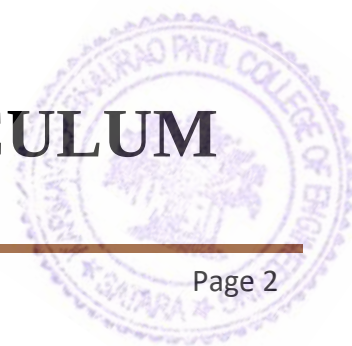
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Technological University, Lonere

Accredited by NAAC & NBA



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

STRUCTURE AND CURRICULUM





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(w.e.f. Academic Year 2026 - 2027)

As per NEP 2020

Key Features of Curriculum

Multiple entry and exit option after every year.

1. Provision for Open Electives (OE), Vocational and Skill Enhancement Courses (VSE), Ability Enhancement Courses (AE), Indian Knowledge System (IKS), Value Education Courses (VE), Co-Curricular Courses (CC) in addition to program core courses.
2. Mandatory internship of one semester.
3. Credits for Value education courses, Ability Enhancement Courses, Co-Curricular Curricular activities.
4. Mandatory Non-Credit Courses.
5. Interdisciplinary and multidisciplinary education through single and double minors and open electives.
6. Skill based courses and multiple exit level.
7. Provision for learning in online mode through Swayam / NPTEL etc courses
8. Provision for B.Tech. Honours with Research degree through research project.
9. Opportunity for learner to choose courses of their interest in all disciplines.
10. Provision of Skill Based Courses and internship/Field project/mini projects for exit options at each level.
11. Flexibility for all types of learners

Degree	Total Credits
Four year Bachelor of Technology (B.E./B.Tech. or Equivalent) in Engineering/Technology with Multidisciplinary Minor	Proposed Total Credits: 172
AND	
Four Year Bachelor's Degree (B.E./B.Tech. or Equivalent) in Engineering/Technology – Honors and Multidisciplinary Minor	18–20 additional credits over and above the credit requirement of the regular B.Tech. Degree. Total 192-194 Credits
OR	
Four Year Bachelor's Degree (B.E./B.Tech. or Equivalent) in Engineering/Technology – Honors with Research and Multidisciplinary Minor	
OR	



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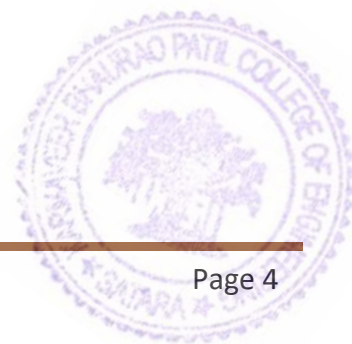
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Four Year Bachelor's Degree (B.E./B.Tech. or Equivalent) in Engineering/Technology – Major Engineering Discipline with Double Minors (Multidisciplinary Minor and Specialization Minor)

Credit Distribution for each year and Exit Option

NCrF Level	Year/ Sem	Exit Option	Minimum Credit Requirements	Maximum Credit Requirements	CSE Credits	Additional Credits for exit students	Total Credits
4.5	I & II	U. G. Certificate	40	44	42	8	50
5	III & IV	U. G. Diploma	80	88	86	8	94
5.5	V & VI	B. Vocational / B.Sc.	120	132	130	8	138
6	VII & VIII	B. Tech. Major with Multidisciplinary Minor	160	176	172	-	172
6	VII & VIII	B.Tech. Honors and Multidisciplinary Minor	180	194	172	18	190
		B.Tech. Honors with Research and Multidisciplinary Minor	180	194	172	18	190
		B.Tech. with Double Minor (Multidisciplinary and Specialization Minor)	180	194	172	18	190





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Curriculum Framework

List of Abbreviations

Sr. No.	Abbreviation	Type of Course
1	BSC	Basic Science Course
2	ESC	Engineering Science Course
3	PCC	Programme Core Course
4	PEC	Programme Elective Course
5	MDM	Multidisciplinary Minor
6	OE	Open Elective
7	VSEC	Vocational and Skill Enhancement Course
8	AEC	Ability Enhancement Course
9	EEMC	Entrepreneurship/Economics/Management Course
10	IKS	Indian Knowledge System
11	VEC	Value Education Course
12	CC	Co-Curricular Courses
13	RM	Research Methodology
14	CEP/FP	Community Engineering. Project/Field Project
15	PR	Project
16	IT/OJT	Internship/On job training



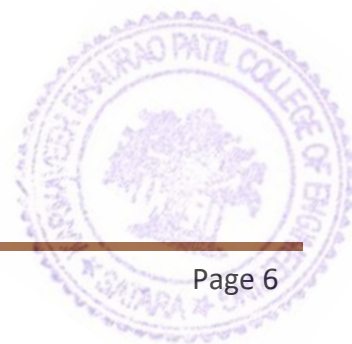
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Semester-Wise Credit Distribution

Course Category	As per NEP GR	Credits	Course Category	As per NEP GR	Credits
BSC/ESC	30	30	BSC	14-18	14
			ESC	16-12	15
Program Courses	64-76	74	PCC	44-56	54
			PEC	20	20
Multidisciplinary Courses	22	22	MDM	14	14
			OE	8	8
Skill Courses	8	8	VSEC	8	8
Humanities, Social Science & Management (HSSM)	14	14	AEC	4	4
			EEMC	4	4
			IKS	2	2
			VEC	4	4
Experiential Courses	22	22	RM	4	4
			EL	2	2
			PR	4	4
			IN/OJT	12	12
Liberal Learning Courses	4	2	CC	4	2
Total Credits	160-176	172		160-176	172





