# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
## Programme Structure 2026-30

<table>
<tr><td>1.</td><td>OBJECTIVE</td><td colspan="4">B. Tech (Computer Science and Engineering) is a full-time four-year graduation programme, which aims at transforming a student into a technically sound professional. The syllabus contains courses on basic sciences, technical arts, humanities & liberal arts and professional courses. The mix of these courses has been evolved with an aim to produce professionals who have knowledge not only of Engineering but who are good managers to contribute in a cross-functional team and have human values.<br>Being a professional programme it ensures a healthy balance between theoretical foundation and practical exposure to the present-day world. The emphasis is to develop all round personality that would enable the students to take up the challenges of the corporate world and also become responsible citizens of the society.</td></tr>
<tr><td>2.</td><td>DURATION (IN MONTHS)</td><td colspan="4">48 (Full Time)</td></tr>
<tr><td>3.</td><td>INTAKE</td><td colspan="4">180</td></tr>
<tr><td rowspan="4">4.</td><td rowspan="4">RESERVATION</td><td rowspan="2">I.Within the sanctioned intake</td><td>a) SC<br>(In Percentage)</td><td>b) ST<br>(In Percentage)</td><td>c) Differently abled<br>(In Percentage)</td></tr>
<tr><td>15</td><td>7.5</td><td>3</td></tr>
<tr><td rowspan="2">II.Over and above the sanctioned intake</td><td colspan="2">a) Kashmiri<br>Migrants (In Seats)</td><td>b) International Students<br>(In Percentage)</td></tr>
<tr><td colspan="2">2</td><td>20</td></tr>
<tr><td>5.</td><td>ELIGIBILITY</td><td colspan="4">Passed 10+2 examination with Physics and Mathematics as compulsory subjects along with one of Chemistry/ Computer Science/Electronics/ Information Technology/Biology/Informatics Practices/ Biotechnology/Technical<br>Vocational subject/ Agriculture/ Engineering Graphics/Business Studies /Entrepreneurship. Obtained at least 45% marks (40% marks in case of candidates belonging to reserved category) in the above subjects taken together.<br>OR<br>Passed D.Voc. Stream in the same or allied sector. (The University will offer suitable bridge courses such as Mathematics, Physics,</td></tr>
</table>

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
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| | | |
|---|---|---|
| | | Engineering drawing, etc., for students coming from diverse backgrounds to prepare Level playing field and desired learning outcomes of the programme).<br><br>B.Tech. : Lateral Entry<br><br>Passed Minimum Three-years/ Two-year (Lateral Entry) Diploma examination with at least 45% marks (40% marks in case of candidates belonging to reserved category) in ANY branch of Engineering and Technology.<br>OR<br>Passed B.Sc. Degree from a recognized University as defined by UGC, with atleast 45% marks (40% marks or equivalent grade for Scheduled Caste / Scheduled Tribes) and passed 10+2 examination with Mathematics as a subject.<br>OR<br>Passed B. Voc/3-year D.Voc. Stream in the same allied sector. (The Constituent will offer suitable bridge courses such as Mathematics, Physics, Engineering drawing, etc., for the students coming from diverse backgrounds to achieve desired learning outcomes of the programme). |
| **6.** | **SELECTION PROCEDURE** | Merit list by valid score of Symbiosis Entrance Test (SITEEE) or Joint Entrance Examination (JEE - Main) or Any State Government Engineering Entrance Examination. |
| **7.** | **MEDIUM OF INSTRUCTION** | English |
| **8.** | **PROGRAMME PATTERN** | Semester |
| **9.** | **COURSE & SPECIALISATION** | Annexure A: Bachelor of Technology (Computer Science and Engineering)<br>Students may pursue optional 'Honours' Specialisation in one of the specialisation areas by completing additional 20 credits in Semesters: 5, 6, and 7, as specified in Annexure B for Hounours or optional 'Minors' Specialisation by completing an additional 18 credits in Semesters: 3, 4, 5, and 6 Annexure C for Minors in the respective specialisation area as specified in Annexure C.<br>Annexure B: Honours specialisation area<br>1. Artificial Intelligence and Data Science<br>2. Cloud Operations and Analytics<br>3. Digital Security and Forensics |

