



JSPM UNIVERSITY PUNE

Recognized by UGC u/s 2 (f) of UGC Act 1956 and enacted by the
State Government of Maharashtra - JSPM University Act, 2022 (Mah.IV of 2023)

JSPM University Pune
Faculty of Science and Technology
School of Computational Sciences



NEP aligned Curriculum Structure

for

B. Tech - CSE (Data Science) Regular

(Effective from AY: 2024-25)



JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF COMPUTATIONAL SCIENCES

COURSE STRUCTURE (NEP 2020 Aligned)

W.E. F

2024-2025

RELEASE DATE

01/07/2024

SECOND YEAR BACHELOR OF TECHNOLOGY (REGULAR)
(COMPUTER SCIENCE AND ENGINEERING - DS)

REVISION NO.

0.0 (NEP)

SEMESTER III (LEVEL 5)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
BSC	230GMAB07_03	Ordinary Differential Equations and Multivariate Calculus	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	230GCSB20_03	Data Structures using C++	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	230GAIB81_03	Python Programming Language	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
	230GDSB89_03	Introduction to Data Analytics	3	-	-	-	30	30	40	100	-	-	-	-	100	3
VEC	230USYB02_03	Professional Laws, Ethics, Values and Harmony	2	-	-	-	30	30	40	50	-	-	-	-	50	2
MMC	---	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
IOC	---	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
LC	230GCSB21_03	Data Structure using C++ Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GAIB88_03	Python Programming Language Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
LLC	230HFSB80_03	Health and Nutrition	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5
TOTAL			15	1	6	4									750	20



L-Lecture

T-Tutorial

P-Practical Session (Laboratory)


EL-Experiential Learning

Multidisciplinary Minor Course (MMC)			
Course Code	230GMTB01_03	230VBFB04_03	230GRAB55_03
Course Name	Sensors and Actuators	Digital Banking	Industrial Robots
Course Code	230GETB34_03	230VBFB02_03	230GRAB53_03
Course Name	IoT and Applications	Basics of Stock Market	Robot Operating Systems
Course Code	230GETB36_03	230VBCB09_03	230GMTB52_03
Course Name	Microcontroller and Applications	Financial Literacy	Autotronics
Course Code	230GETB41_03	230VBCB08_03	240GFRB55_03
Course Name	Introduction to Embedded Systems	Software for Financial Accounting	Legal Aspects of Fire Safety Health and Environment

Interdisciplinary Open Course (IOC)				
Course Code	230HFSB16_03	230GETB33_03	230VMSM09_03	230GCEB29_03
Course Name	Biology for Engineers	EV Technology	Ethics And Sustainability for Business	Smart Cities
Course Code	230GETB32_03	230VBCB15_03	230GCEB58_03	230GMEB64_03
Course Name	Cyber Physical Systems	Finance for Non-Finance	Sustainable Development Goals and Policies	Smart Materials
Course Code	230GCEB40_03	230VBCB04_03	230VBBB25_03	230VBCB04_03
Course Name	Intelligent Transport Systems	Basics of Accounting	Economics for Management	Basics of Accounting


Dr. Rahul R. Chakre
 Programme Coordinator, BTech-DS


Prof. G. A. Patil
 Director, School of Computational Sciences


Prof. R. S. Deshpande
 Dean, Faculty of Science and Technology

Dr. Anuradha S. Deshpande
 Associate Dean (Academics)



Prof. B. B. Ahuja
 Vice Chancellor, JSPM University Pune



JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF COMPUTATIONAL SCIENCES

COURSE STRUCTURE (NEP 2020 Aligned)

W.E. F

2024-2025

RELEASE DATE

01/07/2024

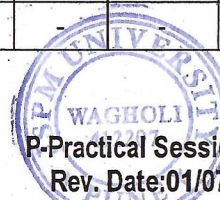
SECOND YEAR BACHELOR OF TECHNOLOGY (REGULAR)
(COMPUTER SCIENCE AND ENGINEERING - DS)

REVISION NO.

0.0 (NEP)

SEMESTER IV

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										TOTAL	CREDITS
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)					
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 marks)	CONTINUOUS INSEMESTER EVALUATION (50 marks)	END SEMESTER EXAMINATION (50 marks)	CONTINUOUS INSEMESTER EVALUATION (50 marks)	END SEMESTER EXAMINATION (50 marks)				
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)									
BSC	230GMAB08_04	Vector Calculus and Partial Differential Equations	2	1	-	-	30	30	40	100	-	-	-	-	100	3		
PCC	231GCSB12_04	Object Oriented Programming	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
	230GCSB51_04	Computer Algorithms	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
AEC	230UENB02_04	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2		
EEC	230GCEB02_04	Environment and Sustainability	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
MMC	---	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2		
SEC	232GCSB17_04	Development Tools for Laboratory Data Science	2	-	2	-	-	-	-	-	50	50	50	50	100	3		
LC	231GCSB14_04	Object Oriented Programming Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
	230GCSB52_04	Computer Algorithms Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
IITP/ FP/ CEP	230GCSB16_04	Internship / Field Project / Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	50	50	50	2		
TOTAL			14	1	10	-									750	22		
DSH	231GDSB97_04	Applied Statistics	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
DSH	230GDSB98_04	Descriptive Analytics	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
LC	230GDSB104_04	Descriptive Analytics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
MLC#	---	Audit Course	1	-	-	-	-	-	-	50	-	-	-	-	50	1		



