



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 Basic and Applied Sciences



NEP aligned Curriculum Structure

For

**B.Sc. (DATA SCIENCE AND
ARTIFICIAL INTELLIGENCE)**

(Effective from AY: 2023-24)



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF BASIC AND APPLIED SCIENCES

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2023-2024

RELEASE DATE

01/07/2023

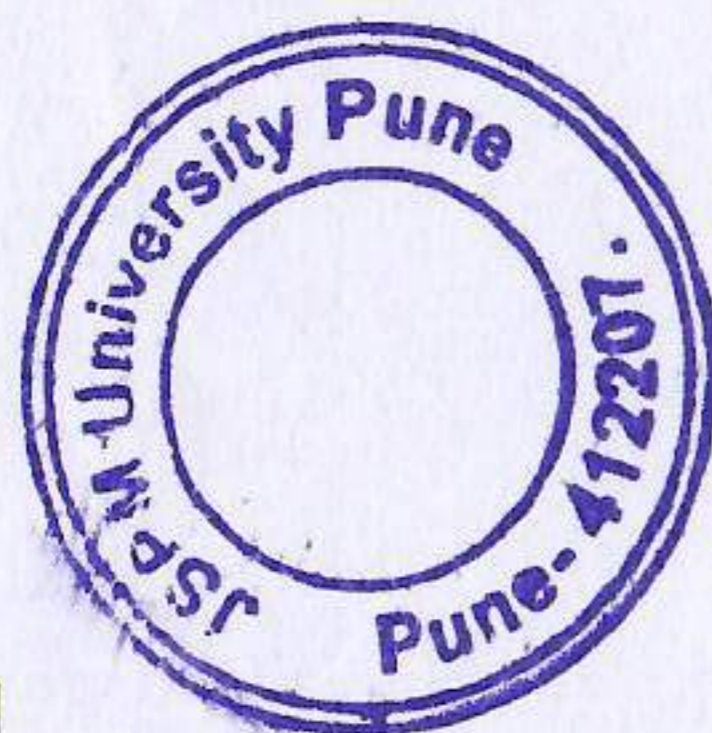
FIRST YEAR BACHELOR OF SCIENCE IN DATA SCIENCE
AND ARTIFICIAL INTELLIGENCE

REVISION NO.

0.0 (NEP)

SEMESTER I (LEVEL 4.5)

| 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 | 230GMAB04_01 | Applied Statistics | 2 | 1 | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 |
| | 230GMAB02_01 | Discrete Mathematics | 2 | 1 | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 |
| PCC | 230GDIB01_01 | Fundamentals of Computer Programming using Python | 3 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 |
| | 230GSCB02_01 | Database Management Systems | 2 | - | - | 2 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2.5 |
| SEC | 230VBCB09_01 | Financial Literacy | 2 | - | 2 | - | - | - | - | - | 50 | 50 | 50 | 50 | 100 | 3 |
| IKS (HSMC) | 230UHIB02_01 | Wisdom through Ancient Indian History | 2 | - | - | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 |
| VEC (HSMC) | 230GCEB02_01 | Environment and Sustainability | 2 | - | - | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 |
| LC | 230GDIB02_01 | Python Programming Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 |
| | 230GSCB04_01 | Database Management Systems Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 |
| LLC | 230UPYB01_01 | Yoga and Fitness | - | - | 2 | 2 | - | - | - | - | 50 | 50 | - | - | 50 | 1.5 |
| TOTAL | | | 15 | 2 | 8 | 4 | | | | | | | | | 750 | 22 |



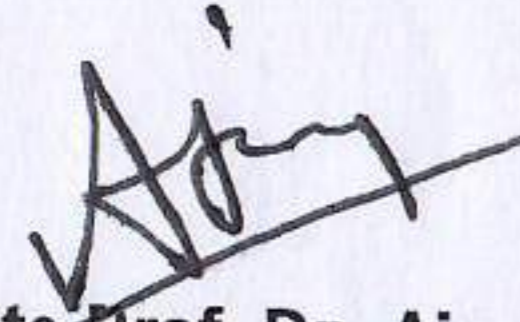
Oral

Note: A Certificate will be awarded if a student exits after first year.

For "Exit" at the end of First 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 2 internship of minimum 4 weeks.

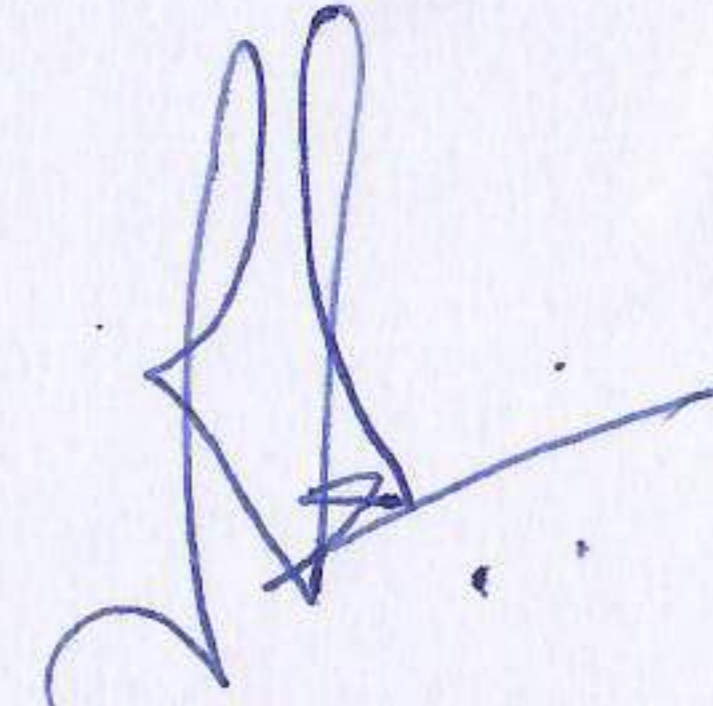
b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project).



