Bachelor of Technology in 'Computer Science and Engineering- (2020-21)

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| Bachelor of Technology in 'Computer Science and Engineering' (2019-20)**Sem** | **Semester Course Code, Course Name****(L-T-P)Credits** | **GP** | **Community Services** | **Hrs.****Per week** | **Credits** |
| **L** | **T** | **P** |
| 1 | MAL151Engg Maths-I(3-0-2)4 | CSL106FOCP-I(2-0-4)4 | CHL150Engg Chemistry(2-0-2)3 | CLL101EffectiveCommunication-I(2-1-0)2.5 | MEP110Engineering Graphics &Drawing(1-0-4)3 | CSL110Problem Solvingand DesignThinking(2-0-2)3 |  | CSR118GP1 Credit | CSS101CS-I(70 Hrs) | 12 | 1 | 14 | 19.5+1=20.5 |
| 2 | MAL152Engg Maths-II(3-0-2)4 | CSL108FOCP-II(2-0-4)4 | PHY150EngineeringPhysics(3-0-2)4 | CLL102EffectiveCommunication-II(2-1-0)2.5 | MEL150Basic of Mechanical & Civil Engg.(2-0-2) | ECL110Basic of Electrical &ElectronicsEngineering(2-0-2)3 |  | CSR119GP1 Credit | CSS102CS-II(70 Hrs)2 Credits | 14 | 1 | 12 | 20.5+3=23.5 |
| **Summer** | Community Service (Remaining Hours) |  |  |  |  |
| 3 | CSL209Data Structures(3-0-2)4 | ECL255DE & CA(3-0-2)4 | CSL240ComputerNetworks(3-0-2)4 | CSL223Discrete Mathematics(3-0-0)3 | ProgramElective - I(2-0-4)4 | CSV201SkillDevelopment\*(1-0-2)2 |  | CSR218GP1 Credit | CSS201CS-III(35 Hrs) | 15 |  | 12 | 21+1=22 |
| 4 | CSL422Cyber Security(3-0-2)4 | CSL214DBMS(3-0-2)4 | CSL230Analysis andDesign ofAlgorithms(3-0-2)4 | Program Elective-2(2-0-4)4 | SML300Entrepreneurship(3-0-0)3 | SML\*\*\* Liberal Arts(3-0-0-)3 |  | CS219GP1 Credit | CSS202CS-IV(35 Hrs)1 Credit | 17 |  | 10 | 22+2=24 |
| **Summer** | CST201 Industrial Training/internship **(including 70 hrs of community service)** |  |  |  | 2 |
| 5 | CSL236Introduction toAI & ML / CSL242 AI for Games (3-0-2)4 | CSL303Operating System(3-0-2)4 | Program Elective-3(2-0-4)4 | Program Elective-4(2-0-4)4 | OpenElective – 1\*(MOOC)(3-0-0)3 | CLL120 HVPE (2-0-0-)2 |  | CSR318GP1 Credit | CSS301CS-V(35 Hrs) | 15 |  | 12 | 21+1=22 |
| 6 | CSL229SEPM(3-0-2)4 | Program Elective-5(2-0-4)4 | Program Elective-6(2-0-4)4 | CSL318Theory ofComputation(3-0-2)4 | OpenElective-2(3-0-0)3 | CLP300Campus to Corporate(1-0-0)1 | CSC301Seminar1 Credit | CSR319GP1 Credit | CSS302CS-VI(35 Hrs)1 Credit | 14 |  | 12 | 21+2=23 |
| **Summer** | **CST301 Industrial Training (including 70 hrs of community service)** |  |  |  | 03 |
| 7 | Program Elective-7(2-0-4)4 | Program Elective-8(2-0-4)4 | CSD401Project # 14 Credits | OpenElective – 3\*(MOOC)(3-0-0)3 | CHL100EVS(3-0-0)3 | Foreign Language(3-0-0)3 |  |  | CSS401CS-VII(70 Hrs) | 13 |  | 8 | 21 |
| 8 | OpenElective – 4\*(MOOC)(3-0-0)3 | OpenElective – 5\*(MOOC)(3-0-0)3 | CSD402Project # 2 /Internship6 Credits |  |  |  |  |  | CSS402CS-VIII(70 Hrs)2 Credits | 6 |  |  | 12+2=14 |
|  | **Total** |  |  | 106 | 2 | 80 | **163+12=175** |

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

**Program Electives for each track**

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| Tracks | Data Science | Cloud Computing | Full Stack | Game Tech | Cyber Security of Forensics | Blockchain | AI & ML | Other Electives |
| Program Elective-1  | CSL 225 Programming for Data Science | CSL225 Programming for Data Science | CSL273 Enterprise Web Applications | CSL243 Game Design & Asset Creation | CSL 281 Secure Communication and Cryptography | CSL239 Mathematics of Modern Cryptography |  CSL 225 Programming for Data Science and AI | MAL270 Numerical Methods |
| Program Elective-2  | CSL227 Applied Computational Statistics | CSL238 Introduction to Cloud Computing | CSL274 Middleware Frameworks and ORM | CSL245 Programing for Games  | CSL 283 Secure Coding and Vulnerabilities | CSL247 Intro. to blockchain technologies |  CSL227 Applied Computational Statistics | CSL223 Web Development Technologies |
| Program Elective-3  | CSL234 Data Engineering | CSL337 Cloud Architecture | CSL276 No SQL Databases | CSL244 Advanced Programming for Games | CSL 284 Digital Forensics and Malware Analysis | CSL355 Bitcoin and Cryptocurrency Technologies | CSL347 Applied Artificial Intelligence and Expert Systems | MAL280 Linear Algebra and its Applications |
| Program Elective-4  | CSL232 Business Intelligence and Data Visualization | CSL338 Virtualization & Cloud Computing | CSL253 Web Frameworks | CSL343 Designing Human Computer Interfaces | CSL 383 Network security | CSL356 Smart Contracts |  CSL348 Reinforcement Learning  | MAL260 Probability and Statistics |
| Program Elective-5  | CSL313 Machine Learning | CSL339 Big Data on Cloud | CSL371 Mobile Application Development | CSL246 Cross Platform Game Development  | CSL387 Web and Mobile Security | CSL357 Blockchain for Cyber Security |  CSL349 Artificial Intelligence for Robotics |  |
| Program Elective-6 |  CSL311 Big Data | CSL346 Artificial Intelligence & Machine Learning on Cloud | CSL373 Devops | CSL341 AR Development | CSL385 Risk Analysis and Assessment | CSL358 Blockchain Technology in Web Development |  CSL312 Deep Learning |  |
| Program Elective-7  | CSL316 Introduction to Image Processing and Recognition | CSL445 Cloud Application Development & Deployment | CSL311 Big Data | CSL345 VR Development | CSL384 Cloud Security Essentials | CSL449 Security and Privacy for Big Data Analytics |  CSL447 Computer Vision |  |
| Program Elective-8  | CSL312 Deep Learning | CSL446 Cloud Security | CSL374 Micro service Based Applications | CSL342 XR Studio | CSL382 Blockchain | CSL455 Cloud Infrastructure and Services | CSL448 Computational Linguistics and Natural Language Processing |  |