# Symbiosis Institute of Technology, Pune

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| | | | | | |
|---|---|---|---|---|---|
| | | 4. Metaverse and Game Development<br><br>Annexure C: Minors specialization area<br>1. IoT and Embedded AI<br>2. Smart Manufacturing and Intelligent Systems | | | |
| **10.** | **FEE** | | **Academic Fee p.a** | **Institute Deposit** | **Total** |
| | | | | | |
| | **Indian Students (Amount in INR)** | | 400000 | 20000 | 420000 |
| | **International Students** | **NRI/ PIO/ OCI Category (Amount in US$)** | 7000 | 275 | 7275 |
| | | **Foreign National Category (Amount in US$)** | 1300 | 275 | 1575 |
| | | | | | |
| **11.** | **ASSESSMENT** | The theory courses will have 40% Continuous Assessment and 60% Term End [University] examination, Lab courses (Practical) will have 60% Continuous Assessment and 40% Term End [University] examination however, some courses (not more than 30% of the total programme credits) may have 100% Continuous Assessment. | | | |
| **12.** | **STANDARD OF PASSING** | The assessment of the student for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to O (Outstanding). For all courses, a student is required to pass both internal and external examination separately with a minimum Grade Point of 4 corresponding to Grade P. Students securing less than 40% absolute marks in each head of passing will be declared FAIL. The University awards a degree to the student who has achieved a minimum CGPA of 4 out of maximum of 10 CGPA for the programme. | | | |

| | | |
|---|---|---|
| **13.** | **AWARD OF DEGREE** | Bachelor of Technology (Computer Science and Engineering)<br>OR<br>Bachelor of Technology (Computer Science and Engineering) with Honours in Artificial Intelligence and Data Science/ Cloud Operations and Analytics/ Digital Security and Forensics/ Metaverse and Game Development<br>OR/and<br>Bachelor of Technology (Computer Science and Engineering) with Minors in IoT and Embedded AI,/ Smart Manufacturing and Intelligent Systems<br>as applicable will be awarded at the end of semester 8 examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA. |
| **14.** | **CLASSIFICATION OF CREDITS** | |
| | | |

| Semester | Basic Sciences | Engineering Sciences | Professional Core | Professional Elective | Humanities and Social Sciences including Management | Multidisciplinary Open Electives | Project/ Internship / Seminar | Indian Knowledge System | Total Credits | No. of Mandatory Non-Credit Course/s | No. of Non-Credit Audit Course/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Track 1** | | | | | | | | | | | |
| 1 | 8 | 7 | 1 | 0 | 2 | 0 | 0 | 2 | 20 | 0 | As per the student's choice |
| 2 | 3 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 20 | 1* | |
| 3 | 3 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 20 | 1* | |
| 4 | 3 | 1 | 11 | 0 | 0 | 3 | 2 | 0 | 20 | 1* | |
| 5 | 0 | 0 | 12 | 4 | 3 | 3 | 0 | 0 | 22 | 2* | |
| 6 | 0 | 0 | 12 | 4 | 1 | 3 | 2 | 0 | 22 | 1* | |
| 7 | 0 | 0 | 8 | 10 | 0 | 0 | 4 | 0 | 22 | 1* | |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | |
| **Total** | **17** | **15** | **70** | **18** | **7** | **9** | **22** | **2** | **160** | **0** | |
| **Track 2** | | | | | | | | | | | |
| 1 | 8 | 7 | 1 | 0 | 2 | 0 | 0 | 2 | 20 | 0 | As per the student's choice |
| 2 | 3 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 20 | 1* | |
| 3 | 3 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 20 | 1* | |
| 4 | 3 | 1 | 11 | 0 | 0 | 3 | 2 | 0 | 20 | 1* | |
| 5 | 0 | 0 | 12 | 4 | 3 | 3 | 0 | 0 | 22 | 2* | |
| 6 | 0 | 0 | 12 | 4 | 1 | 3 | 2 | 0 | 22 | 1* | |
| 7 | 0 | 0 | 3 | 0 | 0 | 0 | 19 | 0 | 22 | 1* | |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | |
| **Total** | **17** | **15** | **65** | **8** | **7** | **9** | **37** | **2** | **160** | **0** | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Optional Additional Courses (Honours)** | | | | | | | | | | | |
| 5 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | |
| 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | |
| **Total** | **0** | **0** | **14** | **0** | **0** | **0** | **6** | **0** | **20** | **0** | |
| **Optional Additional Courses (Minors)** | | | | | | | | | | | |
| 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | As per the student's choice |
| 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | |
| 5 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | |
| 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | |
| **Total** | **0** | **0** | **18** | **0** | **0** | **0** | **0** | **0** | **18** | **0** | |

* Satisfactory completion of non credit courses 'Health and Wellness', '*Vasudhaiva Kutumbakam*' and 'Career Essentials I to V' is mandatory for award of degree.

**Additional Note:** #Health and Wellness Module I and Module II will be conducted during the semesters mentioned in the programme structure. However, the course will be listed on the students' grade sheets as "Health and Wellness" in the semester in which the institute's course code is officially assigned.