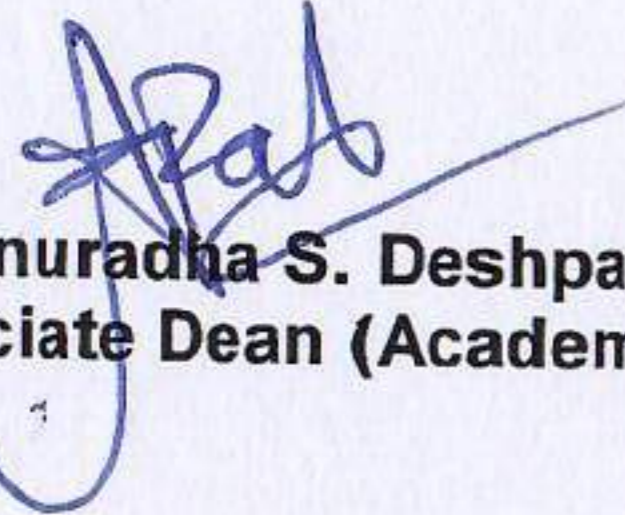
Associate Prof. Dr. Ajay D. Nagne
Coordinator, B.Sc. DSAI



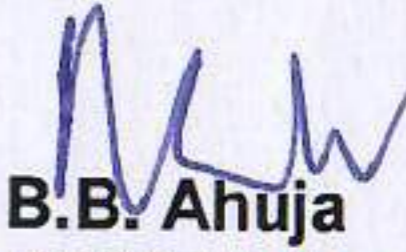
Dr. G. A. Patil
Director, School of Computational Sciences



Dr. 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

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W. E. F

2023-2024

RELEASE DATE

01/07/2023

FIRST YEAR BACHELOR OF SCIENCE IN
(DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)

REVISION NO.

0.0 (NEP)

SEMESTER II (LEVEL 4.5)

| 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 (50marks) | END SEMESTER EXAMINATION (50 marks) | CONTINUOUS INSEMESTER EVALUATION (50marks) | END SEMESTER EXAMINATION (50 marks) | | | |
| | | | | | | | T1 (30 Marks) | T2 (30 Marks) | Assignments (40 Marks) | | | | | | | | |
| BSC | 230GMAB05_02 | Basic Calculus | 2 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2 | |
| PCC | 230GDIB03_02 | Programming in C | 3 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 | |
| | 230GSCB06_02 | Relational Database Management Systems | 2 | 1 | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 50 | 3 | |
| MDM | --- | Multi-Disciplinary Minor | 2 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2 | |
| SEC | 230VBCB10_02 | Advanced Excel | 2 | - | 2 | - | - | - | - | - | 50 | 50 | 50 | 50 | 100 | 3 | |
| VSC | 230IDCB01_02 | Design Thinking and Creativity | 1 | - | - | 2 | - | - | - | - | - | - | 50 | 50 | 50 | 1.5 | |
| AEC (HSMC) | 230UENB01_02 | Effective Communication Skills | 1 | - | 2 | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 | |
| LC | 230GSCB03_02 | C Programming Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 | |
| | 230GSCB07_02 | Relational Database Management Systems Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 | |
| LLC | 230UPYB02_02 | Mind Fullness and Well-being | 1 | - | - | 2 | - | - | - | - | - | - | 50 | 50 | 50 | 1.5 | |
| IITP/FP/CEP | 230GDIB04_02 | Internship / Field Project / Community Engagement Programme | 4 to 6 weeks | | | | - | - | - | - | - | - | - | 50 | 50 | 50 | 2 |
| TOTAL | | | 14 | 1 | 8 | 4 | | | | | | | | | 750 | 22 | |

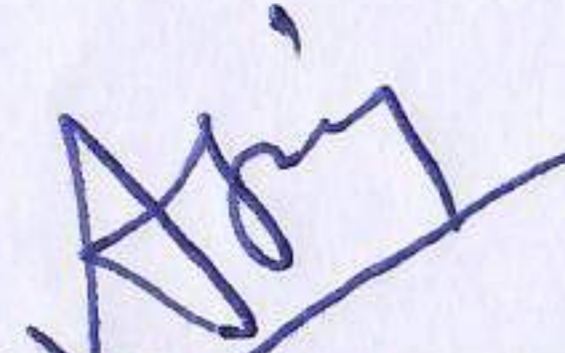
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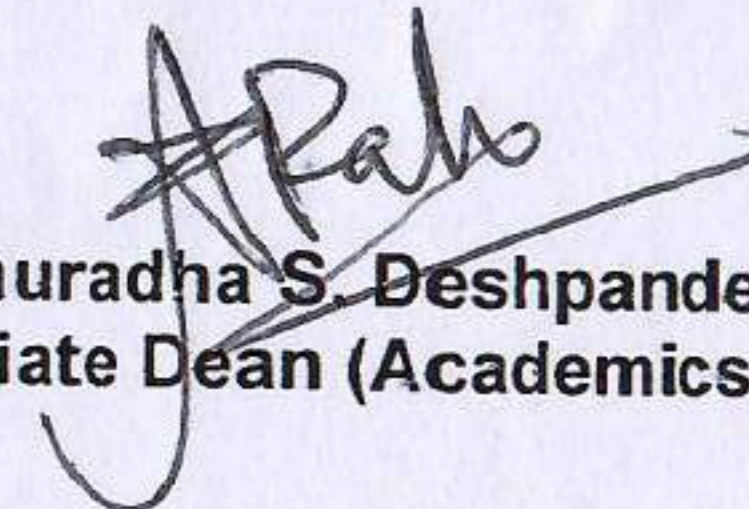
b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project).


| Sem. | Multi-Disciplinary Minor (MDM) | |
|------|--------------------------------|---|
| | Specialization | IoT and Application |
| III | Course Code | 230VBBB42_02 |
| | Course Name | Introduction to Human Resource management |
| | Course Code | 230GETB58_03 |
| | Course Name | Sensors and Interfacing |
| | Course Code | 230GETB59_03 |
| | Course Name | Sensors and Interfacing Lab |
| IV | Course Code | 230GETB60_04 |
| | Course Name | Foundations of IoT |
| | Course Code | 230GETB61_04 |
| | Course Name | Foundations of IoT Lab |
| V | Course Code | 230GETB62_05 |
| | Course Name | Wireless Technologies for IoT |
| | Course Code | 230GETB63_05 |
| VI | Course Name | Wireless Technologies for IoT Lab |
| | Course Code | 230GETB64_06 |
| | Course Name | Industrial Internet of Things |


