

Symbiosis Institute of Technology, Pune
Bachelor of Technology (Robotics and Artificial Intelligence)
Programme Structure 2026-30
Annexure A



Semester : 1

Generic Core Courses

| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---------------------|-------------|------------------------------------------------------|--------|----------------------------------|----------------------------------|----------|----------|----------------------------|-----------|------------|------------|---------------|------------|
| | | | | | L | T | La b | Practical | | Theory | | | |
| | | | | | | | | CA | ESE | CA | ESE | | |
| TEE7237 | 0701340101 | Calculus | BS | | 3 | 1 | 0 | 0 | 0 | 40 | 60 | 4 | 100 |
| TEE7357 | 0701340102 | Programming for Engineers | ES | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P6128 | 0701340103 | Fundamentals of AI | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| P6118 | 0701340104 | Principles of Electrical and Electronics Engineering | ES | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P6127 | 0701340105 | Introduction to Robotics | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7342 | 0701340106 | Biophysics and Mechanics | ES | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| Total | | | | | 12 | 1 | 8 | 60 | 40 | 130 | 195 | 17 | 425 |

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|-------------------------------|-------------|-------------------------------------------------|--------|----------------------------------------|-------------------------------------|----------|-----------|-------------------------------|-----------|-----------|------------|---------------|------------|
| | | | | | L | T | La b | Practical | | Theory | | | |
| | | | | | | | | CA | ESE | CA | ESE | | |
| Semester : 2 | | | | | | | | | | | | | |
| Generic Core Courses | | | | | | | | | | | | | |
| TEE7255 | 0701340201 | Linear Algebra | BS | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| TEE7257 | 0701340202 | Statistics for Data Science | BS | | 3 | 1 | 0 | 0 | 0 | 40 | 60 | 4 | 100 |
| P6129 | 0701340203 | Robotics Sensors and Actuators | PC | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| P6130 | 0701340204 | Python Essentials | PC | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| TEE7034 | 0701340205 | Data Preprocessing and EDA Lab | PC | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| THM6150 | 0701340206 | Technical and Professional Communication Skills | HSMC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| T6732 | 0701340207 | Critical Thinking | HSMC | | 1 | 0 | 0 | 0 | 0 | 10 | 15 | 1 | 25 |
| Total Required Credits | | | | | 6 | 2 | 14 | 105 | 70 | 80 | 120 | 15 | 375 |

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|-----------------------------|-------------|----------------------------------------------|--------|----------------------------------|----------------------------------|---|---------|----------------------------|-----|--------|-----|---------------|-------|
| | | | | | L | T | La b | Practical | | Theory | | | |
| | | | | | | | | CA | ESE | CA | ESE | | |
| Semester: 3 | | | | | | | | | | | | | |
| Generic Core Courses | | | | | | | | | | | | | |
| TEE7254 | 0701340301 | Discrete Mathematics | BS | | 2 | 0 | 0 | 0 | 0 | 20 | 30 | 2 | 50 |
| P6132 | 0701340302 | Supervised and Unsupervised Machine Learning | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| P5728 | 0701340303 | Robotic Control Systems | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P6133 | 0701340304 | Data Structures and Algorithmic Techniques | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P5779 | 0701340305 | Hydraulic and Pneumatic Systems | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7401 | 0701340306 | Total Productive Maintenance | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| TEE7407 | 0701340307 | Mechatronics | PC | | 1 | 0 | 0 | 0 | 0 | 10 | 15 | 1 | 25 |
| P5930 | 0701340308 | Mechatronics Lab | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |

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|-------------------------------|------------|--------------------------------|------|--|-----------|----------|-----------|------------|-----------|------------|------------|-----------------------------|------------|
| P4411 | 0701340309 | Principles of Economics | HSMC | | 1 | 0 | 0 | 0 | 0 | 10 | 15 | 1 | 25 |
| P4781 | 0701340310 | Career Essentials - II * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| TH4788 | 0701340311 | Health and Wellness Module I # | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Required Credits | | | | | 12 | 0 | 14 | 105 | 70 | 120 | 180 | 19 | 475 |

| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|-----------------------------|-------------|----------------------------------|--------|----------------------------------------|----------------------------------|---|-----|----------------------------|-----|--------|-----|---------------|-------|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| Semester : 4 | | | | | | | | | | | | | |
| Generic Core Courses | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| TE7699 | 0701340401 | Probability and Random Processes | BS | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4350 | 0701340402 | Robot Kinematics and Dynamics | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7397 | 0701340403 | Servo Motors and Drives | PC | | 1 | 0 | 0 | 0 | 0 | 10 | 15 | 1 | 25 |