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)

## Programme Structure 2026-30

## Annexure A

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| **Semester : 1** | | | | | | | | | | | | | |
| **Generic Core Courses** | | | | | | | | | | | | | |
| TEE7237 | 0701220101 | Calculus | BS | | 3 | 1 | 0 | 0 | 0 | 40 | 60 | 4 | 100 |
| TEE7244 | 0701220102 | Fundamentals of Quantum Physics | BS | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| TEE7301 | 0701220103 | Programming Paradigm and Problem Solving | ES | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7303 | 0701220104 | Software and Generative AI Tools | ES | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| TEE7310 | 0701220105 | Digital Electronics and Logic Design | ES | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7296 | 0701220106 | Object Oriented Programming | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| THM6150 | 0701220107 | Technical and Professional Communication Skills | HSMC | | 0 | 0 | 2 | 25 | 0 | 0 | 0 | 1 | 25 |
| T6732 | 0701220108 | Critical Thinking | HSMC | | 1 | 0 | 0 | 0 | 0 | 25 | 0 | 1 | 25 |
| THM6144 | 0701220109 | Indian Knowledge Systems | IKS | | 2 | 0 | 0 | 0 | 0 | 50 | 0 | 2 | 50 |
| | | | | **Total** | **13** | **1** | **12** | **100** | **50** | **185** | **165** | **20** | **500** |
| **Semester : 2** | | | | | | | | | | | | | |
| **Generic Core Courses** | | | | | | | | | | | | | |
| TEE7255 | 0701220201 | Linear Algebra | BS | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| TEE7317 | 0701220202 | Microcontrollers and Sensors | ES | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7306 | 0701220203 | Cyber Security | ES | | 1 | 0 | 2 | 25 | 0 | 25 | 0 | 2 | 50 |
| TM2278 | 0701220204 | Introduction to Environment and Sustainability | ES | | 0 | 0 | 2 | 25 | 0 | 0 | 0 | 1 | 25 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| TEE7364 | 0701220205 | Tinker and IDEA Lab | ES | | 0 | 0 | 2 | 25 | 0 | 0 | 0 | 1 | 25 |
| TEE7302 | 0701220206 | Python Programming | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7290 | 0701220207 | Computer Architecture and Organization | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| TEE7304 | 0701220208 | Software Engineering | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| T6873 | 0701220209 | Creative Thinking | HSMC | | 1 | 0 | 0 | 0 | 0 | 25 | 0 | 1 | 25 |
| TEE7265 | 0701220210 | Career Essentials - I * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| | | | | **Total** | **12** | **1** | **14** | **135** | **40** | **160** | **165** | **20** | **500** |
| **Semester : 3** | | | | | | | | | | | | | |
| **Generic Core Courses** | | | | | | | | | | | | | |
| TEE7254 | 0701220301 | Discrete Mathematics | BS | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4802 | 0701220302 | Data Structures | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| P4804 | 0701220303 | Operating Systems | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4806 | 0701220304 | Database Management Systems | PC | | 2 | 0 | 4 | 30 | 20 | 20 | 30 | 4 | 100 |
| F0002 | 0701220305 | Flexi-Credit Course | PC | | 0 | 0 | 4 | 50 | 0 | 0 | 0 | 2 | 50 |
| P4807 | 0701220306 | Programming with JAVA | PC | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| P4809 | 0701220307 | Web Application Development | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| P4781 | 0701220308 | Career Essentials - II * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| TH4788 | | Health and Wellness Module I # | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | | | | | **9** | **1** | **20** | **170** | **80** | **100** | **150** | **20** | **500** |
| **Semester : 4** | | | | | | | | | | | | | |
| **Generic Core Courses** | | | | | | | | | | | | | |
| TE7689 | 0701220401 | Statistics and Probability | BS | | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5230 | 0701220402 | Design Thinking | ES | | 1 | 0 | 0 | 0 | 0 | 25 | 0 | 1 | 25 |
| P4801 | 0701220403 | Computer Networks | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4803 | 0701220404 | Design and Analysis of Algorithms | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4808 | 0701220405 | Data Management and Visualization | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4868 | 0701220406 | Advanced Python Lab | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| TE7290 | 0701220407 | Project Based Learning -I | PIS | | 0 | 0 | 4 | 50 | 0 | 0 | 0 | 2 | 50 |
| P4782 | 0701220408 | Career Essentials - III * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |

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| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| TH4789 | | Health and Wellness Module II # | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | **Total** | **10** | **1** | **12** | **110** | **40** | **125** | **150** | **17** | **425** |
| **Multidisciplinary Open Elective Courses (Choose Any One Course)** | | | | | | | | | | | | | |
| P5208 | 0701220409 | Quantum Computing for Engineers | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5209 | 0701220410 | Mathematics for Data Science | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4627 | 0701220411 | Smart Cities Planning and Management | MOPE | Civil Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4633 | 0701220412 | Intelligent Waste Management Techniques | MOPE | Civil Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| TEE7018 | 0701220413 | Engineering Simulation and Modeling Tools | MOPE | Electronics and Telecommunication Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4278 | 0701220414 | Medical Electronics | MOPE | Electronics and Telecommunication Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| TE7351 | 0701220415 | 3D Printing and Prototyping | MOPE | Mechanical Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5275 | 0701220416 | Battery Management Systems | MOPE | Mechanical Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4787 | 0701220417 | Fundamentals of Machine Learning | MOPE | Artificial Intelligence and Machine Learning | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4788 | 0701220418 | AI System Development | MOPE | Artificial Intelligence and Machine Learning | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5214 | 0701220419 | Fundamentals of Robotics and Automation | MOPE | Robotics and Automation | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| P5215 | 0701220420 | Robotic Process Automation | MOPE | Robotics and Automation | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| **Total Required Credits** | | | | | | | | **0** | **0** | **30** | **45** | **3** | **75** |
| **Semester : 5** | | | | | | | | | | | | | |
| **Generic Core Courses** | | | | | | | | | | | | | |
| P4810 | 0701220501 | Theory of Computation | PC | | 3 | 0 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4814 | 0701220502 | Cryptography and Information Security | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4816 | 0701220503 | Data Science and Business Intelligence | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4818 | 0701220504 | Cloud Computing | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| T2646 | 0701220506 | Entrepreneurship Venture | HSMC | | 1 | 0 | 0 | 0 | 0 | 25 | 0 | 1 | 25 |
| P4784 | 0701220507 | Career Essentials - IV * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| SMC001 | 0701220508 | *Vasudhaiva Kutumbakam* * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| T8000 | 0701220505 | Service Learning | HSMC | | 0 | 0 | 4 | 50 | 0 | 0 | 0 | 2 | 50 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| **Total** | | | | | **10** | **0** | **10** | **95** | **30** | **115** | **135** | **15** | **375** |
| **Programme Elective (Choose any one course)** | | | | | | | | | | | | | |
| P4820 | 0701220509 | Cloud Computing Tools and Techniques | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4823 | 0701220510 | Advanced Computer Networks | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4827 | 0701220511 | Advances in Machine Learning | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4833 | 0701220512 | Data Warehousing and Mining | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4835 | 0701220513 | Essentials of Augmented and Virtual Reality | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4838 | 0701220514 | IoT Data Analytics | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| **Total Required Credits** | | | | | | | | **25** | **0** | **75** | **0** | **4** | **100** |
| **Multidisciplinary Open Elective Courses (Choose Any One Course)** | | | | | | | | | | | | | |
| P5210 | 0701220515 | Financial Mathematics | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5211 | 0701220516 | Advanced Materials | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4656 | 0701220517 | Sustainability Engineering- Design and Innovation | MOPE | Civil Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4658 | 0701220518 | Occupational Health and Safety Management | MOPE | Civil Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4472 | 0701220519 | Embedded System and IoT | MOPE | Electronics and Telecommunication Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| P5241 | 0701220520 | Basics of 5G Technology | MOPE | Electronics and Telecommunication Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5277 | 0701220521 | Electric and Hybrid Vehicles | MOPE | Mechanical Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| T7650 | 0701220522 | Six Sigma | MOPE | Mechanical Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4789 | 0701220523 | Optimization for ML Systems | MOPE | Artificial Intelligence and Machine Learning | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4790 | 0701220524 | Deep Learning Essentials | MOPE | Artificial Intelligence and Machine Learning | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5216 | 0701220525 | Industrial Robotics | MOPE | Robotics and Automation | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5217 | 0701220526 | PLC and SCADA | MOPE | Robotics and Automation | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| **Total Required Credits** | | | | | | | | **0** | **0** | **30** | **45** | **3** | **75** |
| **Semester : 6** | | | | | | | | | | | | | |
| **Generic Core Courses** | | | | | | | | | | | | | |
| F0003 | 0701220601 | Flexi-Credit Course | PC | | 2 | 0 | 2 | 25 | 0 | 50 | 0 | 3 | 75 |
| P4813 | 0701220602 | Compiler Design | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4815 | 0701220603 | Distributed System | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4817 | 0701220604 | Blockchain Technology | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P4406 | 0701220605 | Organizational Behaviour | HSMC | | 1 | 0 | 0 | 0 | 0 | 25 | 0 | 1 | 25 |
| TE7291 | 0701220606 | Project Based Learning-II | PIS | | 0 | 0 | 4 | 50 | 0 | 0 | 0 | 2 | 50 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| P4785 | 0701220607 | Career Essentials - V * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| **Total** | | | | | **9** | **0** | **12** | **120** | **30** | **135** | **90** | **15** | **375** |
| **Programme Elective (Choose any one course)** | | | | | | | | | | | | | |
| P4819 | 0701220608 | DevOps | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4821 | 0701220609 | Malware Analysis and Secure Coding | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4822 | 0701220610 | Computer Vision Applications | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4824 | 0701220611 | Pattern Recognition | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4825 | 0701220612 | Advanced Databases | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4826 | 0701220613 | AR and VR Applications | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4828 | 0701220614 | IoT Security | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| **Total Required Credits** | | | | | | | | **25** | **0** | **75** | **0** | **4** | **100** |
| **Multidisciplinary Open Elective Courses (Choose any one course)** | | | | | | | | | | | | | |
| P5212 | 0701220615 | Bioinformatics | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5213 | 0701220616 | Introduction to Space Science | MOPE | Applied Science | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4657 | 0701220617 | GIS and Remote Sensing Analytics | MOPE | Civil Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4659 | 0701220618 | Environmental Impact Assessment | MOPE | Civil Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
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## Annexure A