Associate Prof. Dr. Ajay D. Nagne
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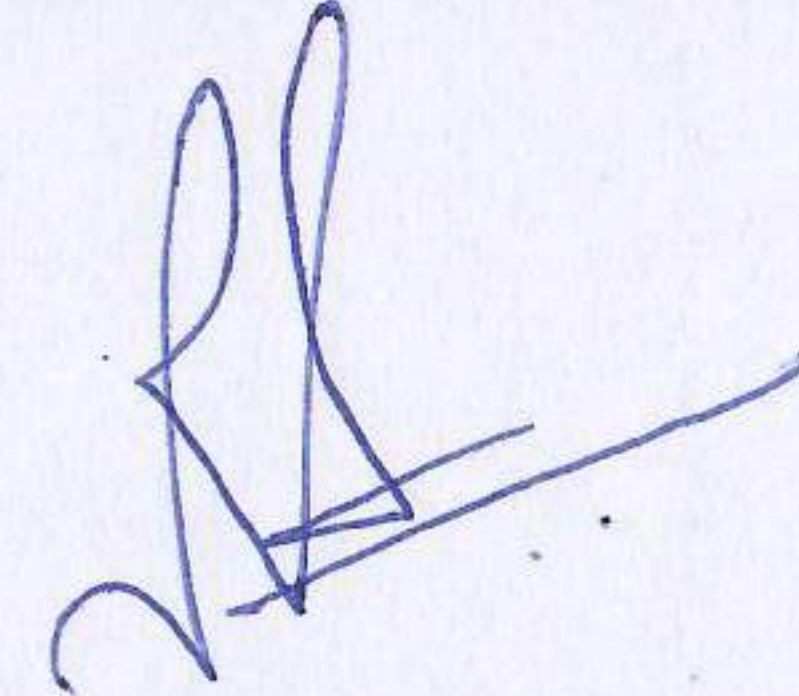
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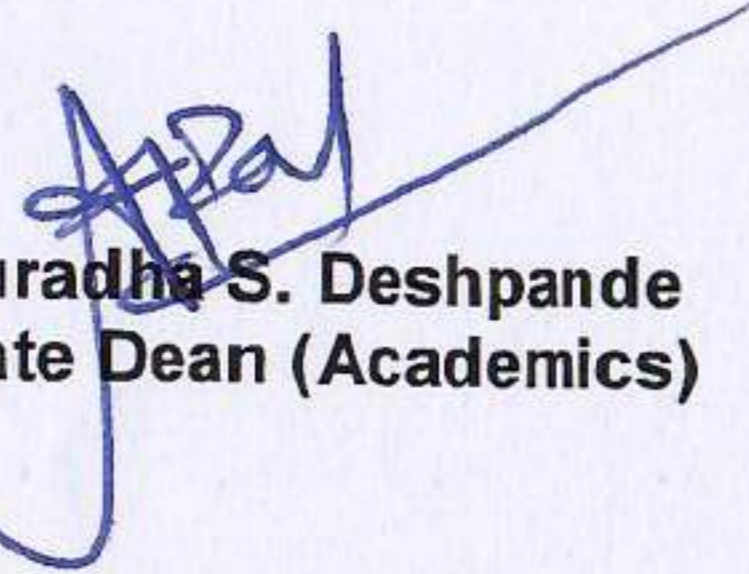
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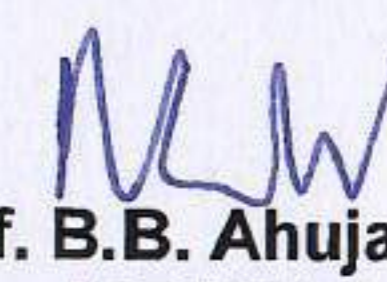
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SCHOOL OF BASICS AND APPLIED SCIENCES

SECOND YEAR BACHELOR OF SCIENCE
(DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)

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(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

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 | 230GMAB03_03 | Linear Algebra | 2 | 1 | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 |
| PCC | 230GDIB05_03 | Data Structures Using Python | 3 | - | - | 2 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3.5 |
| | 230GDIB06_03 | Basics of Artificial Intelligence and Machine Learning | 2 | - | - | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 |
| AEC | 230UENB02_03 | Communicative Proficiency Skills | 1 | - | 2 | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 |
| MDM | --- | Multi-Disciplinary Minor | 2 | - | - | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 |
| IOC | --- | Interdisciplinary Open Course | 2 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2 |
| SEC | 230GCAB06_03 | Programming with C++ | 2 | - | 2 | - | - | - | - | - | 50 | 50 | 50 | 50 | 100 | 3 |
| LC | 230GDIB07_03 | Data Structure using Python Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 |
| | --- | Multi-Disciplinary Minor Lab | - | - | 2 | 4 | - | - | - | - | 50 | 50 | - | - | 50 | 2 |
| LLC | 230HFSB80_03 | Health and Nutrition | 1 | - | - | 2 | - | - | - | - | - | - | 50 | - | 50 | 1.5 |
| TOTAL | | | 15 | 1 | 8 | 8 | | | | | | | | | 700 | 22 |

L-Lecture

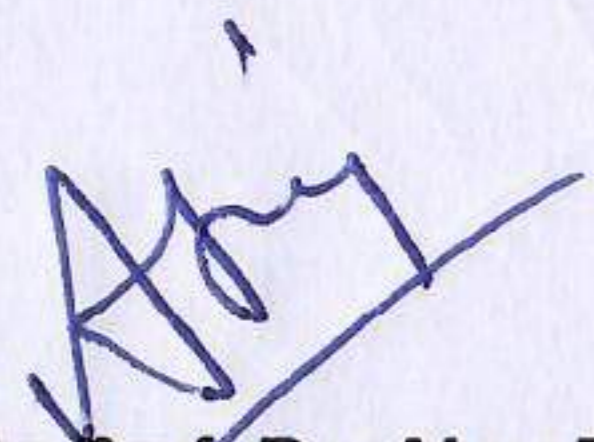
T-Tutorial


P-Practical Session (Laboratory)


