**Indian Institute of Engineering Science and Technology, Shibpur**

Course Structure for Two-Year M.Tech Program (From 2019 Onward)

**Department of Information Technology**

**Specialization (if any) : N.A**

**1st Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No | Course Name | Course code | Class Load/Week | | | Credit | Marks |
| L | T | P |  |  |
| 1. | Paper I: Algorithms | IT 5101 | 3 | 0 | 0 | 3 | 100 |
| 2. | Paper II: Advanced Computer Architecture | IT 5102 | 3 | 0 | 0 | 3 | 100 |
| 3. | Paper III: Advanced Communication Systems | IT 5103 | 3 | 0 | 0 | 3 | 100 |
| 4. | Paper IV: (Dep. Elective) | IT 512X | 3 | 0 | 0 | 3 | 100 |
| 5. | Paper V: (Open Elective) | IT 516X | 3 | 0 | 0 | 3 | 100 |
|  | **Theory Sub-total** |  |  |  |  | 15 |  |
| 6. | Lab1: Algorithms Laboratory | IT 5171 | 0 | 0 | 2 | 2 | 100 |
| 7. | Lab2: Advanced Computer Architecture Laboratory | IT 5172 | 0 | 0 | 2 | 2 | 100 |
| 8. | Lab3: Advanced Communication Systems Laboratory | IT 5173 | 0 | 0 | 2 | 2 | 100 |
|  | **Practical Sub-total** |  |  |  |  | 6 |  |
|  | 1st Semester Total |  | 15 |  | 6 | 21 | 800 |

**2nd Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No | Course Name | Course code | Class Load/Week | | | Credit | Marks |
| L | T | P |  |  |
| 1. | Paper VI: Advanced Database Management System | IT 5201 | 3 | 0 | 0 | 3 | 100 |
| 2. | Paper VII: Network and Information Security | IT 5202 | 3 | 0 | 0 | 3 | 100 |
| 3. | Paper VIII: Internet and Distributed Computing | IT 5203 | 3 | 0 | 0 | 3 | 100 |
| 4. | Paper IX (Dep. Elective) | IT 522X | 3 | 0 | 0 | 3 | 100 |
| 5. | Paper X (Open Elective) | IT 526X | 3 | 0 | 0 | 3 | 100 |
|  | **Theory Subtotal** |  |  |  |  | 15 |  |
| 6. | Term Paper | IT 5291 | 0 | 0 | 4 | 4 | 200 |
| 7. | Term Paper Seminar & Viva-voce/mini Project | IT 5292 | 0 | 0 | 2 | 2 | 100 |
|  | **Practical Subtotal** |  |  |  |  | 6 |  |
|  | 2nd Semester Total |  | 15 |  | 6 | 21 | 800 |

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| **Paper IV [Departmental Elective]** | | **Paper IX [Departmental Elective]** | |
| **Course Code** | **Course Title** | **Course Code** | **Course Title** |
| IT 5121  IT 5122  IT 5123  IT 5124  IT 5125  IT 5126  IT 5127 | Soft Computing Techniques  Embedded Systems and IoT  Pervasive Computing  Discrete and Computational Geometry  Information and Coding Theory  Design of Operating Systems  Mathematics for Computation | IT 5221  IT 5222  IT 5223  IT 5224  IT 5225  IT 5226 | Multimedia Coding and Compression  Mobile Computing  Approximation Algorithms  Real Time Systems  Machine Learning  Cloud and Services Computing |

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| --- | --- | --- | --- |
| **Paper IV [Open Elective ]** | | **Paper X [Open Elective]** | |
| **Course Code** | **Course Title** | **Course Code** | **Course Title** |
| IT 5161  IT 5162  IT 5163  IT 5164  IT 5165  IT 5166 | Complex Systems and Cellular Automata  Wireless Networks  Cryptographic Techniques  Medical Image Processing  Multi-core Architecture and Parallel Programming  Introduction to Embedded Systems | IT 5261  IT 5262  IT 5263  IT 5264  IT 5265  IT 5266 | CAD Algorithms for VLSI  Computational Topology  IoT Systems  DSP Algorithms  Embedded System Security  Cognitive Radio and Networks |