

**CS Major Prescribed Electives**

| Group                                | Code   | Title                                        |
|--------------------------------------|--------|----------------------------------------------|
| Artificial Intelligence              | SC3000 | Artificial Intelligence*                     |
|                                      | SC4000 | Machine Learning                             |
|                                      | SC4001 | Neural Networks and Deep Learning            |
|                                      | SC4002 | Natural Language Processing                  |
|                                      | SC4003 | Intelligent Agents                           |
| Security                             | SC3010 | Computer Security*                           |
|                                      | SC4010 | Applied Cryptography                         |
|                                      | SC4011 | Security Management                          |
|                                      | SC4012 | Software Security                            |
|                                      | SC4013 | Application Security                         |
|                                      | SC4014 | Concepts and Techniques for Malware Analysis |
|                                      | SC4015 | Cyber Physical System Security               |
|                                      | SC4016 | Cyber Threat Intelligence                    |
| Data Management and Analytics        | SC3020 | Database System Principles                   |
|                                      | SC4020 | Data Analytics and Mining                    |
|                                      | SC4021 | Information Retrieval                        |
|                                      | SC4022 | Network Science                              |
|                                      | SC4023 | Big Data Management                          |
|                                      | SC4024 | Data Visualisation                           |
| Networking and Mobility              | SC3030 | Advanced Computer Networks                   |
|                                      | SC4030 | Wireless and Mobile Communication            |
|                                      | SC4031 | IoT - Communications and Networking          |
|                                      | SC4032 | Information Theory                           |
|                                      | SC4033 | Network Security                             |
| Software Engineering and Programming | SC3040 | Advanced Software Engineering                |
|                                      | SC4040 | Advanced Topics in Algorithms                |
|                                      | SC4041 | Programming Languages                        |
|                                      | SC4242 | Compiler Techniques                          |
| Systems and Architecture             | SC3050 | Advanced Computer Architecture               |
|                                      | SC4050 | Parallel Computing                           |
|                                      | SC4051 | Distributed Systems                          |
|                                      | SC4052 | Cloud Computing                              |
|                                      | SC4053 | Blockchain Technology                        |
|                                      | SC4054 | Simulation and Modelling                     |
| Visual and Interactive Computing     | SC3060 | Computer Graphics and Visualisation          |
|                                      | SC3061 | Human-Computer Interaction                   |
|                                      | SC4060 | Virtual and Augmented Reality                |
|                                      | SC4061 | Computer Vision                              |

**CS Specialization Tracks (Minimum five within a group)****ARTIFICIAL INTELLIGENCE**

SC3000 Artificial Intelligence

SC4000 Machine Learning

SC4001 Neural Networks and Deep Learning

SC4002 Natural Language Processing

SC4003 Intelligent Agents

SC4020 Data Analytics and Mining

SC4061 Computer Vision

**SECURITY**

SC3010 Computer Security

SC4010 Applied Cryptography

SC4011 Security Management

SC4012 Software Security

SC4013 Application Security

SC4014 Concepts and Techniques for Malware Analysis

SC4015 Cyber Physical System Security

SC4016 Cyber Threat Intelligence

SC4033 Network Security

**DATA SCIENCE**

SC3020 Database System Principles

SC4020 Data Analytics and Mining

SC4021 Information Retrieval

SC4000 Machine Learning

SC4002 Natural Language Processing

SC4022 Network Science

SC4023 Big Data Management

SC4024 Data Visualisation