­­­Bachelor of Technology in Computer Science and Engineering 2024-25

Annexure – II

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| © | Semester Course Code, Course Name (L-T-P)Credits | | | | | | | GP | Community Services | Hrs. Per week | | | Credits |
| L | T | P |
| 1 | MAL151  Engg. Maths-I  (3-0-2)4 | CSL106  FOCP-I  (2-1-4)5 | CHL150  Engg Chemistry  (2-0-2)3 | MEP110  Engineering Graphics & Drawing  (1-0-4)3 | CSL110  Problem Solving & Design Thinking  (2-0-2)3 |  |  | CSR118 GP  1 Credit | CSS101 CS-I | 10 | 1 | 14 | 18+1  =19 |
| 2 | MAL152  Engg. Maths-II  (3-0-2)4 | CSL108 FOCP-II  (2-1-4)5 | PYL150  Engineering Physics  (3-0-2)4 | MEL160  Basic of Mechanical Engg.  (2-0-2)3 | ECL110  Basic of Electrical & Electronics  Engineering (2-0-2)3 | CLL130  Effective Comm. -I  (1-0-2)2 |  | CSR119 GP  1 Credit | CSS102 CS-II  (140 Hrs)\*\*  2 Credits | 13 | 1 | 14 | 21+3  =24 |
| Summer |  | | | | | | |  |  |  | | |  |
| 3 | CSL214 DBMS  (3-1-2)5 | ECL255  DE & CA  (3-0-2)4 | Engg. Maths III  (3-0-0)3 | CSL215  Intro To Java  (3-0-2)4 | Program Elective - I (2-0-4)4 | CLL140  Effective Comm-II  (1-0-2)2 |  | CSR218 GP  1 Credit | CSS201 CS-III | 15 | 1 | 12 | 22+1  =23 |
| 4 | CSL422  Cyber Security  (3-0-2)4 | CSL209  Data Structures  (3-0-2)4 | CLL120 HVPE  (2-0-0-)2 | Program  Elective- 2  (2-0-4)4 | SML300  Entrepreneurship  (3-0-0)3 | Open Elective – 1  (3-0-0)3 | CSV101  Skill Dev.  (0-0-2)1 | CSR219 GP  1 Credit | CSS202 CS-IV  (140 Hrs) \*\*  2 Credits | 16 | 0 | 10 | 21+3  =24 |
| Summer | CST201 Industrial Training/internship | | | | | | |  |  |  | | | 2 |
| 5 | CSL236  Introduction to AI & ML / CSL242 AI for Games  (3-0-2)4 | CSL-303  Operating System  (3-0-2)4 | Program Elective-3  (2-0-4)4 | CSL315  Adv Java  (3-0-2)4 | Open  Elective – 2  (3-0-0)3 | CSL240  Computer Networks  (3-0-2)4 | CSC 301  Seminar  1 credit | CSR318 GP  1 Credit | CSS301 CS-V | 17 | 0 | 12 | 24+1  =25 |
| 6 | CSL229 SEPM (3-0-2)4 | CSL230  Analysis and Design of  Algorithms  (3-0-2) 4 | Program Elective-4  (2-0-4)4 | CSL 238  Introduction to Cloud Computing (3-0-2)4 | Open Elective– 3  (3-0-0) 3 | Program Elective- 5  (2-0-4) 4 |  | CSR319 GP  1 Credit | CSS302 CS-VI  (140 Hrs)\*\*  2 Credits | 16 | 0 | 14 | 23+3  =26 |
| Summer | CST301 Industrial Training/ internship | | | | | | |  |  |  | | | 04 |
| 7 | Program Elective- 6  (2-0-4)4 | Program Elective- 7  (2-0-4)4 | CSD401  Project # 1  4 Credits | Open Elective-4  (MOOC)  (3-0-0)3 | CHL100 EVS  (3-0-0)3 | Foreign Language (3-0-0)3 |  |  | CSS401 CS-VII | 13 | 0 | 8 | 21 |
| 8 | Liberal Arts Elective  (3-0-0-)3  (MOOC) | Open Elective – 5 (MOOC)  (3-0-0)3 | CSD402  Project # 2  /Internship 6 Credits |  |  |  |  |  | CSS402CS-VIII (140 Hrs)  2 Credits | 6 | 0 | 0 | 12+2  =14 |
|  | Total | | | | | | |  |  | 106 | 3 | 84 | 162+6+14=182 |