| | | | | | | | | | | | | | |
|----------------------------------------------------------------|------------|-----------------------------------------------------------|------|-----------------|-----------|----------|-----------|------------|-----------|------------|------------|-----------------------------|------------|
| TEE7398 | 0701340404 | Servo Motors and Drives Lab | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| P5735 | 0701340405 | Process Control and Instrumentation | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| P5733 | 0701340406 | Programmable Logic Controller and Human Machine Interface | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| P4618 | 0701340407 | Service Learning | HSMC | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| T2646 | 0701340408 | Entrepreneurship Venture | HSMC | | 1 | 0 | 0 | 0 | 0 | 10 | 15 | 1 | 25 |
| P4782 | 0701340409 | Career Essentials - III * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| TH4789 | 0701340410 | Health and Wellness Module II # | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | | | | 10 | 1 | 16 | 120 | 80 | 110 | 165 | 19 | 475 |
| Multidisciplinary Open Elective (Choose any one course) | | | | | | | | | | | | | |
| P5208 | 0701340411 | Quantum Computing for Engineers | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5209 | 0701340412 | Mathematics for Data Science | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4627 | 0701340413 | Smart Cities Planning and Management | MOPE | Civil | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4633 | 0701340414 | Intelligent Waste Management Techniques | MOPE | Civil | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4811 | 0701340415 | Web Technologies | MOPE | CSE | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4812 | 0701340416 | Data Science | MOPE | CSE | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| TEE7018 | 0701340417 | Engineering Simulation and Modelling Tools | MOPE | ENTC | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4278 | 0701340418 | Medical Electronics | MOPE | ENTC | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| TE7351 | 0701340419 | 3D Printing and Prototyping | MOPE | Mechanical | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5275 | 0701340420 | Battery Management Systems | MOPE | Mechanical | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |

| P4787 | 0701340421 | Fundamentals of Machine Learning | MOPE | AIML | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
|-------------------------------|-------------|----------------------------------|--------|-----------------------------------------------------|----------|----------|----------|-----------|-----------|-----------|-----------|----------|-----------|
| P4788 | 0701340422 | AI System development | MOPE | AIML | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| | | | | Total Required Credits | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | | | | Practical | | Theory | | | |
| | | | | | L | T | La b | CA | ES E | CA | ESE | | |
| | | | | Program Elective (Choose any one course) | | | | | | | | | |
| P5788 | 0701340423 | Robotic Perception and Actuation | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P6134 | 0701340424 | Cloud Computing Essentials | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4900 | 0701340425 | Unmanned Aerial Vehicles | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| Total Required Credits | | | | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |

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| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|-----------------------------|-------------|--------------------------------------|--------|----------------------------------------|----------------------------------|---|------|----------------------------|------|--------|-----|------------------|-------|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | La b | CA | ES E | CA | ESE | | |
| Semester : 5 | | | | | | | | | | | | | |
| Generic Core Courses | | | | | | | | | | | | | |
| P5230 | 0701340501 | Design Thinking | ES | | 1 | 0 | 0 | 0 | 0 | 10 | 15 | 1 | 25 |
| P6135 | 0701340502 | Deep Learning | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4361 | 0701340503 | Microcontroller and Embedded Systems | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P5741 | 0701340504 | Industrial Internet of Things | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| P5742 | 0701340505 | AI for Manufacturing | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| TEE7385 | 0701340506 | Applied ARVR | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| P5740 | 0701340507 | Manufacturing Systems | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| P4784 | 0701340508 | Career Essentials - IV * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Cr | 0 |

| | | | | | | | | | | | | | | |
|-------------------------------|------------|-----------------------|----|--|-----------|----------|-----------|------------|-----------|------------|------------|-----------|-----------------------------|---|
| | | | | | | | | | | | | | edit Course | |
| SMC001 | 0701340509 | Vasudhaiva Kutumbakam | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| Total Required Credits | | | | | 11 | 0 | 18 | 135 | 90 | 110 | 165 | 20 | 500 | |

| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|-------------------------------------------------------------------------|-------------|---------------------------------------------------|--------|----------------------------------|----------------------------------|---|-----|----------------------------|-----|--------|-----|---------------|-------|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| Multi-disciplinary Open Elective Courses (Choose any one Course) | | | | | | | | | | | | | |
| P5210 | 0701340510 | Financial Mathematics | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5211 | 0701340511 | Advanced Materials | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4656 | 0701340512 | Sustainability Engineering- Design and Innovation | MOPE | Civil | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4658 | 0701340513 | Occupational Health and Safety Management | MOPE | Civil | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4840 | 0701340514 | Introduction to Cloud Computing | MOPE | CSE | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4844 | 0701340515 | Agile Methodologies | MOPE | CSE | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4472 | 0701340516 | Embedded System & IoT | MOPE | ENTC | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |

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|-------------------------------|------------|------------------------------|------|------------|----------|----------|----------|----------|----------|-----------|-----------|----------|-----------|
| P5241 | 0701340517 | Basics of 5G Technology | MOPE | ENTC | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P2253 | 0701340518 | Electric and Hybrid Vehicles | MOPE | Mechanical | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| T7650 | 0701340519 | Six Sigma | MOPE | Mechanical | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4790 | 0701340520 | Deep Learning Essentials | MOPE | AI/ML | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4789 | 0701340521 | Optimization for ML Systems | MOPE | AI/ML | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| Total Required Credits | | | | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |



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|--------------------------------------------------|-------------|---------------------------------------------|--------|----------------------------------|----------------------------------|---|---------|----------------------------|---------|--------|-----|-----------------------------------|-------|
| | | | | | L | T | La b | Practical | | Theory | | | |
| | | | | | | | | CA | ES E | CA | ESE | | |
| Generic Core Courses Semester 6 | | | | | | | | | | | | | |
| P4528 | 0701340601 | Natural Language Processing and Linguistics | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4529 | 0701340602 | Computer Networks and Advances | PC | | 2 | 0 | 0 | 0 | 0 | 20 | 30 | 2 | 50 |
| P5225 | 0701340603 | Computer Vision and Image Processing | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P5782 | 0701340604 | Robot Operating System | PC | | 1 | 0 | 4 | 30 | 20 | 10 | 15 | 3 | 75 |
| P4371 | 0701340605 | Responsible AI | HSMC | | 1 | 0 | 0 | 0 | 0 | 10 | 15 | 1 | 25 |
| P5783 | 0701340606 | Project Based Learning | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| P4785 | 0701340607 | Career Essentials - V * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mand at ory Non- Cr edit | 0 |

| | | | | | | | | | | | | | |
|--------------------------------------------------------|------------|------------------------------------------------------|------|-------------------------------|----------|----------|----------|-----------|-----------|-----------|-----------|----------|-----------|
| P4449 | 0701340617 | Smart Manufacturing and Introduction of Industry 5.0 | MOPE | Mechanical Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4792 | 0701340618 | Data Engineering and Applications | MOPE | AI/ML | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4791 | 0701340619 | Gen AI Tools and Techniques | MOPE | AI/ML | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| | | | | Total Required Credits | 2 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| Program Elective IV (Choose any one Course) | | | | | | | | | | | | | |
| P5730 | 0701340620 | Advanced Microcontrollers and Microprocessors | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | 0701340621 | Data Engineering | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P5218 | 0701340622 | Mobile Robotics | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | Total Required Credits | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |



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| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|-------------------------------|-------------|------------------------|--------|----------------------------------|----------------------------------|---|---------|----------------------------|---------|--------|-----|------------------|-------|
| | | | | | L | T | La b | Practical | | Theory | | | |
| | | | | | | | | CA | ES E | CA | ESE | | |
| Semester : 7 (Track 1) | | | | | | | | | | | | | |
| Generic Core Courses | | | | | | | | | | | | | |
| F0001 | 0701340701 | Flexi-Credit Course | PC | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| F0001 | 0701340702 | Flexi-Credit Course | PC | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4534 | 0701340703 | Reinforcement Learning | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| T7804 | 0701340704 | Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| SMC003 | 0701340705 | Health and Wellness * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Cr | 0 |

| | | | | | | | | | | | | | |
|--------------------------------------------------------------|-------------------|------------------------------------------------|--------------|--|----------|----------|-----------|-----------|-----------|-----------|------------|----------------|------------|
| | | | | | | | | | | | | edit Course | |
| Total | | | | | 6 | 0 | 10 | 75 | 50 | 80 | 120 | 13 | 325 |
| Professional Elective – V (Choose any one Course) | | | | | | | | | | | | | |
| P5789 | 0701340706 | Embedded Linux and Real Time Operating Systems | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4901 | 0701340707 | Machine Learning Operations | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P5746 | 0701340708 | Swarm Robotics | PE | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | Total | | 0 | 0 | 0 | 0 | 0 | 20 | 30 | 3 | 75 |

| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|------------------------------------------------------------|-------------|----------------------------------------|--------|----------------------------------|----------------------------------|----------|----------|----------------------------|----------|-----------|-----------|--------------------|-----------|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | La b | CA | ES E | CA | ESE | | |
| Professional Elective VI (Choose any one Course) | | | | | | | | | | | | | |
| P5743 | 0701340709 | Embedded Machine Learning | PE | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5747 | 0701340710 | Foundations of GEN AI and LLM | PE | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4365 | 0701340711 | Biomedical Robotics | PE | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| Total Required Credits | | | | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| Professional Elective - VII (Choose any one Course) | | | | | | | | | | | | | |
| P4897 | 0701340712 | Hardware and Network Security | PE | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5785 | 0701340713 | Graph Neural Networks and Applications | PE | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4905 | 0701340714 | Collaborative and Service Robotics | PE | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| Total Required Credits | | | | | 2 | 1 | 0 | 0 | 0 | 45 | 30 | 3 | 75 |
| Semester : 7 (Track 2) | | | | | | | | | | | | | |
| T7804 | 701270707 | Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| SMC003 | 701270708 | Health and Wellness * | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mand atory Non- | 0 |

| | | | | | | | | | | | | | | |
|--------------------------------------------------------|------------|---------------------|-----|--|------------|------------|-----------|------------|------------|------------|------------|------------|----------------|--|
| | | | | | | | | | | | | | Cr edit Course | |
| F0003 | 701270713 | Flexi-Credit Course | PC | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 | |
| F0001 | 701270714 | Flexi-Credit Course | PC | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 | |
| Generic Elective courses Group (Choose any one Course) | | | | | | | | | | | | | | |
| T7912 | 701270715 | Startup Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 | |
| T7912 | 701270716 | Research Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 | |
| T7912 | 701270717 | Industry Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 | |
| Total Required Credits | | | | | 180 | 120 | 0 | 0 | 12 | 300 | 180 | 120 | 0 | |
| Semester : 8 | | | | | | | | | | | | | | |
| Generic Core Courses | | | | | | | | | | | | | | |
| T7912 | 0701270801 | Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 | |
| T7802 | 0701270802 | Seminar | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 | |
| Total | | | | | 0 | 0 | 28 | 210 | 140 | 0 | 0 | 14 | 350 | |

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Abbreviations (Nature)

| | |
|-----|---------------------------------|
| BS | Basic Sciences |
| ES | Engineering Sciences |
| HS | Humanities and Social Sciences |
| OE | Open Electives |
| PC | Professional Core |
| PE | Professional Elective |
| PIS | Project, Internship, Seminar |
| PD | Professional Development Course |
| MC | Mandatory Course |
| L | Lecture |
| T | Tutorial |
| CA | Continuous Assessment |
| ESE | End Semester Examination |
| GE | Generic Elective |



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| Semester | Internal Credits | External Credits | Total Credits | Total Marks |
|--------------|---------------------|-----------------------|---------------|-------------|
| Semester 1 | 3 | 17 | 20 | 500 |
| Semester 2 | 4 | 16 | 20 | 500 |
| Semester 3 | 4 | 16 | 20 | 500 |
| Semester 4 | 6 | 16 | 22 | 550 |
| Semester 5 | 4 | 19 | 23 | 575 |
| Semester 6 | 5 | 16 | 21 | 525 |
| Semester 7 | Track 1-4,Track 2-4 | Track 1-16,Track 2-16 | 20 | 500 |
| Semester 8 | 0 | 14 | 14 | 350 |
| Total | 30 | 130 | 160 | 4000 |



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Annexure B

Optional 'Honours' Specialization

| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|-----------------------------------------------------------------------------|-------------|--------------------------------------------|--------|----------------------------------|----------------------------------|----------|----------|----------------------------|-----------|-----------|-----------|---------------|------------|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| Semester : 5 | | | | | | | | | | | | | |
| Aerial Robotics and Drone Technology Specialization Core Courses | | | | | | | | | | | | | |
| TE7850 | 0701340522 | Introduction to Aerial Robotics and Drones | PC | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5288 | 0701340523 | Motion Planning and Control | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | Total | 5 | 0 | 2 | 15 | 10 | 50 | 75 | 6 | 150 |
| Semester : 6 | | | | | | | | | | | | | |
| Aerial Robotics and Drone Technology Specialization Core Courses | | | | | | | | | | | | | |
| TE7884 | 0701340623 | Robotics Mobility and Perception | PC | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |

| | | | | | | | | | | | | | |
|--------|------------|----------------------------------|----|--|---|---|---|----|----|----|----|---|-----|
| TE7883 | 0701340624 | Robotics Estimation and Learning | PC | | 2 | 0 | 0 | 0 | 0 | 20 | 30 | 2 | 50 |
| TE7866 | 0701340625 | Navigation and Communication Lab | PC | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| Total | | | | | 5 | 0 | 4 | 30 | 20 | 50 | 75 | 7 | 175 |