EL-Experiential Learning

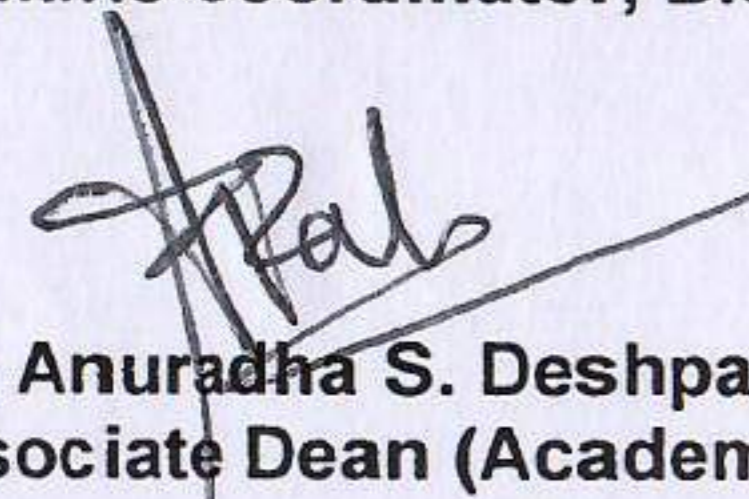
| Multi-Disciplinary Minor (MDM) | | |
|--------------------------------|----------------|---|
| Sem. | Specialization | IoT and Application |
| III | Course Code | 230VBBB42_02 |
| | Course Name | Introduction to Human Resource management |
| | Course Code | 230GETB58_03 |
| | Course Name | Sensors and Interfacing |
| | Course Code | 230GETB59_03 |
| | Course Name | Sensors and Interfacing Lab |
| IV | Course Code | 230GETB60_04 |
| | Course Name | Foundations of IoT |
| | Course Code | 230GETB61_04 |
| | Course Name | Foundations of IoT Lab |
| V | Course Code | 230GETB62_05 |
| | Course Name | Wireless Technologies for IoT |
| | Course Code | 230GETB63_05 |
| VI | Course Code | 230GETB64_06 |
| | Course Name | Industrial Internet of Things |

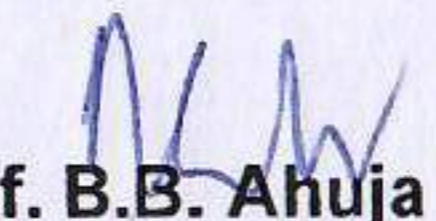
| Interdisciplinary Open Course (IOC) | |
|-------------------------------------|-------------------------------------|
| Course Code | 240GPHB03_02 |
| Course Name | Semiconductor Physics |
| Course Code | 230GETB29_03 |
| Course Name | Fundamentals of Digital Electronics |
| Course Code | 240VBBB06_4 |
| Course Name | Introduction to Digital Marketing |
| Course Code | 230VBCB14_5 |
| Course Name | E-Commerce |


Associate Prof. Dr. Ajay D. Nagne
Programme Coordinator, B.Sc. DSA


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2024-2025

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REVISION NO.

0.0 (NEP)

SEMESTER IV (LEVEL 5)

| COURSE | | TEACHING SCHEME | EXAMINATION SCHEME AND MARKS | | | | | | | | | | | | C R E D I T S | | |
|--------------|--------------|---|------------------------------|----------|----------|----------|---|------------------|---------------------------|--|--|--|---|--|---------------------------------|-----------------------|-----|
| 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) | | | T O T A L | |
| | | | L | T | P | EL | CONTINUOUS INSEMESTER EVALUATION (100 Marks) | | | END SEMESTER EXAMINATION (100 / 50 marks) | CONTINUOUS INSEMESTER EVALUATION (50marks) | END SEMESTER EXAMINATION (50 marks) | CONTINUOUS INSEMESTER EVALUATION (50marks) | END SEMESTER EXAMINATION (50 marks) | | | |
| | | | | | | | T1 (30 Marks) | T2 (30 Marks) | Assignments (40 Marks) | | | | | | | | |
| PCC | 230GDIB08_04 | Basics of Programming for Data Science | 3 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 | |
| | 231GCAB13_04 | Computer Network and Internet Protocol (NPTEL) | 3 | - | - | - | 25 | | | 75 | - | - | - | - | 100 | | |
| AEC | 230UENB03_04 | Soft Skill Development | 1 | - | 2 | - | 30 | 30 | 40 | 50 | - | - | - | - | 100 | 3 | |
| VEC | 230UPYB03_04 | Ethics and Moral Values | 2 | - | - | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 | |
| MDM | --- | Multi-Disciplinary Minor | 2 | - | - | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 | |
| IOC | --- | Interdisciplinary Open Course | 2 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 50 | 2 | |
| VSC | 230IINB02_04 | Innovation | 1 | - | - | 2 | - | - | - | - | - | - | - | 100 | 2 | | |
| LC | 230GDIB09_04 | R Programming Lab | - | - | 2 | - | - | - | - | - | - | - | 50 | 50 | 50 | 1.5 | |
| | --- | Multi-Disciplinary Minor Lab | - | - | 2 | 4 | - | - | - | - | 50 | 50 | - | - | 50 | 1 | |
| LLC | 240VBBB02_04 | Theatre and Performing Arts | - | - | 2 | 2 | - | - | - | - | - | - | 50 | 50 | 50 | 2 | |
| IITP/FP/CEP | 230GDIB10_04 | Internship / Field Project / Community Engagement Programme | (4 to 6 Weeks) | | | | - | - | - | - | - | - | - | 50 | 50 | 50 | 1.5 |
| TOTAL | | | 14 | - | 8 | 8 | | | | | | | | | 50 | 2 | |
| 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:01/07/2024

EL-Experiential Learning
Page 1 of 2

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

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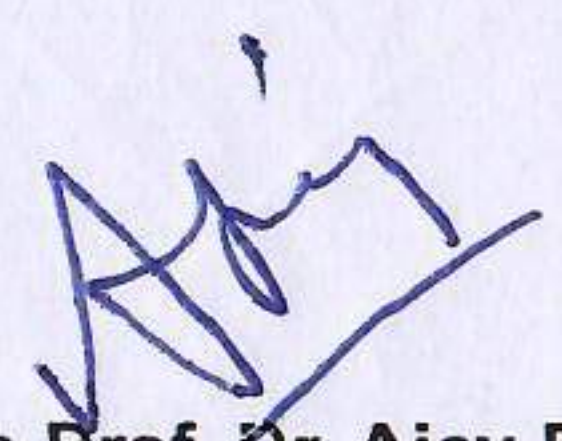
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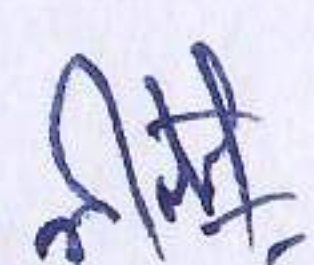
b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project).