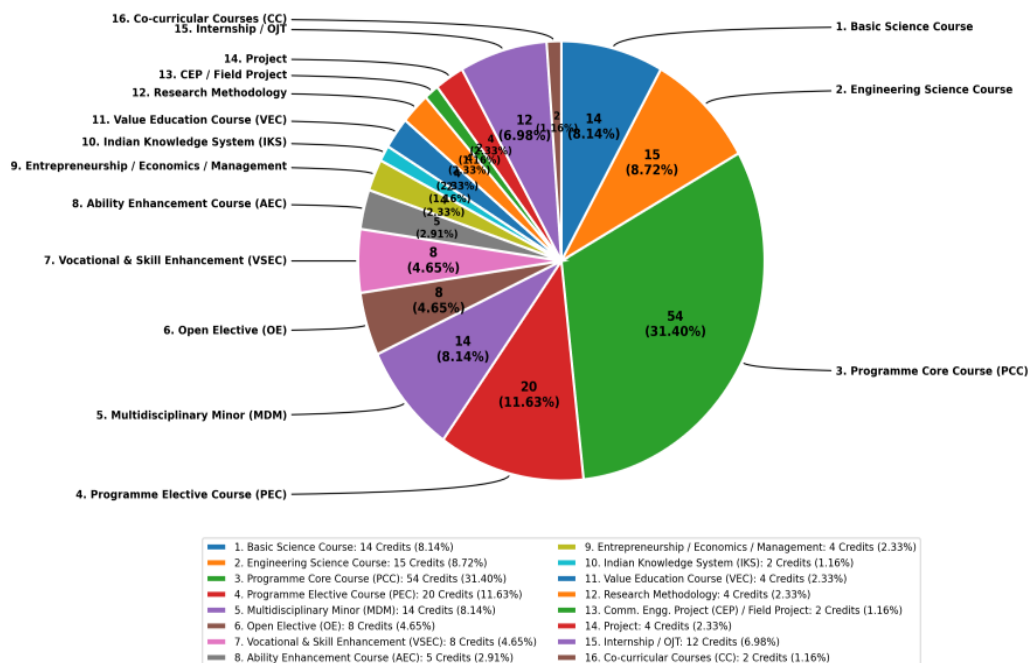
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Credit Distribution Chart

Curriculum Credit Distribution (All Semesters)
Total Credits = 172



Total Credits = 172 (100%)



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Semester-Wise Credit Distribution

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
BSC/ESC	Basic Science Course	7	7							14
	Engineering Science Course	8	7							15
Program Courses	Programme Core Course (PCC)		2	10	10	12	10	6	4	54
	Programme Elective Course (PEC)					4	8	6	2	20
Multidisciplinary Courses	Multidisciplinary Minor (MDM)			2	3	3	2	4		14
	Open Elective (OE) Other than a particular program			3	2	3				8
Skill Courses	Vocational and Skill Enhancement Course (VSEC)	2	2		2		2			8
Humanities Social Science and Management (HSSM)	Ability Enhancement Course (AEC -01, AEC-02)	3			2					4
	Entrepreneurship / Economics/ Management Courses			2	2					4
	Indian Knowledge System (IKS)		2							2
	Value Education Course (VEC)			2	2					4
Experiential Learning Courses	Research Methodology							4		4
	Comm. Engg. Project (CEP)/Field Project (FP)			2						2
	Project							4		4
	Internship/ OJT								12	12
Liberal Learning Courses	Co-curricular Courses (CC)	1	1							2
Total Credits (Major)		21	21	21	23	22	22	24	18	172





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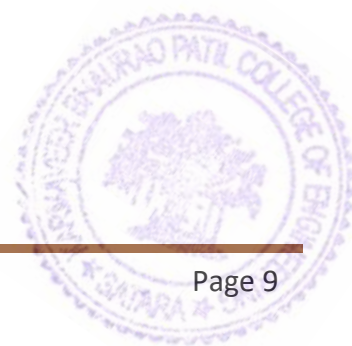
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Semester-wise Basket Themes for Emerging Technology Specialization

Bucket	Course	Course Code	Suggested Theme Name
Bucket	Indian Knowledge System (IKS)	26BSHA209A / 26BSHB109A	1. Indian Knowledge System In Architecture And Town Planning
		26BSHA209B / 26BSHB109B	2. Indian Ethics
		26BSHA209C / 26BSHB109C	3. Indian Astronomy





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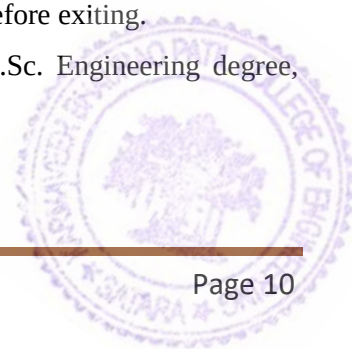
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General Instructions

- In the eighth semester, students must complete a mandatory internship for one semester at a company or organization approved by the BOS Chairman.
- During the eighth-semester internship, students must complete theory courses through one of the two modes:
- Online mode, where courses are offered through SWAYAM/NPTEL or an equivalent platform, providing an evaluation mechanism approved by the BOS Chairman. In this case:
- Students can register and complete these online courses any time after the beginning of the third semester.
- The course must be completed and the scorecard/certificate submitted before the declaration of the eighth-semester result.
- If a student fails an online course, they must register for the same course offered by the institute and appear for ESE examination of 100 marks only personally as per the schedule declared by the institute to successfully complete the course.
- Self-study mode, where students study independently using the course offered by the institute.
- Students must appear for all college assessments/examinations (ISE, MSE, ESE) personally as per the institute's schedule and successfully complete the course.
- In addition to program-specific courses, students must complete vocational skill courses, internships, and field projects connected to their major degree.