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Annexure B

Optional 'Honours' Specialization

| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---------------------|-------------|--------------|--------|----------------------------------|----------------------------------|---|-----------|----------------------------|--------|----|-----|---------------|-------|
| | | | | | | | Practical | | Theory | | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| | | | | | | | | | | | | | |



| Semester : 7 | | | | | | | | | | | | | |
|---------------------------------------------------------------------|------------|-----------------|-----|--|----------|----------|-----------|------------|-----------|----------|----------|----------|------------|
| Aerial Robotics and Drone Technology Specialization Core Courses | | | | | | | | | | | | | |
| P5295 | 0701340718 | Honours Project | PIS | | 0 | 0 | 10 | 75 | 50 | 0 | 0 | 5 | 125 |
| P5296 | 0701340719 | Honours Seminar | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| Total | | | | | 0 | 0 | 14 | 105 | 70 | 0 | 0 | 7 | 175 |

| Semester | Continuous Assessment | Term End Examination | Total Credits | Total Marks |
|--------------------------------------|-----------------------|----------------------|---------------|-------------|
| Aerial Robotics and Drone Technology | | | | |
| Semester 5 | 0 | 6 | 6 | 150 |
| Semester 6 | 0 | 7 | 7 | 175 |
| Semester 7 | 0 | 7 | 7 | 175 |
| Total | 0 | 20 | 20 | 500 |



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Annexure C
Optional 'Minor' Specialization

| Catalog Course Code | Course Code | Course Title | Nature | Specialization/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|----------------------------------------------------------------------------------|-------------|----------------------------------------|--------|----------------------------------|----------------------------------|----------|----------|----------------------------|-----------|-----------|-----------|---------------|------------|
| | | | | | L | T | La b | Practical | | Theory | | | |
| | | | | | | | | CA | ESE | CA | ESE | | |
| Semester : 3 | | | | | | | | | | | | | |
| Computer Science Engineering Fundamentals Specialization Core Courses | | | | | | | | | | | | | |
| TEE7290 | 0701220314 | Computer Architecture and Organization | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4807 | 0701220315 | Programming with JAVA | PC | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| Total | | | | | 2 | 0 | 6 | 45 | 30 | 20 | 30 | 5 | 125 |
| Semester : 4 | | | | | | | | | | | | | |
| Computer Science Engineering Fundamentals Specialization Core Courses | | | | | | | | | | | | | |
| P4806 | 0701270425 | Database Management Systems | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| P4801 | 0701270426 | Computer Networks | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |

| | | | | | | | | | | | | | |
|----------------------------------------------------------------------------------|------------|-------------------|----|--|----------|----------|----------|-----------|----------|-----------|----------|----------|-----------|
| P5300 | 0701270527 | Operating Systems | PC | | 3 | 0 | 0 | 0 | 0 | 75 | 0 | 3 | 75 |
| Total | | | | | 3 | 0 | 0 | 0 | 0 | 75 | 0 | 3 | 75 |
| Semester : 6 | | | | | | | | | | | | | |
| Computer Science Engineering Fundamentals Specialization Core Courses | | | | | | | | | | | | | |
| TEE7306 | 0701270627 | Cyber Security | ES | | 1 | 0 | 2 | 25 | 0 | 25 | 0 | 2 | 50 |
| Total | | | | | 1 | 0 | 2 | 25 | 0 | 25 | 0 | 2 | 50 |



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Annexure C Optional 'Minor'
Specialization

| Semester | Continuous Assessment | Term End Examination | Total Credits | Total Marks |
|----------|-----------------------|----------------------|---------------|-------------|
|----------|-----------------------|----------------------|---------------|-------------|



| Computer Science Engineering Fundamentals | | | | |
|-------------------------------------------|----------|-----------|-----------|------------|
| Semester 3 | 0 | 5 | 5 | 125 |
| Semester 4 | 0 | 8 | 8 | 200 |
| Semester 5 | 0 | 3 | 3 | 75 |
| Semester 6 | 0 | 2 | 2 | 50 |
| Total | 0 | 18 | 18 | 500 |

