



**DR. D. Y. PATIL SCHOOL OF SCIENCE & TECHNOLOGY
DR. D. Y. PATIL VIDYAPEETH, PUNE**

(Deemed to be University)

Revised (3rd cycle) by NAAC with a CGPA of 3.64 on four-point scale at 'A++' Grade)

(Declared as Category - I University by UGC Under Graded Autonomy Regulations, 2018)

(An ISO 9001: 2015 and 14001:2015 Certified University and Green Education Campus)

**BTech Computer Science and Engineering course structure from
Academic year 2024-25**

Type of Courses		Semester wise credits								Course Wise Credits
		I	II	III	IV	V	VI	VII	VIII	
BSC/ESC	Basic Science	7	7	4						30
	Engineering Science	6	6							
Program Courses	Programme Core (PCC)	3	3	10	12	8	6			48
	Programme Elective (PEC)					3	6	3	3	
Multidisciplinary (MM)	Multidisciplinary Minor / Open Electives				4		2			15
Holistic Development Courses	Ability Enhancement (AEC)	2	2	2	2	2	2			31
	Indian Knowledge System (IKS)			2						
	Value Addition Courses	1	1	2	2	2	3			
	Generic (GC)	1	1		2	2				
Experiential Learning Courses (ELC)	Projects					3	3			36
	Internships							15	15	
Total Credits		20	20	20	22	20	22	18	18	160

Dr. D. Y. Patil Vidyapeeth, Dr. D. Y. Patil School of science & Technology
First Year Engineering (2024 Course)
(With effect from Academic Year 2024-25)

SEMESTER 1

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PCC-CS-101	PCC	Programming-I	2	0	2	40	60	100	200	2	0	2	3
ESC-CS-101	ESC	Basics of Electrical & Electronics Engineering	2	0	2	40	60	-	100	2	0	2	3
ESC-CS-102	ESC	Engineering Graphics/ Engineering Mechanics	2	0	2	40	60	-	100	2	0	2	3
BSC-CS-101	BSC	Engineering Mathematics	3	1	0	40	60	-	100	3	1	0	4
BSC-CS-102	BSC	Applied Science- I	2	0	2	40	60	-	100	2	0	2	3
AEC-CS-101	AEC	Professional Communication Skills	0	2	0	50	-	-	50	0	2	0	2
VAC-CS-101	VAC	Design Thinking - I	0	0	2	50	-	-	50	0	0	2	1
GC-CS-101	GC	Universal Human Values	1	0	0	50	-	-	50	1	0	0	1
			12	3	10	350	300	100	750	12	3	10	20

SEMESTER 2

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PCC-CS-201	PCC	Programming-II	2	0	2	40	60	100	200	2	0	2	3
ESC-CS-201	ESC	Digital Electronics &	2	0	2	40	60	-	100	2	0	2	3

		Logic Design											
ESC-CS-202	ESC	Engineering Graphics/ Engineering Mechanics	2	0	2	40	60	-	100	2	0	2	3
BSC-CS-201	BSC	Mathematics and Statistics	3	1	0	40	60	-	100	3	1	0	4
BSC-CS-202	BSC	Applied Science- II	2	0	2	40	60	-	100	2	0	2	3
AEC-CS-201	AEC	Project Based Learning I	0	0	4	40	60	-	100	0	0	4	2
VAC-CS-201	VAC	Design Thinking - II	0	0	2	50	-	-	50	0	0	2	1
GC-CS-201	GC	Physical Education & Yoga Practices/NSS	0	0	2	50	-	-	50	0	0	2	1
			11	1	18	350	300	100	750	11	1	18	20

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Second Year Engineering (2024 Course)
(With effect from Academic Year 2024-25)

SEMESTER 3

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PCC-CS-301	PCC	Data Structures & Algorithms	3	0	2	40	60	100	200	3	0	2	4
PCC-CS-302	PCC	Software Engineering	2	0	2	20	30	50	100	2	0	2	3
PCC-CS-303	PCC	Computer Networks and Security	2	0	2	40	60	50	200	2	0	2	3
BSC-CS-301	BSC	Discrete Mathematics	3	1	0	40	60	-	100	3	1	0	4
AEC-CS-301	AEC	Foreign Languages-I	2	0	0	50	-	-	50	2	0	0	2
VAC-CS-301	VAC	Environmental Science	2	0	0	50	-	-	50	2	0	0	2
GC-CS-301	GC	Indian Knowledge System	2	0	0	50	-	-	50	2	0	0	2
			16	1	6	350	300	400	750	16	1	6	20
HC-CS-301		Honors- I	Honors Paper –I (Optional)										3

SEMESTER 4

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PCC-CS-401	PCC	Database Management System	3	0	2	40	60	100	200	3	0	2	4
PCC-CS-402	PCC	Artificial Intelligence	3	0	2	20	30	50	100	3	0	2	4
PCC-CS-403	PCC	Wireless Communication	3	0	2	20	30	50	100	3	0	2	4
MM-CS-401	MM	Multidisciplinary Minor I	3	0	2	20	30	50	100	3	0	2	4
AEC-CS-401	AEC	Project Based Learning II	0	0	4	50	-	100	150	0	0	4	2
VAC-CS-401	VAC	Banking and Financial Services	2	0	0	50	-	-	50	2	0	0	2
GC-CS-401	GC	Co-curricular Course I	0	0	4	50	-	-	50	0	0	4	2
			14	0	16	250	150	350	750	14	0	16	22
HC-CS-401		Honors- II	Honors Paper –II (Optional)										3

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Third Year Engineering (2024 Course)
(With effect from Academic Year 2024-25)