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| P4475 | 0701220619 | Renewable Energy Systems | MOPE | Electronics and Telecommunication Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4274 | 0701220620 | Semiconductor Technology Trends | MOPE | Electronics and Telecommunication Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4448 | 0701220621 | Supply Chain Management | MOPE | Mechanical Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4449 | 0701220622 | Smart Manufacturing and Introduction of Industry 5.0 | MOPE | Mechanical Engineering | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4791 | 0701220623 | Gen AI Tools and Techniques | MOPE | Artificial Intelligence and Machine Learning | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P4792 | 0701220624 | Data Engineering and Applications | MOPE | Artificial Intelligence and Machine Learning | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5218 | 0701220625 | Mobile Robotics | MOPE | Robotics and Automation | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| P5219 | 0701220626 | Introduction to Aerial Robotics and Drone Technology | MOPE | Robotics and Automation | 2 | 1 | 0 | 0 | 0 | 30 | 45 | 3 | 75 |
| **Total Required Credits** | | | | | | | | **0** | **0** | **30** | **45** | **3** | **75** |
| **Semester : 7** | | | | | | | | | | | | | |
| **(Track 1) Generic Core Courses** | | | | | | | | | | | | | |
| F0003 | 0701220701 | Flexi-Credit Course | PC | | 2 | 0 | 2 | 25 | 0 | 50 | 0 | 3 | 75 |

# Symbiosis Institute of Technology, Pune

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## Programme Structure 2026-30

## Annexure A

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| P4832 | 0701220702 | Big Data Analytics | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| P5280 | 0701220703 | Project Management and Practices | PC | | 2 | 0 | 0 | 0 | 0 | 20 | 30 | 2 | 50 |
| F0002 | 0701220704 | Flexi-Credit Course | PE | | 2 | 0 | 0 | 0 | 0 | 50 | 0 | 2 | 50 |
| T7804 | 0701220705 | Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| SMC003 | 0701220706 | Health and Wellness * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| **Total Required Credits** | | | | | | | | **100** | **50** | **140** | **60** | **14** | **350** |
| **Programme Elective - I (Choose any one course)** | | | | | | | | | | | | | |
| P4837 | 0701220707 | IoT in Smart Cities | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4839 | 0701220708 | Building and Training Large Language Models | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4841 | 0701220709 | Human Computer Interface | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4842 | 0701220710 | Distributed Databases | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4836 | 0701220711 | Cloud Security and Privacy | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4872 | 0701220712 | Business and Finance Analytics | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| **Total Required Credits** | | | | | | | | **25** | **0** | **75** | **0** | **4** | **100** |
| **Programme Elective - II (Choose any one course)** | | | | | | | | | | | | | |
| P5195 | 0701220713 | Robotics and AI | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |

# Symbiosis Institute of Technology, Pune

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## Annexure A

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| P4869 | 0701220714 | IT Infrastructure and Automation | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4845 | 0701220715 | Digital Forensics | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4849 | 0701220716 | Information Storage & Retrieval | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4843 | 0701220717 | High Performance Computing | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| P4847 | 0701220718 | Soft Computing | PE | | 3 | 0 | 2 | 25 | 0 | 75 | 0 | 4 | 100 |
| **Total Required Credits** | | | | | | | | **25** | **0** | **75** | **0** | **4** | **100** |
| **(Track 2) Generic Core Courses** | | | | | | | | | | | | | |
| F0003 | 0701220719 | Flexi-Credit Course | PC | | 0 | 0 | 6 | 75 | 0 | 0 | 0 | 3 | 75 |
| T7804 | 0701220705 | Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| SMC003 | 0701220706 | Health and Wellness * | MC | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Mandatory Non-Credit Course | 0 |
| T7677 | 0701220720 | Technical Writing and Seminars | PIS | | 0 | 0 | 6 | 45 | 30 | 0 | 0 | 3 | 75 |
| **Total Required Credits** | | | | | | | | **180** | **70** | **0** | **0** | **10** | **250** |
| **Generic Elective courses Group - (Choose any one Course)** | | | | | | | | | | | | | |
| T7912 | 0701220721 | Startup Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 |
| T7912 | 0701220722 | Research Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 |