Exit Options:

- The exit option is available at the end of even semesters (2nd, 4th, and 6th semesters), commencing from the academic year 2027-28 for the UG Certificate.
- Students opting for exit at any level (odd or even semesters) must earn an additional eight credits in skill-based vocational courses, internships, apprenticeships, or mini-projects before exiting.
- This makes them eligible for a UG Certificate, UG Diploma, or B.Voc./B.Sc. Engineering degree, depending on their qualification level.





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Re-entry and Lateral Entry:

- Students opting for exit after an even semester may re-enter within four years and resume from the next odd semester they left off.
- There must be a gap of at least one year between exit and re-entry.
- Students opting for exit after an odd semester (1st, 3rd, 5th, or 7th) may only re-enter the program during the next even semester.
- There must be a gap of at least one year between exit and re-entry.

Maximum Duration for Degree Completion:

- The B.Tech degree must be completed within eight years from the date of admission to the first-year undergraduate program.
- The duration includes exit, withdrawal, absence, or permissible leaves but excludes rustication periods.
- If exceptional cases arise, valid reasons may be presented to the Academic Council, which may approve an extension of one additional year.
- Eligibility for Admission to UG Bachelor's Degree with Honors, Research, or Double Minor:
- Students must have a minimum CGPA of 7.5 with no backlogs at the end of the second semester and must have earned 18 credits.

Multiple Exit Qualification Titles & Requirements:

- Exit-1 (NCrF Level 4.5) – One-Year UG Certificate in Engineering/Technology (Requires 8 additional credits by 2-Month internship /Technical Project/Industrial Training or equivalent skill courses).
- Exit-2 (NCrF Level 5.0) – Two-Year UG Diploma in Engineering/Technology (Requires 8 additional credits by 2-Month internship /Technical Project/Industrial Training or equivalent skill courses).
- Exit-3 (NCrF Level 5.5) – Three-Year B.Voc/B.Sc. Engineering Degree (Requires 8 additional credits by 2-Month internship /Technical Project/Industrial Training or equivalent skill courses).



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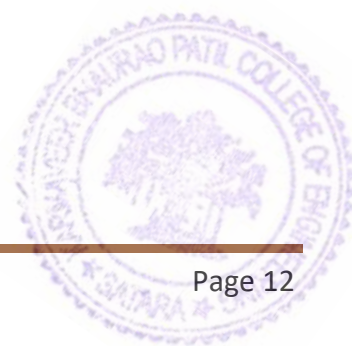
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Multiple Exit Options

Option	NCrF Level	Qualification Title	Additional Credit Requirement	Bridge Courses
Exit-1	4.5	One-Year UG Certificate Course in Engineering / Technology	8	2 Months Internship / Technical Project/Industrial Training OR Online Two Skill Courses from NSQF/ESSC/Any Other Agency certification approved by BoS
Exit-2	5.0	Two-Year UG Diploma in Engineering/Technology	8	2 Months Internship / Technical Project/Industrial Training OR Online Two Skill Courses at Diploma Level from NSQF/ESSC/Any Other Agency certification approved by BoS
Exit-3	5.5	Three-Year Bachelor Degree in Vocation (B.Voc.) or B.Sc. (Engineering/Technology)	8	2 Months Internship / Technical Project/Industrial Training OR Online Two Skill Courses at Degree Level from NSQF/ESSC/Any Other Agency certification approved by BoS





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Curriculum Structure

of

**First Year B.Tech. In Computer Science &
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Effective from

Academic Year 2026-27





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First Year B.Tech. in Computer Science & Engineering
(W.E.F. 2026-27)
Group A

SEMESTER -I												
Sr. No .	Course Category	Course Code	Course Title	Teaching Scheme				Cr	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	BSC	26BSH101	Engineering Mathematics- I	3	-	-	1	3	10	30	60	100
2	BSC	26BSHA102	Engineering Chemistry	3	-	-	1	3	10	30	60	100
3	ESC	26BSHA103	Engineering Mechanics	3	-	-	1	3	10	30	60	100
4	ESC	26BSHA104	Basic Mechanical Engineering	2	-	-	1	2	10	30	60	100
5	AEC-01	26BSHA105	Communication Skills	2	-	-	1	2	10	30	60	100
6	BSC	26BSHA106	Engineering Chemistry Lab	-	-	2	-	1	60	-	40	100
7	ESC	26BSHA107	Engineering Mechanics Lab	-	-	2	-	1	60	-	40	100
8	ESC	26BSHA108	Python Programming Lab	-	-	4	-	2	60	-	40	100
9	VSEC	26BSHA109	Workshop Practices-I	-	-	4	-	2	60	-	40	100
10	AEC-01	26BSHA110	Communication Skills Lab	-	-	2	-	1	60	-	40	100
11	CC	26BSHA111A	A] Sports &Physical Education	-	-	2	-	1	60	-	40	100
		26BSHA111B	B] Music & Dance									
		26BSHA111C	C]Yoga Education									
	Total			13	-	16	5	21	410	150	540	1100
	Total Contact Hrs=29						CUMULATIVE CREDITS: 21					