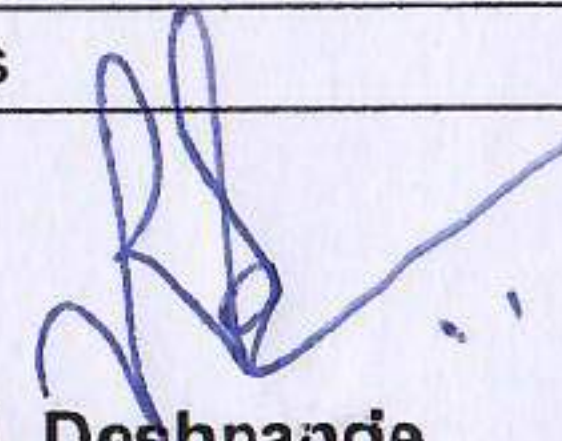
| Sem. | Multi-Disciplinary Minor (MDM) | |
|------|--------------------------------|---|
| | Specialization | IoT and Application |
| II | Course Code | 230VBBB42_02 |
| | Course Name | Introduction to Human Resource management |
| III | Course Code | 230GETB58_03 |
| | Course Name | Sensors and interfacing |
| | Course Code | 230GETB59_03 |
| IV | Course Name | Sensors and Interfacing Lab |
| | Course Code | 230GETB60_04 |
| | Course Name | Foundations of IoT |
| V | Course Code | 230GETB61_04 |
| | Course Name | Foundations of IoT Lab |
| | Course Code | 230GETB62_05 |
| VI | Course Name | Wireless Technologies for IoT |
| | Course Code | 230GETB63_05 |
| VI | Course Name | Wireless Technologies for IoT Lab |
| | Course Code | 230GETB64_06 |
| VI | Course Name | Industrial Internet of Things |
| | Course Code | |

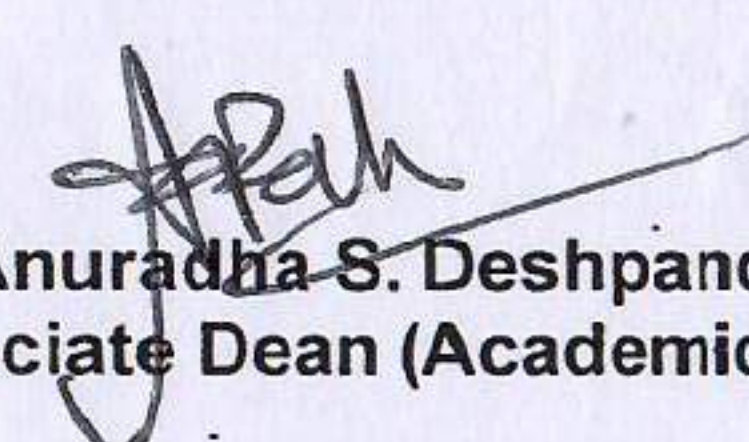
| Interdisciplinary Open Course (IOC) | |
|-------------------------------------|-------------------------------------|
| Course Code | 230VBBB03 |
| Course Name | Essentials of Management |
| Course Code | 230GETB29 |
| Course Name | Fundamentals of Digital Electronics |
| Course Code | 230VBBB06 |
| Course Name | Essentials of Management |
| Course Code | 240VBBB06_04 |
| Course Name | Introduction to Digital Marketing |

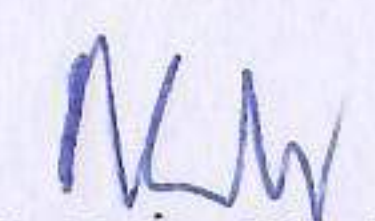
| Mandatory Learning Course (MLC#) Audit Course | |
|---|-------------------------------------|
| Course Code | 230UPOB02_04 |
| Course Name | Introduction to Indian Constitution |
| Course Code | 240GCAB131_05 |
| Course Name | German Language |
| Course Code | 240GSCB131_06 |
| Course Name | Salesforce Admin 201 |
| Course Code | 240GSCB132_07 |
| Course Name | Testing Automation Tools |


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THIRD YEAR BACHELOR OF SCIENCE
(DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)

REVISION NO.

0.0 (NEP)

SEMESTER V (LEVEL 5.5)

| COURSE | | | TEACHING SCHEME | | | | EXAMINATION SCHEME AND MARKS | | | | | | | | | | C R E D I T S |
|--------------|--------------|------------------------------------|-----------------|----------|----------|----------|---|------------------|---------------------------|--|--|--|---|--|-----------------------|-----------|---------------------------------|
| 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) | | T O T A L | | |
| | | | 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 (50marks) | END SEMESTER EXAMINATION (50 marks) | | | |
| | | | | | | | T1 (30 Marks) | T2 (30 Marks) | Assignments (40 Marks) | | | | | | | | |
| PCC | 230GSCB16_05 | Java | 3 | - | - | 2 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3.5 | |
| PCC | 230GDIB17_05 | Google Analytics | 3 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 | |
| PEC | --- | Program Elective Course I | 3 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 | |
| AEC | 230UENB04_05 | Verbal Aptitude through Literature | 1 | - | 2 | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 | |
| MDM | --- | Multi-Disciplinary Minor | 2 | - | - | - | 30 | 30 | 40 | 50 | - | - | - | - | 50 | 2 | |
| IOC | --- | Interdisciplinary Open Course | 2 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2 | |
| VSC | 230IESB03_05 | Entrepreneurship | 1 | - | - | 2 | - | - | - | - | - | - | 50 | 50 | 50 | 1.5 | |
| LC | 230GSCB18_05 | Java Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 | |
| LC | --- | Multi-Disciplinary Minor Lab | - | - | 2 | 4 | - | - | - | - | 50 | 50 | - | - | 50 | 2 | |
| TOTAL | | | 15 | - | 6 | 8 | | | | | | | | | 650 | 20 | |
| MLC# | --- | Audit Course | 1 | - | - | - | - | - | - | 50 | - | - | - | - | 50 | 1 | |