\*\* Students can utilize the summer/winter break period to complete the remaining 140 Community Service hours every year.

* The University shall conduct introductory sessions in the 1st semester on soft skills, which are a set of transferable skills and key personal traits essential for personality development.
* The University shall conduct special sessions in the 4th semester to reinforce the learnings of introductory training sessions conducted in the first year.
* Two value-added courses over and above the programme scheme shall be offered during the 5th & 6th semesters to impart special skills to students for enhancing their employability.
* Advanced sessions on soft skills shall be conducted in the 7th semester to hone up the preparedness of students for placements and make them industry ready for national and international jobs.

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| **Tracks** | **Tracks** | **Data Science** | **Cloud Computing** | **Full Stack** | **Game Tech** | **Cyber Security** | **Blockchain** | **AI & ML** | **IoT & 5G** | **Other Electives** |
| **Program Elective-1** | PE 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 | ECL256  Embedded Systems | MAL270  Numerical Methods |
| **Program Elective-2** | PE 2 | CSL227  Applied Computational Statistics | CSL337 Cloud Architecture | CSL274  Middleware Frameworks and ORM | CSL245  Programing for Games | CSL 284 Digital Forensics and Malware Analysis | CSL247  Intro.to blockchain technologies | CSL347 Applied Artificial Intelligence and Expert Systems | CSL238  Introduction to Cloud  Computing | CSL223 Web  Development Technologies |
| **Program Elective-3** | PE 3 | CSL232  Business Intelligence and Data  Visualization | CSL338  Virtualization & Cloud Computing | CSL276 No SQL  Databases | CSL244  Advanced Programming for Games | CSL 383  Network security | CSL355  Bitcoin and Cryptocurrency Technologies | CSL348  Reinforcement Learning | ECL252  Micro Controllers & Sensors | MAL280  Linear Algebra and its Applications |
| **Program Elective-4** | PE 4 | CSL313  Machine  Learning | CSL339 Big Data on Cloud | CSL253 Web  Frameworks | CSL343  Designing Human Computer  Interfaces | CSL387  Web and Mobile  Security | CSL356 Smart Contracts | CSL349 Artificial Intelligence for Robotics | ECL316  Wireless & Mobile Communication | MAL260  Probability and Statistics |
| **Program Elective-5** | PE 5 | CSL311 Big  Data | CSL346 Artificial Intelligence & Machine Learning on Cloud | CSL371 Mobile Application  Development | CSL246 Cross Platform Game  Development | CSL385 Risk Analysis and Assessment | CSL357  Blockchain for  Cyber Security | CSL312 Deep Learning | ECL352  Design for IOT | CSL 318  Theory of Computation |
| **Program Elective-6** | PE 6 | CSL316  Introduction to Image Processing and  Recognition | CSL445 Cloud Application Development & Deployment | CSL373 Devops | CSL341 AR  Development | CSL384 Cloud Security Essentials | CSL358  Blockchain Technology in Web  Development | CSL447  Computer Vision | ECL367  Introduction to 5G  Technologies |  |
| **Program Elective-7** | PE 7 | CSL312 Deep Learning | CSL446 Cloud Security | CSL374 Micro service Based Applications | CSL345 VR  Development | CSL382  Blockchain | CSL449 Security and Privacy for Big Data Analytics | CSL448  Computational Linguistics and Natural Language  Processing | ECL368 Network and Security in IoT |  |

**Program Electives for each track**