ISE – In Semester Evaluation, ESE – End Semester Examination, MSE – Mid Semester Examination, L- Lecture, T-Tutorial, P-Practical, S-Self Study



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Group A

SEMESTER -II												
Sr. No	Course Category	Course Code	Course Title	Teaching Scheme				Cr	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	BSC	26BSH201	Engineering Mathematics – II	3	-	-	1	3	10	30	60	100
2	BSC	26BSHA202	Engineering Physics	3	-	-	1	3	10	30	60	100
3	ESC	26BSHA203	Engineering Graphics	3	-	-	1	3	10	30	60	100
4	ESC	26BSHA204	Basic Civil Engineering	2	-	-	1	2	10	30	60	100
5	BSC	26BSHA205	Engineering Physics Lab	-	-	2	-	1	60	-	40	100
6	ESC	26BSHA206	Engineering Graphics Lab	-	-	4	-	2	60	-	40	100
7	PCC	26BSHA207	Basics in AI-I-RA Lab	-	-	4	-	2	60	-	40	100
8	VSEC	26BSHA208	Design Thinking	-	-	4	-	2	60	-	40	100
9	IKS	26BSHA209	IKS Bucket #	2	-	-	-	2	60	-	40	100
10	CC	26BSHA210A	A)Integrated Personality Development	-	-	2	-	1	60	-	40	100
		26BSHA210B	B)Health and Wellness									
		26BSHA210C	C)Social Outreach Activities									
	Total			13	-	16	4	21	400	120	480	1000
	Total Contact Hrs=29 CUMULATIVE CREDITS: 21+21=42											

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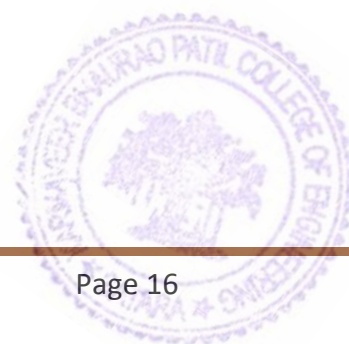
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First Year B.Tech. in Computer Science & Engineering
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Group B

SEMESTER -I												
Sr No	Course Category	Course Code	Course Title	Teaching Scheme				Cr	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	BSC	26BSH101	Engineering Mathematics – I	3	-	-	1	3	10	30	60	100
2	BSC	26BSHB102	Engineering Physics	3	-	-	1	3	10	30	60	100
3	ESC	26BSHB103	Engineering Graphics	3	-	-	1	3	10	30	60	100
4	ESC	26BSHB104	Basic Civil Engineering	2	-	-	1	2	10	30	60	100
5	BSC	26BSHB105	Engineering Physics Lab	-	-	2	-	1	60	-	40	100
6	ESC	26BSHB106	Engineering Graphics Lab	-	-	4	-	2	60	-	40	100
7	PCC	26BSHB107	Basics in AI-I-RA Lab	-	-	4	-	2	60	-	40	100
8	VSEC	26BSHB108	Design Thinking	-	-	4	-	2	60	-	40	100
9	IKS	26BSHB109	IKS Bucket #	2	-	-	-	2	60	-	40	100
10	CC	26BSHB110A	A)Integrated Personality Development	-	-	2	-	1	60	-	40	100
		26BSHB110B	B)Health and Wellness									
		26BSHB111C	C)Social Outreach Activities									
	Total			13	-	16	4	21	400	120	480	1000
	Total Contact Hrs=29							CUMULATIVE CREDITS: 21				

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Group B

SEMESTER –II												
Sr. No	Course Category	Course Code	Course Title	Teaching Scheme				Cr	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	BSC	26BSH201	Engineering Mathematics – II	3	-	-	1	3	10	30	60	100
2	BSC	26BSHB202	Engineering Chemistry	3	-	-	1	3	10	30	60	100
3	ESC	26BSHB203	Engineering Mechanics	3	-	-	1	3	10	30	60	100
4	ESC	26BSHB204	Basic Mechanical Engineering	2	-	-	1	2	10	30	60	100
5	AEC-01	26BSHB205	Communication Skills	2	-	-	1	2	10	30	60	100
6	BSC	26BSHB206	Engineering Chemistry Lab	-	-	2	-	1	60	-	40	100
7	ESC	26BSHB207	Engineering Mechanics Lab	-	-	2	-	1	60	-	40	100
8	ESC	26BSHB208	Python Programming Lab	-	-	4	-	2	60	-	40	100
9	VSEC	26BSHB209	Workshop Practices-I	-	-	4	-	2	60	-	40	100
10	AEC-01	26BSHB210	Communication Skills Lab	-	-	2	-	1	60	-	40	100
11	CC	26BSHB211A	A]Sports & Physical Education	-	-	2	-	1	60	-	40	100
		26BSHB211B	B]Music & Dance									
		26BSHB211C	C]Yoga Education									
	Total			13	-	16	5	21	410	150	540	1100
	Total Contact Hrs=29						CUMULATIVE CREDITS: 21+21=42					

