### B. Tech in Information Technology 2018

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| **Year** | **Subject code** | **THIRD SEMESTER** | | | | | **Subject code** | | **FOURTH SEMESTER** | | | | | | | | | |
| **Subject Name** | **L** | **T** | **P** | **C** | **Subject Name** | **L** | **T** | | | | | **P** | **C** | |
| 2 | MAT 2155 | Engineering Mathematics - III | 2 | 1 | 0 | 3 | MAT 2256 | | Engineering Mathematics - IV | 2 | 1 | | | | | 0 | 3 | |
| ICT 2153 | Data Structures | 3 | 1 | 0 | 4 | ICT 2255 | | Computer Network Protocols | 4 | 0 | | | | | 0 | 4 | |
| ICT 2154 | Digital Systems | 3 | 1 | 0 | 4 | ICT 2256 | | Computer Organization and Microprocessor Systems | 3 | 0 | | | | | 0 | 3 | |
| ICT 2155 | Object Oriented Programming | 3 | 1 | 0 | 4 | ICT 2257 | | Design and Analysis of Algorithms | 3 | 1 | | | | | 0 | 4 | |
| ICT 2156 | Principles of Data Communication | 3 | 1 | 0 | 4 | ICT 2258 | | Operating Systems | 3 | 1 | | | | | 0 | 4 | |
| ICT 2162 | Data Structures Lab | 0 | 1 | 2 | 2 | \*\*\* \*\*\*\* | | Open Elective - I |  |  | | | | |  | 3 | |
| ICT 2163 | Digital Systems Lab | 0 | 1 | 2 | 2 | ICT 2263 | | Algorithms Lab | 0 | 0 | | | | | 3 | 1 | |
| ICT 2164 | Object Oriented Programming Lab | 0 | 0 | 3 | 1 | ICT 2264 | | Microprocessor Systems Lab | 0 | 0 | | | | | 3 | 1 | |
|  |  |  |  |  |  | ICT 2265 | | Operating Systems Lab | 0 | 0 | | | | | 3 | 1 | |
|  | **TOTAL** | **14** | **7** | **7** | **24** |  | | **TOTAL** | **15** | **3** | | | | | **9** | **24** | |
|  | **Total Contact Hours (L + T + P)** | | **28** | | | |  | | **Total Contact Hours (L + T + P) + OE** | **27 + 3 = 30** | | | | | | | | |
| **FIFTH SEMESTER** | | | | | | |  | | **SIXTH SEMESTER** | | | | | | | | | |
| 3 | HUM 3052 | Essentials of Management | 2 | 1 | 0 | 3 | HUM 3051 | | Engg. Economics and Financial Management | 2 | 1 | | | | | 0 | 3 | |
| ICT 3156 | Cyber Security | 3 | 0 | 0 | 3 | ICT 3253 | | Data Warehousing and Data Mining | 3 | 0 | | | | | 0 | 3 | |
| ICT 3157 | Database Systems | 3 | 0 | 0 | 3 | ICT 3254 | | Distributed Systems | 3 | 0 | | | | | 0 | 3 | |
| ICT 3158 | Embedded Systems | 3 | 1 | 0 | 4 | ICT \*\*\*\* | | Program Elective - I | 3 | 0 | | | | | 0 | 3 | |
| ICT 3159 | Software Engineering | 3 | 1 | 0 | 4 | ICT \*\*\*\* | | Program Elective –II | 3 | 0 | | | | | 0 | 3 | |
| \*\*\* \*\*\*\* | Open Elective - II |  |  |  | 3 | \*\*\* \*\*\*\* | | Open Elective - III |  |  | | | | |  | 3 | |
| ICT 3163 | Database Systems Lab | 0 | 1 | 2 | 2 | ICT 3264 | | Advanced Technology Lab | 0 | 0 | | | | | 3 | 1 | |
| ICT 3164 | Embedded Systems Lab | 0 | 0 | 3 | 1 | ICT 3265 | | Data Warehousing and Data Mining Lab | 0 | 1 | | | | | 2 | 2 | |
| ICT 3165 | Network Programming and Simulation Lab | 0 | 0 | 3 | 1 | ICT 3266 | | Internet Tools and Technology Lab | 0 | 1 | | | | | 2 | 2 | |
|  | **TOTAL** | **14** | **4** | **8** | **24** |  | | **TOTAL** | **14** | **3** | | | | | **7** | **23** | |
|  | **Total Contact Hours (L + T + P) + OE** | | **26 + 3 =29** | | | |  | | **Total Contact Hours (L + T + P) + OE** | **24+3 = 27** | | | | | | | | |