Multidisciplinary Minor Course (MMC)			
Course Code	230GMTB01_04	230GETB09_04	230GRAB55_04
Course Name	Sensors and Actuators	Wireless Sensor Network	Industrial Robots
Course Code	230GETB34_04	230VBCB09_04	230VBFB04_03
Course Name	IoT and Applications	Financial Literacy	Digital Banking
Course Code	230GETB36_04	230VBFB02_04	230GRAB53_04
Course Name	Microcontroller and Applications	Basics of Stock Market	Robot Operating Systems
Course Code	230GETB41_04	230VBCB08_04	230GMTB52_04
Course Name	Introduction to Embedded Systems	Software for Financial Accounting	Autotronics

Mandatory Learning Course (MLC#) Audit Course			
Course Code	230GCSB206_04	230GCSB207_04	230GAIB101_04
Course Name	Robotic Process Automation	Selenium Automation	Gen AI
Course Code	230GCSB208_04	230GCSB209_04	230GDSB120_04
Course Name	Agile Software Development	Jira and Git	Data Analytics with Python and Power BI
Course Code	230UPOB02_07		
Course Name	Introduction to Indian Constitution		

Note: A Diploma will be awarded if a student exits after second year.

For "Exit" at the end of "Second Year" the student must complete a total of 8 additional credits.

a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 4 internship of minimum 4 weeks.


b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project).


Dr. Rahul R. Chakre
Programme Coordinator, BTech-DS


Dr. Anuradha S. Deshpande
Associate Dean (Academics)


Prof. G. A. Patil
Director, School of Computational Sciences


Prof. R. S. Deshpande
Dean, Faculty of Science and Technology


Prof. B. B. Ahuja
Vice Chancellor, JSPM University Pune





JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF COMPUTATIONAL SCIENCES

THIRD YEAR BACHELOR OF TECHNOLOGY (REGULAR)
(COMPUTER SCIENCE AND ENGINEERING - DS)

COURSE STRUCTURE (NEP 2020 Aligned)

W.E. F

2025-2026

RELEASE DATE

01/07/2025

REVISION NO.

0.0 (NEP)

SEMESTER V (LEVEL 5.5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100/25 Marks)			END SEMESTER EXAMINATION (100 / 75 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PSMC	231GCSB25_05	Discrete Mathematics and Graph Theory	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	230GCSB81_05	Operating Systems and Compiler Construction	3	-	-	2	30	30	40	100	-	-	-	-	100	3.5
	240GDSB01_05	Data Visualization Techniques	3	-	-	-	30	30	40	100	-	-	-	-	100	
PEC	---	Programme Elective Course	3	-	-	-	25			75	-	-	-	-	100	3
HSSM	231VBCB27_05	Finance for Engineers	1	-	4	-	-	-	-	-	-	-	50	50	50	2
MMC	---	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
IOC	---	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
VSC	230IINB02_05	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
LC	240GDSB02_05	Data Visualization Techniques Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GCSB82_05	Operating Systems and Compiler Construction Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
TOTAL			17	-	8	4									800	22
DSH	230GDSB99_05	Predictive Analytics	3	-	-	-	30	30	40	100	-	-	-	-	100	3
LC	230GDSB106_05	Predictive Analytics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
MLC#	---	Audit Course	1	-	-	-	-	-	-	50	-	-	-	-	50	1

L-Lecture

Format No.: JSPMUni/ACAD/001

T-Tutorial
Rev. No.:0.0

P-Practical Session (Laboratory)
Rev. Date:01/07/2025

EL-Experiential Learning
Page 1 of 2

Program Elective Course (PEC)				
V (PEC-I)	Course Code	230GCSB30_05	230GCSB210_05	230GCSB211
	Course Name	Cyber Security and Privacy (NPTEL_MOOC)	Foundations of Virtual Reality (NPTEL_MOOC)	Statistical Learning for Reliability Analysis (NPTEL_MOOC)

Multidisciplinary Minor Course (MMC)			
Course Code	230GMTB01_04	230GETB09_04	230GRAB55_03
Course Name	Sensors and Actuators	Wireless Sensor Network	Industrial Robots
Course Code	230GETB34_04	230VBCB09_04	230VBFB04_03
Course Name	IoT and Applications	Financial Literacy	Digital Banking
Course Code	230GETB36_04	230VBFB02_04	230GRAB53_04
Course Name	Microcontroller and Applications	Basics of Stock Market	Robot Operating Systems
Course Code	230GETB41_05	230VBCB08_04	230GMTB52_04
Course Name	Introduction to Embedded Systems	Software for Financial Accounting	Autotronics