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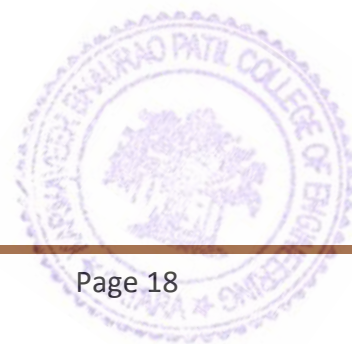
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UG Certificate Level

Exit Course after Semester -II of Engineering

(UG Certificate Course in Engineering /Technology)

Course Category	Course Code	Name of Course	Weekly Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	ISE	MS E	ESE	Total	
Exit	BSHEX01	Computer Hardware Basics Skill India Digital Hub (SIDH) - Upskilling, reskilling, career growth and lifelong learning				120	00	80	200	8
	OR									
	BSHEX01	Industrial Training for 2 Month				120	00	80	200	8
Total Contact Hrs. : 48 to 64										08





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Curriculum Structure

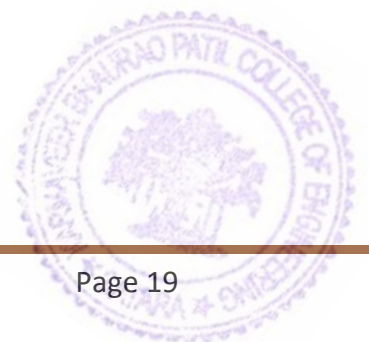
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Second Year B.Tech. in Computer Science &

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Effective from

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SEMESTER –III												
Sr. No.	Course Category	Course Code	Name of Course	Weekly Teaching Scheme				Credit	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	PCC	27103PCC301	Probability and Statistics	2	-	-	1	2	10	30	60	100
2		27103PCC302	Digital Electronics and Microprocessor	2	-	-	1	2	10	30	60	100
3		27103PCC303	Computer Architecture and Organization	2	-	-	1	2	10	30	60	100
4		27103PCC304	Data Structure using C	2	-	-	1	2	10	30	60	100
5		27103PCC305	Data Structure using C Lab	-	-	4	-	2	60	-	40	100
6	MDM	27103MDM306	MDM Bucket List	2	-	-	-	2	10	30	60	100
7	OE	27103OE307	OE Bucket List	3	-	-	-	3	10	30	60	100
8	EEMC	27103EEMC308	Entrepreneurship and Startup Eco System	2	-	-	-	2	50	-	-	50
9	VEC	27103VEC309	Universal Human Values	2	-	-	-	2	50	-	-	50
10	CEP/ FP	27103FP310	Social Rural Internship	-	-	4	-	2	60	-	40	100
Total				17	00	08	04	21	280	180	440	900
Total Contact Hrs=25				CUMULATIVE CREDITS: 42+21=63								

ISE – In Semester Evaluation, ESE – End Semester Examination, MSE – Mid Semester Examination, L-Lecture, T- Tutorial, P-Practical, S-Self Study



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Second Year B.Tech. in Computer Science & Engineering
(W.E.F 2027-28)

SEMESTER –IV												
Sr. No.	Course Category	Course Code	Name of Course	Weekly Teaching Scheme				Credit	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	PCC	27103PCC401	Discrete Mathematics	3	-	-	1	3	10	30	60	100
2		27103PCC402	Software Engineering and Project Management	3	-	-	..	3	10	30	60	100
3		27103PCC403	Operating System	3	-	-	1	3	10	30	60	100
4		27103PCC404	Operating System Lab	-	-	2	-	1	60	-	40	100
5	MDM	27103MDM405	MDM Bucket List	3	-	-	-	3	10	30	60	100
6	OE	27103OE406	OE Bucket List	2	-	-	-	2	10	30	60	100
7	VSEC	27103VSEC407	Object Oriented Programming in JAVA	1	-	-	1	1	30	30	40	100
8		27103VSEC408	Object Oriented Programming in JAVA Lab	-	-	2	-	1	60	-	40	100
9	AEC	27103AEC409	Quantitative Aptitude and Logical Reasoning	2	-	-	1	2	50	-	-	50
10	EEMC	27103EEMC410	Intellectual Property Rights	2	-	-	1	2	50	-	-	50
11	VEC	27103VEC411	Environmental Science	2	-	-	-	2	50	-	-	50
Total				21	00	04	05	23	330	180	420	950
Total Contact Hrs=25				CUMULATIVE CREDITS: 63 + 23 = 86								

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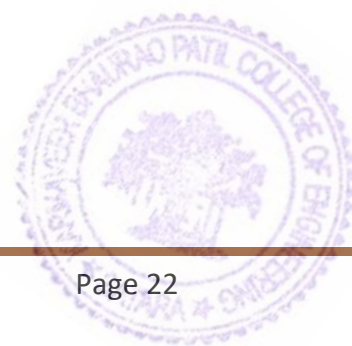
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Exit Course:

Course Category	Course Code	Name of Course	Weekly Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	ISE	MSE	ESE	Total	
EXIT	27103EX02	The Java Programming (with Spring Boot) – Capstone Project	-	-	16	60	-	40	100	08





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Curriculum Structure
of
Third Year B.Tech. in Computer Science &
Engineering

Effective from
Academic Year 2028-29





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Third Year B.Tech. in Computer Science & Engineering
(W.E.F 2028-29)