| **SEVENTH SEMESTER** | | | | | | |  | | **EIGHTH SEMESTER** | | | | | | | | | |
| 4 | ICT \*\*\*\* | Program Elective - III | 3 | 0 | 0 | 3 | ICT 4298 | | Industrial Training | 0 | 0 | | | | | 0 | 1 | |
| ICT \*\*\*\* | Program Elective - IV | 3 | 0 | 0 | 3 | ICT 4299 | | Project Work / Practice School | 0 | 0 | | | | | 0 | 12 | |
| ICT \*\*\*\* | Program Elective- V | 3 | 0 | 0 | 3 | ICT 4296 | Project work(Only for B.Tech. Honour Students) | |  | | |  |  | | | | 20 |
| ICT \*\*\*\* | Program Elective- VI | 3 | 0 | 0 | 3 |  | | | | | | | | | | | |
| ICT \*\*\*\* | Program Elective- VII | 3 | 0 | 0 | 3 |
| \*\*\* \*\*\*\* | Open Elective - IV |  |  |  | 3 |
|  |  | **TOTAL** | **15** | **0** | **0** | **18** | **TOTAL** | | | **0** | | **0** | | | **0** | | **13** | |
|  | **Total Contact Hours (L + T + P) + OE** | | **15 + 3 = 18** | | | |  | | |  | |  | | |  | |  | |

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| **Minor Specializations**  **I. Computational Intelligence**  CSE 4053: Artificial Intelligence  ICT 4031: Computer Vision  ICT 4032: Machine Learning  CSE 4054: Soft Computing Paradigms  **II. Computer Graphics and Visualization**  CSE 4051: Augmented and Virtual Reality  ICT 4033: Computer Graphics  ICT 4031: Computer Vision  CSE 4052: Digital Image Processing  **III. Data Analytics**  ICT 4034 : Big Data Analytics  ICT 4035 : Information Retrieval  ICT 4056 : Machine Learning for Data Analytics  ICT 4036 : Semantic Web  **IV. Software System Design**  ICT 4037 : Advanced Software Engineering  ICT 4038 : Software Architecture  ICT 4039: Software Project and Quality Management  ICT 4040 : Software Construction | **V. Material Science**  PHY 4051 : Physics of Law Dimensional Materials  PHY 4052: Physics of Photonic & Energy storage devices  CHM 4051: Chemical Bonding  CHM 4052: Chemistry of Carbon compound  **VI. Business Management**  HUM 4051: Financial Management  HUM 4052: Human Resource Management  HUM 4053: Marketing Management  HUM 4054: Operation Management  **VII. Computational Mathematics**  MAT 4051: Applied Statistics and Time Series Analysis  MAT 4052: Computational Linear Algebra  MAT 4053: Computational Probability and Design of Experiments  MAT 4054: Graphs and Matrices | **Other Program Electives**  ICT 4045: Cloud Computing  ICT 4046: Deep Learning  ICT 4047: Game Theory with Computer Applications  ICT 4048: High Performance Computing  ICT 4049: Human Computer Interaction  ICT 4050: Internet of Things  ICT 4051: Natural Computing  ICT 4052: Neural Networks and Fuzzy Logic  ICT 4053: Pattern Recognition  ICT 4054: Social Network Analysis  ICT 4055: Software Reliability  **Open Electives**  ICT 4301: Computer Graphics and Animation  ICT 4302: Design and Development of Web Applications  ICT 4303: Fundamentals of Data Structures and Algorithms  ICT 4304: Machine Learning Tools and Technologies  ICT 4305: Networking with TCP/IP  ICT 4306 : Cyber Security  ICT 4307 : Game Theory & Applications |