Interdisciplinary Open Course (IOC)				
Course Code	250GBTB01_05	230GETB33_05	230VMSM09_03	230GCEB29_03
Course Name	Bioengineering	EV Technology	Ethics And Sustainability for Business	Smart Cities
Course Code	230GETB32_03	230VBCB15_03	230GCEB58_03	230GMEB64_03
Course Name	Cyber Physical Systems	Finance for Non-Finance	Sustainable Development Goals and Policies	Smart Materials
Course Code	230GCEB40_03	230VBCB04_03	230VBBB25_03	230VBCB04_03
Course Name	Intelligent Transport Systems	Basics of Accounting	Economics for Management	Basics of Accounting



Mandatory Learning Course (MLC#) Audit Course			
Course Code	230GCSB206_05	230GCSB207_05	230GAIB101_05
Course Name	Robotic Process Automation	Selenium Automation	Gen AI
Course Code	230GCSB208_05	230GCSB209_05	230GDSB120_05
Course Name	Agile Software Development	Jira and Git	Data Analytics with Python and Power BI
Course Code	230UPOB02_07		
Course Name	Introduction to Indian Constitution		



Prof. Anupama Budhewar

Programme Coordinator, BTech-DS



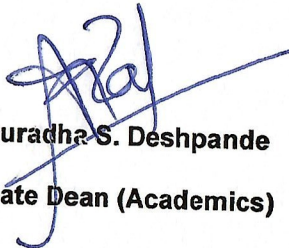
Prof. G. A. Patil

Director, School of Computational Sciences



Prof. R. S. Deshpande

Dean, Faculty of Science and Technology



Dr. Anuradha S. Deshpande

Associate Dean (Academics)




Prof. B. B. Ahuja

Vice Chancellor, JSPM University Pune



JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF COMPUTATIONAL SCIENCES

COURSE STRUCTURE (NEP 2020 Aligned)

W.E. F

2025-2026

RELEASE DATE

01/07/2025

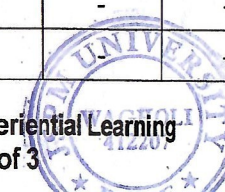
THIRD YEAR BACHELOR OF TECHNOLOGY (REGULAR)
(COMPUTER SCIENCE AND ENGINEERING - DS)

REVISION NO.

0.0 (NEP)

SEMESTER VI (LEVEL 5.5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100/25 Marks)			END SEMESTER EXAMINATION (100 / 75/50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PCC	230GCSB83_06	Data Mining Techniques	2	-	-	2	30	30	40	50	-	-	-	-	100	2.5
	240GDSB03_06	Reinforcement Learning for Data Science	3	-	-	-	30	30	40	50	-	-	-	-	100	3
	230GCSB28_06	Database Management Systems	2	-	-	2	30	30	40	50	-	-	-	-	50	2
PEC	---	Programme Elective Course	3	-	-	-	25			75	-	-	-	-	100	3
AEC	230UENB03_06	Soft Skill Development	1	-	2	-	30	30	40	50	-	-	-	-	50	2
HSSM	230UEEB19_06	Engineering Economics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
MMC	---	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
VSC	230IESB03_06	Entrepreneurship	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
LC	240GDSB04_06	Reinforcement Learning for Data Science Lab	-	-	2	-	-	-	-	-	-	-	50	50	50	1
	230GCSB35_06	Database Management Systems Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
IITP/F P/CEP	230GCSB16_06	Internship/ Field Project / Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	50	50	50	2
TOTAL			15	-	8	6									750	22
DSH	230GDSB100_06	Big Data Analytics	3	-	-	-	30	30	40	100	-	-	-	-	100	3
LC	230GDSB105_06	Big Data Analytics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
MLC#	---	Audit Course	1	-	-	-	-	-	-	50	-	-	-	-	50	1



Programme Elective Course (PEC)			
Course Code	230GCSB210_05	230GCSB211_05	230GCSB212_05
Course Name	Foundations of Virtual Reality (NPTEL_MOOC)	Artificial Intelligence: Concepts and Techniques (NPTEL_MOOC)	Cyber Security and Privacy (NPTEL_MOOC)
Course Code	230GCSB213_06	230GCSB214_06	230GCSB215_06
Course Name	(NPTEL_MOOC)	(NPTEL_MOOC)	(NPTEL_MOOC)

Multidisciplinary Minor Course (MMC)			
Course Code	230GMTB01_03	230GETB09_04	230GRAB55_03
Course Name	Sensors and Actuators	Wireless Sensor Network	Industrial Robots
Course Code	230GETB36_04	230VBCB09_04	230VBF04_03
Course Name	Microcontroller and Applications	Financial Literacy	Digital Banking
Course Code	230GETB41_05	230VBF02_04	230GRAB53_04
Course Name	Introduction to Embedded Systems	Basics of Stock Market	Robot Operating Systems
Course Code	230GETB34_06	230VBCB08_04	230GMTB52_04
Course Name	IoT and Applications	Software for Financial Accounting	Autotronics