SEMESTER –V												
Sr. No	Course Category	Course Code	Course Title	Weekly Teaching Scheme				Cred it	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	Programme Core Course (PCC)	28103PCC501	Machine Learning	3	-	-	1	3	10	30	60	100
2		28103PCC502	Design and Analysis of Algorithms	3	-	-	1	3	10	30	60	100
3		28103PCC503	Data Communication and Computer Networks	3	-	-	1	3	10	30	60	100
4		28103PCC501L	Machine Learning Lab	-	-	2	-	1	60	-	40	100
5		28103PCC503L	Data Communication and Computer Networks Laboratory	-	-	2	-	1	60	-	40	100
6		28103PCC504L	Mini Project	-	-	2	-	1	60	-	40	100
7		28103PCC505L	Competitive Programming Lab	-	-	2	-	AU	60	-	40	100
8	Programme Elective Course (PEC)-I	28103PEC506	Program Elective-I	3	-	-	1	3	10	30	60	100
9		28103PEC506L	Program Elective-I Lab	-	-	2	-	1	60	-	40	100
10	MDM	28103MDM507	MDM Bucket List	3	-	-	1	3	10	30	60	100
11	OE-1	28103OE508	OE Bucket List	3	-	-	1	3	10	30	60	100
	Total			18	00	10	06	22	360	180	560	1100
Total Contact Hrs=28												
CUMULATIVE CREDITS: 86 + 22= 108												

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(W.E.F 2028-29)

SEMESTER –VI												
Sr. No	Course Category	Course Code	Course Title	Weekly Teaching Scheme				Cre dit	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	Programme Core Course (PCC)	28103PCC601	System Programming and Compiler Design	3	-	-	1	3	10	30	60	100
2		28103PCC602	Database Management System	3	-	-	1	3	10	30	60	100
3		28103PCC603	Natural Language Processing	2	-	-	1	2	10	30	60	100
4		28103PCC602L	Database Management System Lab	-	-	2	-	1	60	-	40	100
5		28103PCC603L	Natural Language Processing Lab	-	-	2	-	1	60	-	40	100
6	Programme Elective Course (PEC)	28103PEC604	Program Elective-II	3	-	-	1	3	10	30	60	100
7		28103PEC605	Program Elective- II Lab	3	-	-	1	3	10	30	60	100
8		28103PEC604L	Program Elective-III	-	-	2	-	1	60	-	40	100
9		28103PEC605L	Program Elective- III Lab	-	-	2	-	1	60	-	40	100
10	MDM-II	28103MDM606	MDM Bucket List	2	-	-	-	2	10	30	60	100
11	VSEC	28103VSEC607	Project Phase-I	-	-	4	-	2	60	-	40	100
	Total			16	00	12	05	22	360	180	560	1100
Total Contact Hrs=28												
CUMULATIVE CREDITS: 108 + 22 = 130												

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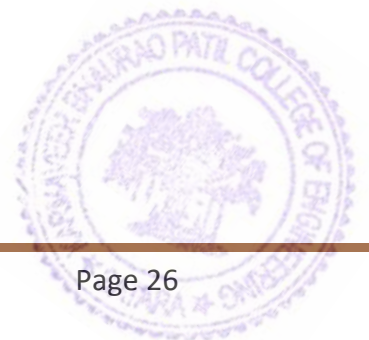
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Exit Course

Course Category	Course Code	Name of Course	Weekly Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	ISE	MSE	ESE	Total	
EXIT	28103EX03	Industry-Oriented IoT Project	-	-	16	60	-	40	100	08



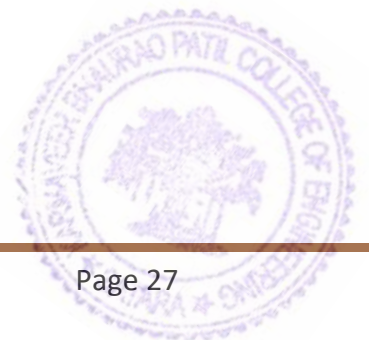


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Curriculum Structure
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Effective from
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SEMESTER –VII

Sr. No	Course Category	Course Code	Course Title	Weekly Teaching Scheme				Credit	Evaluation Scheme			
				L	T	P	S		ISE	MSE	ESE	Total
1	Programme Core Course (PCC)	29103PCC701	Agent-Based AI Systems	2	-	-	1	02	10	30	60	100
2		29103PCC702	Data Analytics	2	-	-	1	02	10	30	60	100
3		29103PCC703L	Agent-Based AI Systems Lab	-	-	2	-	01	60	-	40	100
4		29103PCC704L	Data Analytics Lab	-	-	2	-	01	60	-	40	100
5	Programme Elective Course (PEC)	29103PEC705	Program Elective-IV	3	-	-	1	03	10	30	60	100
6		29103PEC706	Programme Elective -V	3	-	-	1	03	10	30	60	100
7	MDM	29103MDM707	MDM Bucket List	-	-	8	-	04	10	30	60	100
8	RM	29103RM708	Research Methodology	2	-	-	-	02	10	30	60	100
9	RM	29103RM709	Research Methodology Lab	-	-	4	-	02	60	-	40	100
10	Project	29103P710L	Project Phase II	-	-	8	-	04	60	-	40	100
Total				12		24	04	24	300	180	520	1000
Total Contact Hrs=36				CUMULATIVE CREDITS: 130+ 24 = 154								