L-Lecture

T-Tutorial

P-Practical Session (Laboratory)

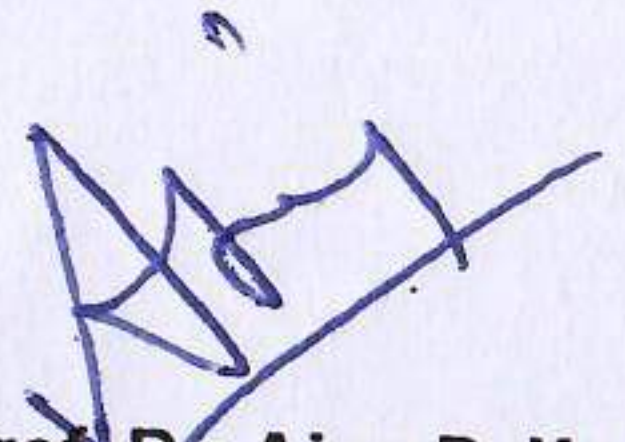
| Sem. | Program Elective Course (PEC) | | | | |
|------|-------------------------------|---------------------------------------|-----------------------------------|----------------------------------|-----------------------------|
| | Specialization | Cyber Security | Computer Networking | Software Development and Testing | Data Science |
| V | Course Code | 230GSCB71_05 | 230GSCB75_05 | 230GSCB79_05 | 230GSCB83_05 |
| | Course Name | Principles of Cyber Security | Advanced Networking | Software Analysis and Design | Data Visualization |
| VI | Course Code | 230GSCB72_06 | 230GSCB76_06 | 230GSCB80_06 | 230GSCB84_06 |
| | Course Name | Cyber Law | Cryptography and Network Security | Software Testing | Data Analytics |
| VII | Course Code | 230GSCB73_07 | 230GSCB77_07 | 230GSCB81_07 | 230GSCB85_07 |
| | Course Name | Internet and web Application Security | Network Programming | Automated Testing using Selenium | Data Warehousing and Mining |
| VIII | Course Code | 230GSCB74_08 | 230GSCB78_08 | 230GSCB82_08 | 230GSCB86_08 |
| | Course Name | Domain Specific MOOCs Course | Domain Specific MOOCs Course | Domain Specific MOOCs Course | Big Data Analytics |

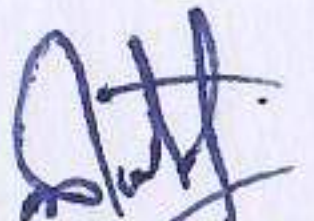
| Interdisciplinary Open Course (IOC) | |
|-------------------------------------|-------------------------------------|
| Course Code | 240GPHB03_02 |
| Course Name | Semiconductor Physics |
| Course Code | 230GETB29_03 |
| Course Name | Fundamentals of Digital Electronics |
| Course Code | 240VBBB06_4 |
| Course Name | Introduction to Digital Marketing |
| Course Code | 230VBCB14_5 |
| Course Name | E-Commerce |


| Sem. | Multi-Disciplinary Minor (MDM) | |
|------|--------------------------------|---------------------------------|
| | Specialization | IoT and Application |
| III | Course Code | 230GETB58_03 |
| | Course Name | Sensors and Interfacing |
| | Course Code | 230GETB59_03 |
| | Course Name | Sensors and Interfacing Lab |
| IV | Course Code | 230GETB60_04 |
| | Course Name | Foundations of IoT |
| | Course Code | 230GETB61_04 |
| V | Course Name | Foundations of IoT Lab |
| | Course Code | 230GETB62_05 |
| | Course Name | Wireless Technology for IoT |
| VI | Course Code | 230GETB63_05 |
| | Course Name | Wireless Technology for IoT Lab |
| | Course Code | 230GETB64_06 |
| | Course Name | Internet of Things Security |

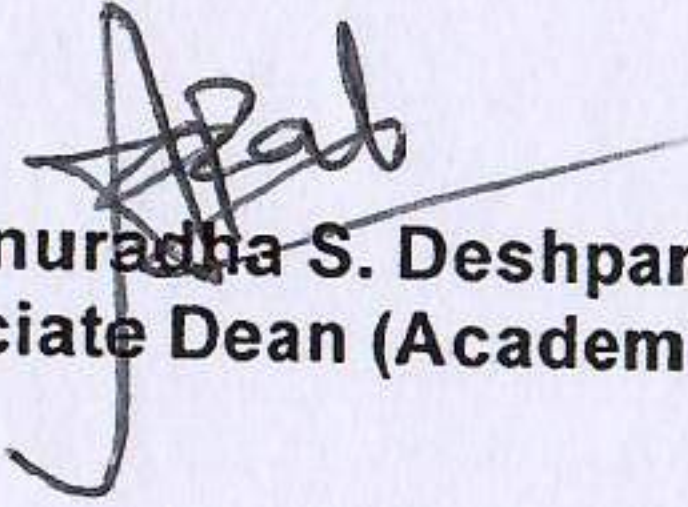


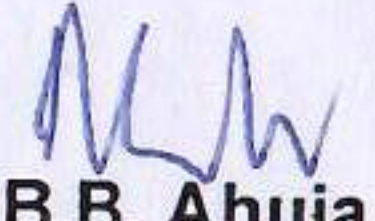
| Mandatory Learning Course (MLC#) Audit Course | |
|---|-------------------------------------|
| Course Code | 230UPOB02_04 |
| Course Name | Introduction to Indian Constitution |
| Course Code | 240GCAB131_05 |
| Course Name | German Language |
| Course Code | 240GSCB131_06 |
| Course Name | Salesforce Admin 201 |
| Course Code | 240GSCB132_07 |
| Course Name | Testing Automation Tools |


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Dr. G. A. Patil
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Dr. R. S. Deshpande
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Dr. Anuradha S. Deshpande
Associate Dean (Academics)


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

Vice Chancellor
JSPM University
Pune



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY
SCHOOL OF COMPUTATIONAL SCIENCES

COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

THIRD YEAR BACHELOR OF SCIENCE
(DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)

REVISION NO.