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
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## Annexure A

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| T7912 | 0701220723 | Industry Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 |
| **Total Required Credits** | | | | | | | | **180** | **120** | **0** | **0** | **12** | **300** |
| **Semester : 8** | | | | | | | | | | | | | |
| **Generic Core Courses** | | | | | | | | | | | | | |
| T7912 | 0701220801 | Internship | PIS | | 0 | 0 | 24 | 180 | 120 | 0 | 0 | 12 | 300 |
| T7802 | 0701220802 | Seminar | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| **Total** | | | | | **0** | **0** | **28** | **210** | **140** | **0** | **0** | **14** | **350** |

| Abbreviations (Nature) | Description |
|---|---|
| **BS** | Basic Sciences |
| **ES** | Engineering Sciences |
| **PC** | Professional Core |
| **PE** | Professional Elective |
| **HSMC** | Humanities and Social Sciences including Management |
| **MOPE** | Multidisciplinary Open Electives |
| **PIS** | Project, Internship, Seminar |
| **IKS** | Indian Knowledge System |
| **L** | Lecture |
| **MC** | Mandatory Course |
| **T** | Tutorial |
| **CA** | Continuous Assessment |
| **ESE** | End Semester Examination |
| **LAB** | Laboratory |

**Track 1 (T1):** For Regular Students
**Track 2 (T2):** For Students opting for Internship/ Entrepreneurship

**Definition:**
**Honours:** Students have the option to pursue an "Honours" degree by completing an additional 20 credits within their major discipline, focusing on more advanced, specialised, emerging, or multidisciplinary courses beyond the standard requirements of the B.Tech degree.

**Minors:** Students have the option to pursue a "Minor" by completing 18 credits in a discipline/ specialisation other than their major discipline beyond the standard requirements of the B.Tech. Degree.

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
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## Annexure A

| Semester | Continuous Assessment | End Semester Examination | Total Credits | Total Marks |
|---|---|---|---|---|
| **Track 1** | | | | |
| Semester 1 | 4 | 16 | 20 | 500 |
| Semester 2 | 5 | 15 | 20 | 500 |
| Semester 3 | 2 | 18 | 20 | 500 |
| Semester 4 | 3 | 17 | 20 | 500 |
| Semester 5 | 7 | 15 | 22 | 550 |
| Semester 6 | 10 | 12 | 22 | 550 |
| Semester 7 | 13 | 9 | 22 | 550 |
| Semester 8 | 0 | 14 | 14 | 350 |
| **Total** | **44** | **116** | **160** | **4000** |
| **Track 2** | | | | |
| Semester 1 | 4 | 16 | 20 | 500 |
| Semester 2 | 5 | 15 | 20 | 500 |
| Semester 3 | 2 | 18 | 20 | 500 |
| Semester 4 | 3 | 17 | 20 | 500 |
| Semester 5 | 7 | 15 | 22 | 550 |
| Semester 6 | 10 | 12 | 22 | 550 |
| Semester 7 | 3 | 19 | 22 | 550 |
| Semester 8 | 0 | 14 | 14 | 350 |
| **Total** | **34** | **126** | **160** | **4000** |

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
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## Optional 'Honours' Specialisation

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| **Semester : 5** | | | | | | | | | | | | | |
| **Artificial Intelligence and Data Science Specialisation Core Courses** | | | | | | | | | | | | | |
| P4854 | 0701220527 | Data Processing and Visualization | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4855 | 0701220528 | Intelligent Systems and ML Models | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |
| **Semester : 5** | | | | | | | | | | | | | |
| **Cloud Operations and Analytics Specialisation Core Courses** | | | | | | | | | | | | | |
| P4846 | 0701220529 | Advanced Cloud Computing | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4848 | 0701220530 | Cloud Infrastructure and Services | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |
| **Semester : 5** | | | | | | | | | | | | | |
| **Digital Security and Forensics Specialisation Core Courses** | | | | | | | | | | | | | |
| P4852 | 0701220531 | Vulnerability Assessment and Penetration Testing | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4853 | 0701220532 | Cyber Security and Artificial Intelligence | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
## Programme Structure 2026-30
## Annexure B