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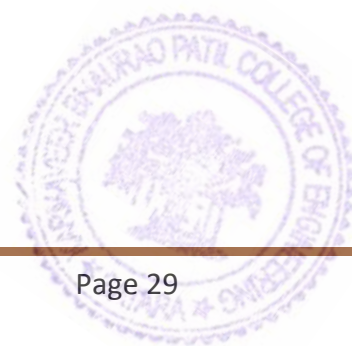
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(W.E.F 2029-30)

SEMESTER –VIII											
Sr. No	Course Category	Course Code	Name of Course	Weekly Teaching Scheme			Cre dit	Evaluation Scheme			
				L	T	P		ISE	MSE	ESE	Total
1	PCC	29103PCC801	Technical certification	-	-	8	4	-	-	-	100
2	PEC	29103PEC802	Foreign Language Certification	2	-	-	2	10	30	60	100
3	IT/OJT	29103IT804	Internship	-	-	24	12	60	-	40	100
	Total			02	00	32	18	70	30	100	300
Total Contact Hrs=34							CUMULATIVE CREDITS: 154 + 18 = 172				

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List of Programme Elective Courses (PEC)

PEC DOMAIN	SEM V		SEM VI				SEM VII	
	PEC-I Theory	PEC-I Lab	PEC-II Theory	PEC-III Theory	PEC-II Lab	PEC-III Lab	PEC-IV	PEC-V
Advancement in Programming	Advanced Java	Advanced Java Lab	Mobile Application Development	Full Stack Web Development	Mobile Application Development	Full Stack Web Development	Software Testing	Software Audit
Emerging Technologies	Internet of Everything (IOX)	Internet of Everything (IOX)Lab	Big Data Analytics	Cloud Computing	Big Data Analytics	Cloud Computing	BlockChain	Industry 5.0
Security	Cryptography and Network Security	Cryptography and Network Security Lab	Cyber Security	Digital Forensics	Cyber Security	Digital Forensics	Information Security Governance and Risk Management	Digital Identity and access management
Artificial Intelligence	AI Applications and Case Studies	AI Applications and Case Studies Lab	Computer Vision	Generative AI	Computer Vision	Generative AI	Deep Learning	Explainable AI



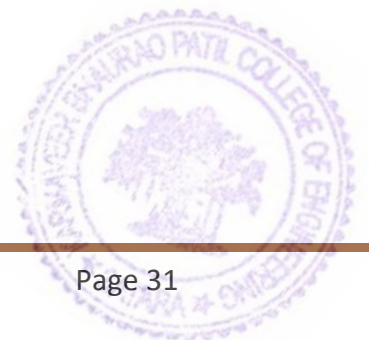


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Curriculum Structure
of
B.Tech. in Computer Science & Engineering
Multidisciplinary Minor (MDM) Bucket
Effective from
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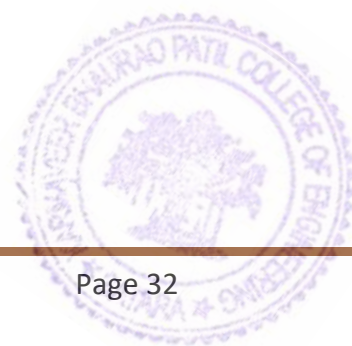
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Semester wise Multidisciplinary Minor (MDM) Bucket List

For

Civil Engineering, Electronics & Telecommunication, Mechanical Engineering

SEMESTER-III to VII				
Sr. No.	Semester	Course Code	Course Name	Credit
1	III	27103MDM306	Computer Hardware & Networking Fundamentals	02
2	IV	27103MDM405	Problem Solving using C	03
3	V	28103MDM507A	Data Structures for Beginners	03
		28103MDM507B	Python Programming for Engineering Applications	
4	VI	28103MDM606A	AI tools & Prompt Engineering	02
		28103MDM606B	Data Analytics using Excel & Power BI	
5	VII	29103MDM707	Interdisciplinary Capstone Project in Computing Technologies	04





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Curriculum Structure

of

**B.Tech. in Computer Science &
Engineering**

Open Elective Bucket

Effective from

Academic Year 2027-30





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Open Elective (OE) Bucket List- (Semester-III to V)

Open Electives Bucket List-I

Course Category	Course Code	Name of Course	Weekly Teaching Scheme				Credit	Evaluation Scheme			
			L	T	P	S		ISE	MSE	ESE	Total
OE	27103OE307A	Recent Computing Technology	3	-	-	-	03	10	30	60	100
	27103OE307B	Power BI	3	-	-	-	03	10	30	60	100
	27103OE307C	Digital Literacy	3	-	-	-	03	10	30	60	100
	27103OE307D	Social Media, Privacy & Security	3	-	-	-	03	10	30	60	100
	27103OE307E	Project Management	3	-	-	-	03	10	30	60	100

Open Electives Bucket List-II

Course Category	Course Code	Name of Course	Weekly Teaching Scheme				Credit	Evaluation Scheme			
			L	T	P	S		ISE	MSE	ESE	Total
OE	27103OE307A	Mind, Body & Wellness	2	-	-	-	02	10	30	60	100
	27103OE307B	AI for Economics	2	-	-	-	02	10	30	60	100
	27103OE307C	Write To Information & Good Governance	2	-	-	-	02	10	30	60	100
	27103OE307D	Emotional Intelligence & Leadership	2	-	-	-	02	10	30	60	100
	27103OE307E	Conflict Management Through Meditation	2	-	-	-	02	10	30	60	100