SEMESTER 5

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PCC-CS-501	PCC	Operating System	3	0	2	40	60	100	200	3	0	2	4
PCC-CS-502	PCC	Internet of Things	3	0	2	20	30	50	100	3	0	2	4
PEC-CS-501	PEC	Specialization Electives -I	2	0	2	20	30	50	100	2	0	2	3
AEC-CS-501	AEC	Aptitude and Professional Skills -I	0	2	0	50	-	-	50	0	2	0	2
VAC-CS-501	VAC	Foreign Languages-II	2	0	0	50	-	-	50	2	0	0	2
GC-CS-501	GC	Photography/Painting/Event Management	0	0	4	50	-	-	50	0	0	4	2
ELC-CS-501	ELC	Major Project -I	0	0	6	100	-	100	200	0	0	6	3
			10	2	16	330	120	300	750	10	2	16	20
HC-CS-601		Honors- III	Honors Paper –III(Optional)										3

SEMESTER 6

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PCC-CS-601	PCC	Web Technology	2	0	2	20	30	50	100	2	0	2	3
PCC-CS-602	PCC	Theory of Computation	2	0	2	20	30	50	100	2	0	2	3
PEC-CS-601	PEC	Specialization Electives -II	2	0	2	20	30	50	100	2	0	2	3
PEC-CS-602	PEC	Specialization Electives -III	2	0	2	20	30	50	100	2	0	2	3
MM-CS-601	MM	Multidisciplinary Minor-II	2	0	0	50	-	-	50	2	0	0	2
AEC-CS-601	AEC	Aptitude and Professional Skills -II	0	2	0	50	-	-	50	0	2	0	2
VAC-	VAC	Full Stack	2	0	2	50	-	50	100	0	0	4	3

CS-601		Development											
ELC- CS-601	ELC	Major Project -II	0	0	6	50	-	100	150	2	0	0	3
			12	2	14	280	120	350	750	12	2	14	22
HC- CS-601		Honors- IV	Honors Paper –IV(Optional)										3

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Fourth Year Engineering (2024 Course)
(With effect from Academic Year 2024-25)

SEMESTER 7

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PEC- CS-701	PEC	Specialization Electives -IV	2	0	2	100	-	-	100	2	0	2	3
ELC- CS-701	ELC	Internships/ Research Project- I	0	0	30	150	-	300	450	0	0	30	15
			2	0	32	250	-	300	550	0	0	32	18
HC- CS-701		Honors- V	Honors Paper –V(Optional)										3

SEMESTER 8

Course Code	Course Type	Course Name	Teaching Scheme			Examination Assessment Scheme				Credit scheme			
			Lecture	Tutorial	Practical	CA	End Sem	Practical	Total	L	T	P	C
PEC- CS-801	PEC	Specialization Electives -V	2	0	2	100	-	-	100	2	0	2	3
ELC- CS-701	ELC	Internships/ Research Project- I	0	0	30	150	-	300	450	0	0	30	15
			2	0	32	250	-	300	550	0	0	32	18
HC- CS-801		Honors- VI	Honors Paper –VI(Optional)										3

Indicative list of Specialization Elective Courses

*As per interest of the students. Students will have to complete 12-week FDP level courses (3 credits each) from NPTEL (The list of courses will be floated by the institute)

* As per Industry requirements/ Technology Development in the field of Computer Science &

Engineering

- Cloud Computing
- Networks and Distributed Systems
- Information Security
- Block Chain

Indicative list of Multidisciplinary Minors

* As per interest of the students. Students will have to complete 12-week FDP level courses (3 credits each) from NPTEL (The list of courses will be floated by the institute)

- Management
- Electronics
- Design Technology
- Biotechnology

Notes:

1. Degree with Multidisciplinary Minor (MM):

Achieve a minimum of 160 credits to earn a B.Tech degree with a Multidisciplinary Minor.

2. Degree with MM and Honors/Double Minor:

a) B.Tech. -Honors and Multidisciplinary Minor (with additional 18 credits):

- Earn 160 credits, plus 18 additional credits.
- Complete special self-study modules (one per semester from the 3rd semester) based on core course syllabi (3 credits each).
- *In the 7th and 8th semesters, complete two papers with GATE level questions (3 credits each).

OR

- *Complete special self-study modules (one per semester from the 3rd semester) based on core course syllabi (3 credits each).
- In the 7th and 8th semesters, complete 12-week courses from NPTEL (3 credits each). The institute will provide a list of eligible courses.

b) B.Tech.- Honors with Research and Multidisciplinary Minor (additional 18 credits by research):

- **Complete a 2-month research internship in the summer after the 2nd and 3rd years (4 credits each), and a project after the 4th year (4 credits).
- *Complete two NPTEL courses of FDP level (3 credits each) in the 7th and 8th semesters.

Credit requirements for different options of the Exit Degree

Semester	I	II	III	IV	V	VI	VII	VIII	Total
B. Tech with Multidisciplinary Minor (MM)	20	20	20	22	20	22	18	18	160
B. Tech with Honors and Multidisciplinary Minor (MM)	20	20	20+3*	22+3*	20+3*	22+3*	18+3*	18+3*	178
B. Tech. Honors with Research and Multidisciplinary	20	20	20	22+4*	20	22+4**	18+3*	18+3*+4**	178

Minor									
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3. Students can receive certificates upon completing specific milestones in the program:
 - a. **Certificate in Engineering:** Upon completion of one year (earning 40 credits) and an 8-week summer workshop/Training/Certification from Industry.
 - b. **Diploma in Engineering:** Upon completion of two years (earning 82 credits) and an 8-week summer workshop/Training/Certification from Industry.
 - c. **B.Sc. Engineering:** Upon completion of three years (earning 124 credits) and an 8-week summer workshop/Training/Certification from Industry.
4. The University has established a technical support team to manage the registration of Academic Bank of Credits (ABC).