## Optional 'Honours' Specialisation

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| **Semester : 5** | | | | | | | | | | | | | |
| **Metaverse and Game Development Specialisation Core Courses** | | | | | | | | | | | | | |
| P4850 | 0701220533 | Introduction to AR, VR and XR | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4851 | 0701220534 | Principles of Game Design | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |
| **Semester : 6** | | | | | | | | | | | | | |
| **Artificial Intelligence and Data Science Specialisation Core Courses** | | | | | | | | | | | | | |
| P4864 | 0701220627 | Natural Language Processing | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4863 | 0701220628 | Deep Learning | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |
| **Semester : 6** | | | | | | | | | | | | | |
| **Cloud Operations and Analytics Specialisation Core Courses** | | | | | | | | | | | | | |
| P4858 | 0701220629 | Cloud-Based Data Analytics and Big Data | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4859 | 0701220630 | Modern DevOps and Continuous Delivery in Cloud Environments | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |

# Symbiosis Institute of Technology, Pune

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## Programme Structure 2026-30
## Annexure B

## Optional 'Honours' Specialisation

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| **Semester : 6** | | | | | | | | | | | | | |
| **Digital Security and Forensics Specialisation Core Courses** | | | | | | | | | | | | | |
| P4870 | 0701220631 | Cyber Forensics and Investigation | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4871 | 0701220632 | Device Security | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |
| **Semester : 6** | | | | | | | | | | | | | |
| **Metaverse and Game Development Specialisation Core Courses** | | | | | | | | | | | | | |
| P4860 | 0701220633 | Modern Tools in Game Development | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P4861 | 0701220634 | Design for Virtual Reality | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **5** | **0** | **4** | **30** | **20** | **50** | **75** | **7** | **175** |
| **Semester : 7** | | | | | | | | | | | | | |
| **Artificial Intelligence and Data Science Specialisation Core Courses** | | | | | | | | | | | | | |
| T7802 | 0701220724 | Honours Seminar | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| T7804 | 0701220725 | Honours Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| | | | | **Total** | **0** | **0** | **12** | **90** | **60** | **0** | **0** | **6** | **150** |

# Symbiosis Institute of Technology, Pune

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## Optional 'Honours' Specialisation

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| **Semester : 7** | | | | | | | | | | | | | |
| **Cloud Operations and Analytics Specialisation Core Courses** | | | | | | | | | | | | | |
| T7802 | 0701220724 | Honours Seminar | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| T7804 | 0701220725 | Honours Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| | | | | **Total** | **0** | **0** | **12** | **90** | **60** | **0** | **0** | **6** | **150** |
| **Semester : 7** | | | | | | | | | | | | | |
| **Digital Security and Forensics Specialisation Core Courses** | | | | | | | | | | | | | |
| T7802 | 0701220724 | Honours Seminar | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| T7804 | 0701220725 | Honours Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| | | | | **Total** | **0** | **0** | **12** | **90** | **60** | **0** | **0** | **6** | **150** |
| **Semester : 7** | | | | | | | | | | | | | |
| **Metaverse and Game Development Specialisation Core Courses** | | | | | | | | | | | | | |
| T7802 | 0701220724 | Honours Seminar | PIS | | 0 | 0 | 4 | 30 | 20 | 0 | 0 | 2 | 50 |
| T7804 | 0701220725 | Honours Project | PIS | | 0 | 0 | 8 | 60 | 40 | 0 | 0 | 4 | 100 |
| | | | | **Total** | **0** | **0** | **12** | **90** | **60** | **0** | **0** | **6** | **150** |

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
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## Annexure B

## Optional 'Honours' Specialisation

| Semester | Continuous Assessment | End Semester Examination | Total Credits | Total Marks |
|---|---|---|---|---|
| **Artificial Intelligence and Data Science** | | | | |
| Semester 5 | 0 | 7 | 7 | 175 |
| Semester 6 | 0 | 7 | 7 | 175 |
| Semester 7 | 0 | 6 | 6 | 150 |
| **Total** | **0** | **20** | **20** | **500** |
| **Cloud Operations and Analytics** | | | | |
| Semester 5 | 0 | 7 | 7 | 175 |
| Semester 6 | 0 | 7 | 7 | 175 |
| Semester 7 | 0 | 6 | 6 | 150 |
| **Total** | **0** | **20** | **20** | **500** |
| **Digital Security and Forensics** | | | | |
| Semester 5 | 0 | 7 | 7 | 175 |
| Semester 6 | 0 | 7 | 7 | 175 |
| Semester 7 | 0 | 6 | 6 | 150 |
| **Total** | **0** | **20** | **20** | **500** |
| **Metaverse and Game Development** | | | | |
| Semester 5 | 0 | 7 | 7 | 175 |
| Semester 6 | 0 | 7 | 7 | 175 |
| Semester 7 | 0 | 6 | 6 | 150 |
| **Total** | **0** | **20** | **20** | **500** |

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
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## Annexure C