0.0 (NEP)

SEMESTER VI (LEVEL 5.5) SCHEME A

| COURSE | | TEACHING SCHEME | EXAMINATION SCHEME AND MARKS | | | | | | | | | | | | C R E D I T S | | |
|--------------|--------------|----------------------------|------------------------------|----------|----------|-----------|--|---------------|------------------------|---|--|-------------------------------------|--|-------------------------------------|---------------------------------|-----------------------|---|
| 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) | | | T O T A L | |
| | | | L | T | P | EL | CONTINUOUS INSEMESTER EVALUATION (100 Marks) | | | END SEMESTER EXAMINATION (100 / 50 marks) | CONTINUOUS INSEMESTER EVALUATION (50marks) | END SEMESTER EXAMINATION (50 marks) | CONTINUOUS INSEMESTER EVALUATION (50marks) | END SEMESTER EXAMINATION (50 marks) | | | |
| | | | | | | | T1 (30 Marks) | T2 (30 Marks) | Assignments (40 Marks) | | | | | | | | |
| PCC | 230GDIB19_06 | Data Mining | 2 | - | - | 2 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2.5 | |
| | 250GDIB05_06 | Full stack Development | 2 | - | - | 2 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2.5 | |
| PEC | --- | Program Elective Course II | 3 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 | |
| MDM | --- | Multi-Disciplinary Minor | 3 | - | - | 4 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 4 | |
| LC | 250GDIB06_06 | Full stack Development Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 | |
| | 230GSCB22_06 | Web Design Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 | |
| PROJ | 230GSCB23_06 | Project | - | - | 4 | 8 | - | - | - | - | 100 | 100 | 50 | 50 | 100 | 4 | |
| IITP/FP/CEP | 230GSCB24_06 | Internship | (4 to 6 Weeks) | | | | - | - | - | - | - | - | - | 50 | 50 | 50 | 2 |
| TOTAL | | | 10 | - | 8 | 16 | | | | | | | | | 650 | 20 | |
| MLC# | --- | Audit Course | 1 | - | - | - | - | - | - | - | 50 | - | - | - | 50 | 1 | |

L-Lecture

T-Tutorial

P-Practical Session (Laboratory)

| Sem. | Program Elective Course (PEC) | | | | |
|------|-------------------------------|---------------------------------------|-----------------------------------|----------------------------------|-----------------------------|
| | Specialization | Cyber Security | Computer Networking | Software Development and Testing | Data Science |
| V | Course Code | 230GSCB71_05 | 230GSCB75_05 | 230GSCB79_05 | 230GSCB83_05 |
| | Course Name | Principles of Cyber Security | Advanced Networking | Software Analysis and Design | Data Visualization |
| VI | Course Code | 230GSCB72_06 | 230GSCB76_06 | 230GSCB80_06 | 230GSCB84_06 |
| | Course Name | Cyber Law | Cryptography and Network Security | Software Testing | Data Analytics |
| VII | Course Code | 230GSCB73_07 | 230GSCB77_07 | 230GSCB81_07 | 230GSCB85_07 |
| | Course Name | Internet and web Application Security | Network Programming | Automated Testing using Selenium | Data Warehousing and Mining |
| VIII | Course Code | 230GSCB74_08 | 230GSCB78_08 | 230GSCB82_08 | 230GSCB86_08 |
| | Course Name | Domain Specific MOOCs Course | Domain Specific MOOCs Course | Domain Specific MOOCs Course | Big Data Analytics |

| Sem. | Multi-Disciplinary Minor (MDM) | |
|------|--------------------------------|---|
| | Specialization | IoT and Application |
| III | Course Code | 230VBBB42_02 |
| | Course Name | Introduction to Human Resource management |
| | Course Code | 230GETB58_03 |
| | Course Name | Sensors and Interfacing |
| | Course Code | 230GETB59_03 |
| | Course Name | Sensors and Interfacing Lab |
| IV | Course Code | 230GETB60_04 |
| | Course Name | Foundations of IoT |
| | Course Code | 230GETB61_04 |
| V | Course Name | Foundations of IoT Lab |
| | Course Code | 230GETB62_05 |
| | Course Name | Wireless Technology for IoT |
| VI | Course Code | 230GETB63_05 |
| | Course Name | Wireless Technology for IoT Lab |
| | Course Code | 230GETB64_06 |
| | Course Name | Industrial Internet of Things |

| Mandatory Learning Course (MLC#) Audit Course | |
|---|-------------------------------------|
| Course Code | 230UPOB02_04 |
| Course Name | Introduction to Indian Constitution |
| Course Code | 240GCAB131_05 |
| Course Name | German Language |
| Course Code | 240GSCB131_06 |
| Course Name | Salesforce Admin 201 |
| Course Code | 240GSCB132_07 |
| Course Name | Testing Automation Tools |



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF COMPUTATIONAL SCIENCES

COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

FIRST YEAR BACHELOR OF COMPUTER SCIENCE

REVISION NO.

0.0 (NEP)

SEMESTER VI (LEVEL 5.5) SCHEME B

| 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 (50marks) | END SEMESTER EXAMINATION (50 marks) | CONTINUOUS INSEMESTER EVALUATION (50marks) | END SEMESTER EXAMINATION (50 marks) | | |
| | | | | | | | T1 (30 Marks) | T2 (30 Marks) | Assignments (40 Marks) | | | | | | | |
| PCC | 230GDIB19_06 | Data Mining | 2 | - | - | 2 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2.5 |
| | 250GDIB05_06 | Full stack Development | 2 | - | - | 2 | 30 | 30 | 40 | 100 | - | - | - | - | | |
| PEC | --- | Program Elective Course II | 3 | - | - | - | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 2.5 |
| MDM | --- | Multi-Disciplinary Minor | 3 | - | - | 4 | 30 | 30 | 40 | 100 | - | - | - | - | 100 | 3 |
| LC | 250GDIB06_06 | Full stack Development Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 |
| | 230GSCB22_06 | Web Design Lab | - | - | 2 | - | - | - | - | - | 50 | 50 | - | - | 50 | 1 |
| PROJ | 230GSCB25_06 | Project | - | - | 6 | 12 | - | - | - | - | 100 | 100 | 50 | 50 | 150 | 6 |
| TOTAL | | | 10 | - | 8 | 20 | | | | | | | 50 | 50 | 650 | 20 |
| MLC# | --- | Audit Course | 1 | - | - | - | - | - | - | - | 50 | - | - | - | 50 | 1 |

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.

