**Bachelor of Technology in 'Computer Science and Engineering- (2019-20)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sem** | **Course Code,**  **Course Name**  **(L-T-P) Credits** | | | | | | | | | **Community Service** | **GP** | **Hrs.**  **Per week** | | | **Credits** |
| **L** | **T** | **P** |
| 1 | MAL151  Engg Maths-I  (3-0-2)4 | CSL106  FOCP-I  (2-0-6)5 | CHL150  Engg Chemistry  (1-0-2)2 | | CLL101  Effective  Communica-tion I  (2-0-0)2 | | MEP110  Engineering Graphics &  Drawing  (1-0-3)2.5 | CLL120  Human Values and  Professional Ethics  (1-0-1)1.5 | CSL110  Problem Solving  and Design  Thinking  (0-0-4)2 |  | CSR118  GP  1 Credits | 10 | 0 | 18 | 19+1  = 20 |
| 2 | MAL152  Engg Maths-II  (3-0-2)4 | CSL108  FOCP-II  (2-0-6)5 | PHY150  Engineering  Physics  (3-0-2)4 | | CLL102  Effective  Communication-II  (2-0-0)2 | | MEL150  Basics of Mechanical  and Civil Engineering  (2-0-2) 3 | ECL110  Basic of Electrical &  Electronics  Engineering  (2-0-2)3 |  |  | CSR119  GP  1 Credits | 14 | 0 | 14 | 21+1  = 22 |
| **Summer** |  | | | | | | | | |  |  |  | | |  |
| 3 | CSL209  Data Structures  (3-0-2)4 | ECL255  DE & CA  (3-0-2)4 | | CSL240  Computer  Networks  (3-0-2)4 | CSL223  Discrete Mathematics  (3-0-0)3 | | Program  Elective - I  (2-0-4)4 | CSV201  Skill  Development\*  (1-0-2)2 |  | CSS201  CS-III  (35 Hrs) | CSR218  GP  1 Credits | 15 |  | 12 | 21+1  =22 |
| 4 | CSL422  Cyber Security  (3-0-2)4 | CSL214  DBMS  (3-0-2)4 | | CSL230  Analysis and  Design of  Algorithms  (3-0-2)4 | Program Elective-  2  (2-0-4)4 | | SML300  Entrepreneurship  (3-0-0)3 | SML\*\*\* Liberal Arts  (3-0-0-)3 |  | CSS202  CS-IV  (35 Hrs)  1 Credit | CS219GP  1 Credits | 17 |  | 10 | 22+2  = 24 |
| **Summer** |  | | | | | **CST201 Industrial Training/internship (including 70 hrs of community service)** | | | | | | | | | 2 |
| 5 | CSL236  Introduction to  AI & ML / CSL242 AI for Games (3-0-2)4 | CSL303  Operating System  (3-0-2)4 | Program Elective-3  (2-0-4)4 | | Program Elective-  4  (2-0-4)4 | | Open  Elective – 1\*  (MOOC)  (3-0-0)3 |  |  | CSS301  CS-V  (35 Hrs) | CSR318  GP  1 Credits | 13 |  | 12 | 19+1  = 20 |
| 6 | CSL229  SEPM  (3-0-2)4 | Program Elective-5  (2-0-4)4 | Program Elective-6  (2-0-4)4 | | CSL318  Theory of  Computation  (3-0-2)4 | | Open  Elective-2  (3-0-0)3 | CLP300  Campus to Corporate  (1-0-0)1 | CSC301  Seminar  1 Credit | CSS302  CS-VI  (35 Hrs)  1 Credit | CSR319  GP  1 Credits | 14 |  | 12 | 21+2  = 23 |
| **Summer** |  | | | | | **CST301 Industrial Training/ internship(including 70 hrs of community service) 3** | | | | | | | | | | |
| 7 | Program Elective-  7  (2-0-4)4 | Program Elective-  8  (2-0-4)4 | CSD401  Project # 1  4 Credits | | Open  Elective – 3\*  (MOOC)  (3-0-0)3 | | CHL100  EVS  (3-0-0)3 | Foreign Language  (3-0-0)3 |  | CSS401  CS-VII  70 Hrs |  | 13 |  | 8 | 21 |
| 8 | Open  Elective – 4\*  (MOOC)  (3-0-0)3 | Open  Elective – 5\*  (MOOC)  (3-0-0)3 | CSD402  Project # 2 /Internship  6 Credits | |  | |  |  |  | CSS402  CS-VIII 70 Hrs  2 Credits |  | 6 |  |  | 12+2  = 14 |
|  | **Total** | | | | | | | | |  |  | 102 | 0 | 86 | **161+10= 171** |

\* CSV201 Skill Development (Python to be taught to students with Cyber Security specialization)

**Program Electives for each track**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tracks | **Data Science** | **IoT** | **Full Stack** | **Game Tech** | **Cyber Security** | **Other Electives** |
| Program Elective-1  SemIII | CSL 225 Programming for Data Science | CSL 225 Programming for Data Science | CSL273 Enterprise Web Applications | CSL243 Game Design & Asset Creation | CSL 281 Secure Communication and Cryptography | MAL270 Numerical Methods |
| Program Elective-2 | CSL227 Applied Computational Statistics | CSL253 Web Frameworks | CSL274 Middleware Frameworks and ORM | CSL245 Programing for Games | CSL 283 Secure Coding and Vulnerabilities | CSL223 Web Development Technologies |
| Program Elective-3 | CSL234 Data Engineering | ECL252 Micro-controllers & Sensors | CSL276 No SQL Databases | CSL244 Advanced Programming for Games | CSL 284 Digital Forensics and Malware Analysis | MAL280 Linear Algebra and its Applications |
| Program Elective-4 | CSL232 Business Intelligence and Data Visualization | CSL234 Data Engineering | CSL253 Web Frameworks | CSL343 Designing Human Computer Interfaces | CSL 383 Network security | MAL260 Probability and Statistics |
| Program Elective-5 | CSL313 Machine Learning | CSL361 Security in IoT | CSL371 Mobile Application Development | CSL246 Cross Platform Game Development | CSL387 Web and Mobile Security |  |
| Program Elective-6 | CSL311 Big Data | CSL311 Big Data | CSL373 Devops | CSL341 AR Development | CSL385 Risk Analysis and Assessment |  |
| Program Elective-7 | CSL316 Introduction to Image Processing and Recognition | CSL364 Cloud & Fog computing | CSL311 Big Data | CSL345 VR Development | CSL384 Cloud Security Essentials |  |
| Program Elective-8 | CSL312 Deep Learning | CSL358 Introduction to Robotics | CSL374 Micro service Based Applications | CSL342 XR Studio | CSL382 Blockchain |  |