## Optional 'Minor' Specialisation

| Catalog Course Code | Course Code | Course Title | Nature | Specialisation/ Area/ Department | Teaching Scheme (Hours Per Week) | | | Examination Scheme (Marks) | | | | Total Credits | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Practical | | Theory | | | |
| | | | | | L | T | Lab | CA | ESE | CA | ESE | | |
| **Semester : 3** | | | | | | | | | | | | | |
| **IoT and Embedded AI Specialisation Core Courses** | | | | | | | | | | | | | |
| P4798 | 0701220309 | Embedded Systems and AI | PC | | 2 | 0 | 0 | 0 | 0 | 20 | 30 | 2 | 50 |
| P4799 | 0701220310 | Real-Time Data Processing in Embedded Systems | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **4** | **0** | **2** | **15** | **10** | **40** | **60** | **5** | **125** |
| **Smart Manufacturing and Intelligent Systems Specialisation Core Courses** | | | | | | | | | | | | | |
| P6174 | 0701220311 | Foundations of Industry 5.0 and Human–Machine Collaboration | PC | | 2 | 0 | 0 | 0 | 0 | 20 | 30 | 2 | 50 |
| P6198 | 0701220312 | Artificial Intelligence for Human–Centric Systems | PC | | 2 | 0 | 2 | 15 | 10 | 20 | 30 | 3 | 75 |
| | | | | **Total** | **4** | **0** | **2** | **15** | **10** | **40** | **60** | **5** | **125** |
| **Semester : 4** | | | | | | | | | | | | | |
| **IoT and Embedded AI Specialisation Core Courses** | | | | | | | | | | | | | |
| P5823 | 0701220421 | AI-Driven IoT Applications | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| | | | | **Total** | **3** | **0** | **2** | **15** | **10** | **30** | **45** | **4** | **100** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Smart Manufacturing and Intelligent Systems Specialisation Core Courses** | | | | | | | | | | | | |
| P6178 | 0701220422 | Internet of Things (IoT) in Industry 5.0 | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| | | | | **Total** | **3** | **0** | **2** | **15** | **10** | **30** | **45** | **4** | **100** |
| | | | | | | | | | | | | | |
| **Semester : 5** | | | | | | | | | | | | | |
| **IoT and Embedded AI Specialisation Core Courses** | | | | | | | | | | | | | |
| P4880 | 0701220535 | Advanced Microcontrollers and RTOS | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| | | | | **Total** | **3** | **0** | **2** | **15** | **10** | **30** | **45** | **4** | **100** |
| **Smart Manufacturing and Intelligent Systems Specialisation Core Courses** | | | | | | | | | | | | | |
| | 0701220536 | Applied AI in Industry 5.0 | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| | | | | **Total** | **3** | **0** | **2** | **15** | **10** | **30** | **45** | **4** | **100** |
| **Semester: 6** | | | | | | | | | | | | | |
| **IoT and Embedded AI Specialisation Core Courses** | | | | | | | | | | | | | |
| P5683 | 0701220635 | Edge Computing for IoT | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| P5684 | 0701220636 | Simulation Tools for Embedded AI | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| | | | | **Total** | **3** | **0** | **4** | **30** | **20** | **30** | **45** | **5** | **125** |
| **Smart Manufacturing and Intelligent Systems Specialisation Core Courses** | | | | | | | | | | | | | |
| | 0701220637 | Digital Twins and Simulation Technologies | PC | | 3 | 0 | 2 | 15 | 10 | 30 | 45 | 4 | 100 |
| | 0701220638 | Data Analytics and Predictive Intelligence | PC | | 0 | 0 | 2 | 15 | 10 | 0 | 0 | 1 | 25 |
| | | | | **Total** | **3** | **0** | **4** | **30** | **20** | **30** | **45** | **5** | **125** |

# Symbiosis Institute of Technology, Pune

## Bachelor of Technology (Computer Science and Engineering)
## Programme Structure 2026-30
## Annexure C

## Optional 'Minor' Specialisation

| Semester | Continuous Assessment | End Semester Examination | Total Credits | Total Marks |
|---|---|---|---|---|
| **IoT and Embedded AI** | | | | |
| Semester 3 | 0 | 5 | 5 | 125 |
| Semester 4 | 0 | 4 | 4 | 100 |
| Semester 5 | 0 | 4 | 4 | 100 |
| Semester 6 | 0 | 5 | 5 | 125 |
| **Total** | **0** | **18** | **18** | **450** |
| **Smart Manufacturing and Intelligent Systems** | | | | |
| Semester 3 | 0 | 5 | 5 | 125 |
| Semester 4 | 0 | 4 | 4 | 100 |
| Semester 5 | 0 | 4 | 4 | 100 |
| Semester 6 | 0 | 5 | 5 | 125 |
| **Total** | **0** | **18** | **18** | **450** |