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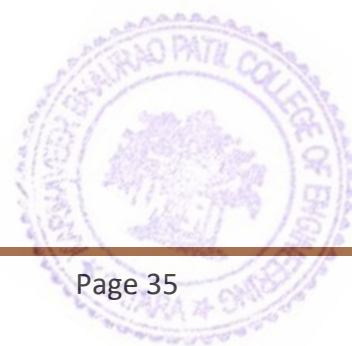
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Open Electives Bucket List-III

Course Category	Course Code	Name of Course	Weekly Teaching Scheme				Credit	Evaluation Scheme			
			L	T	P	S		ISE	MSE	ESE	Total
OE	28103OE406A	Basic of Computer System	03	-	-	-	03	10	30	60	100
	28103OE406B	Basic of Artificial Intelligence	03	-	-	-	03	10	30	60	100
	28103OE406C	Python Programming	03	-	-	-	03	10	30	60	100
	28103OE406D	Fundamental of Commercial Cloud	03	-	-	-	03	10	30	60	100
	28103OE406E	Programming Fundamental	03	-	-	-	03	10	30	60	100





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Curriculum Structure
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B.Tech. in Computer Science & Engineering
HONOR
Effective from
Academic Year 2027-30





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B.Tech. in Computer Science & Engineering with Honor and Multidisciplinary Minor

1. It is required to complete any SIX Courses listed below (each of 3 credits) from ONLINE NPTEL platform to earn total of 18 credits under Honors certification.
2. Student must complete and earn the credits for any of the six courses starting from Second Year-First semester (3rd semester) to Final Year -Second Semester (8th semester).
3. Minimum eligibility to opt for a Double Minor degree is a CGPA of 7.5 or above at the end of the first year.
4. Basket of the Honors courses is mentioned in the following table.

Semester wise HONOR Courses

Track: Honor in Advanced Programming (SEMESTER III to VII)					
Sr. No.	Semester	Course Code	Course Name	NPTEL Weeks	Credit
1	III	27103HR301	Programming in Modern C++ https://www.nptel.ac.in/courses/106105234	12	04
2	IV	27103HR401	Programming, Data Structures & Algorithms using Python https://nptel.ac.in/courses/106106145	08	03
3	V	28103HR501	Getting Started with Competitive Programming https://onlinecourses.nptel.ac.in/no_c26_cs69/preview	12	04
4	VI	28103HR601	Linear Programming & its application to Computer Programming https://nptel.ac.in/courses/106104356	08	03
5	VII	29103HR701	GPU Architecture & Programming https://nptel.ac.in/courses/106105220	12	04
Total Credits					18



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Curriculum Structure
of
B.Tech. in Computer Science & Engineering
HONOR WITH RESEARCH
Effective from
Academic Year 2027-30





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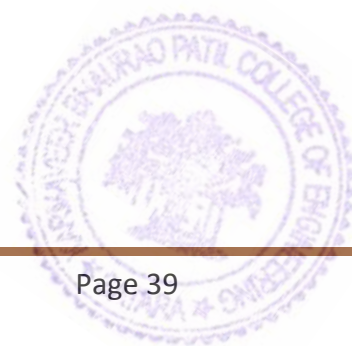
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Honors with Research and Multidisciplinary Minor

Eligibility: All clear with 7.5 CGPA at Third Year

SEMESTER-VII & VIII											
Sr. No	Semester	Course Code	Name of Course	Weekly Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	ISE	MSE	ESE	Total	
1	VII	29103HR701	Research Project Phase I			18	200	-	100	300	09
2	VIII	29103HR702	Research Project Phase II			18	200	-	100	300	09
	Total			0	0	36	400	-	200	600	18





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Curriculum Structure
of
B.Tech. in Computer Science & Engineering
DOUBLE MINOR
Effective from
Academic Year 2027-30





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List of Multi-Disciplinary Double Minor Courses

Double Minor

1. It is required to complete **SIX Courses** (each of 3 credits) from **ONLINE platform** to earn total of 18 credits under Double Minor (DM) certification.
2. Student must complete and earn the credits for all the six courses starting from Second Year First semester (3rd semester) to Final Year Second Semester (8th semester).
3. Minimum eligibility to opt for a Double Minor degree is a CGPA of 7.5 or above at the end of the first year.
4. Basket of the Double Minor courses and respective semester is mentioned in the following table.

List of Multi-Disciplinary Double Minor Courses

SEMESTER-III to VII					
Sr. No.	Semester	Course Code	Course Name	NPTEL Weeks	Credit
1	III	27103DM301	Data Science for Engineers https://nptel.ac.in/courses/106106179	08	03
2	IV	27103DM401	Artificial Intelligence Concepts & Techniques https://www.nptel.ac.in/courses/106108705	12	04
3	V	28103DM501	Responsible & Safe AI Systems https://nptel.ac.in/courses/106106472	12	04
4	VI	28103DM601	Introduction to LLM https://nptel.ac.in/courses/106102576	12	04
5	VII	29103DM701	Artificial Intelligence in Industrial Management Engineering https://nptel.ac.in/courses/127104664	08	03
Total Credits					18