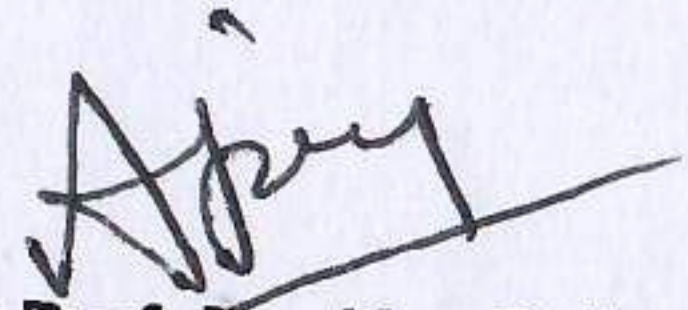
a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 4 internship of minimum 4 weeks.

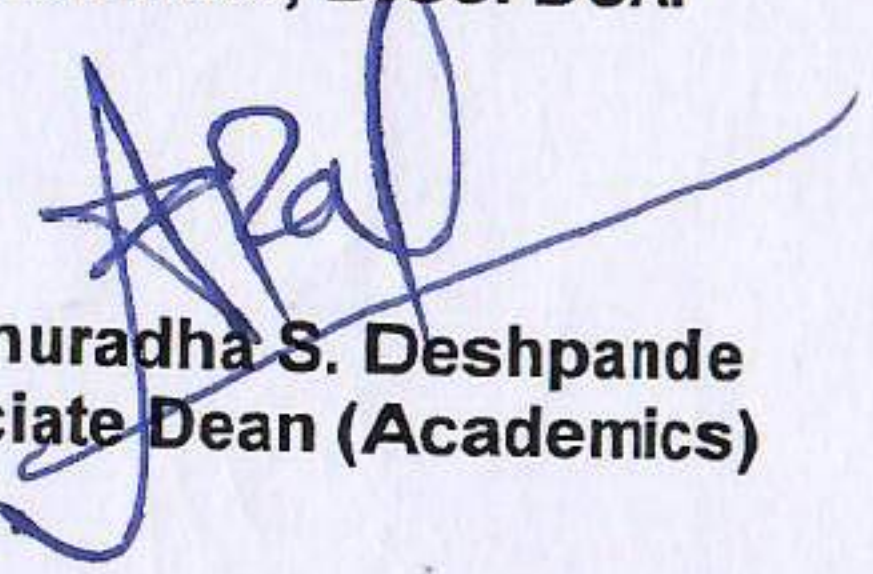
b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project).


| Sem. | Multi-Disciplinary Minor (MDM) | |
|------|--------------------------------|---|
| | Specialization | IoT and Application |
| II | Course Code | 230VBBB03_02 |
| | Course Name | Essentials of Human Resource Management |
| III | Course Code | 230GETB58_03 |
| | Course Name | Sensors and Interfacing |
| | Course Code | 230GETB59_03 |
| IV | Course Name | Sensors and Interfacing Lab |
| | Course Code | 230GETB60_04 |
| | Course Name | Foundations of IoT |
| V | Course Code | 230GETB61_04 |
| | Course Name | Foundations of IoT Lab |
| | Course Code | 230GETB62_05 |
| VI | Course Name | Wireless Technologies for IoT |
| | Course Code | 230GETB63_05 |
| | Course Name | Wireless Technologies for IoT Lab |
| VI | Course Code | 230GETB64_06 |
| | Course Name | Internet of Things Security |

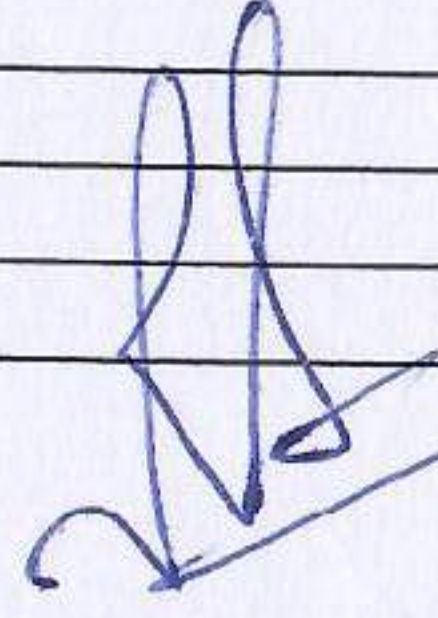
| Interdisciplinary Open Course (IOC) | |
|-------------------------------------|-------------------------------------|
| Course Code | 230VBBB03 |
| Course Name | Essentials of Management |
| Course Code | 230GETB29 |
| Course Name | Fundamentals of Digital Electronics |
| Course Code | 230VBBB06 |
| Course Name | Essentials of Management |
| Course Code | 240VBBB06_04 |
| Course Name | Introduction to Digital Marketing |

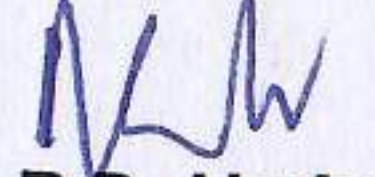
| Mandatory Learning Course (MLC#) Audit Course | |
|---|-------------------------------------|
| Course Code | 230UPOB02_04 |
| Course Name | Introduction to Indian Constitution |
| Course Code | 240GCAB92_05 |
| Course Name | German Language |
| Course Code | 240GSCB131_06 |
| Course Name | Salesforce Admin 201 |
| Course Code | 240GSCB132_07 |
| Course Name | Testing Automation Tools |


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