STRUCTURE OF THE SYLLABUS FOR 4 YEAR UG PROGRAMME

ROYAL SCHOOL OF ENGINEERING & TECHNOLOGY

B.Tech Computer Science and Engineering

| | _ | SEMESTER 1 | |
|--------|--------------|--|--------|
| S. No. | Subject Code | Names of subjects | Credit |
| 1 | PHY022C101 | Physics | 4 |
| 2 | MAT022C102 | Mathematics – I | 4 |
| 3 | CSE022C103 | Basic Electrical Engineering | 4 |
| 4 | CEE022C104 | Engineering Graphics & Design | 4 |
| 5 | BHS022A101 | Universal Human Values: Understanding Harmony and Ethical Human Conduct | 2 |
| 6 | COD022S116 | Design Thinking | 1 |
| 7 | CSE022S117 | Ideation Lab | 1 |
| | | TOTAL | 20 |
| 8 | | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 3 |
| | | SEMESTER 2 | |
| S. No. | Subject Code | Names of subjects | Credit |
| 1 | CHY022C201 | Chemistry | 4 |
| 2 | MAT022C202 | Mathematics – II | 4 |
| 3 | CSE022C203 | Biology for Engineers | 3 |
| 4 | CSE022C204 | Programming for Problem Solving | 4 |
| 5 | MEE022C215 | Manufacturing Practices Workshop | 2 |
| 6 | CEN022A201 | English for Technical Writing | 2 |
| 7 | CSE022S217 | Sports and Yoga | 1 |
| | | TOTAL | 20 |
| 8 | | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 3 |
| | T | SEMESTER 3 | |
| S. No. | Subject Code | Names of subjects | Credit |
| 1 | MAT022C301 | Discrete Mathematics | 4 |
| 2 | CSE022C302 | Data Structures and Algorithms | 4 |
| 3 | CSE022C303 | Computer Organisation and Architecture | 3 |
| 5 | CSE022C304 | Digital Logic and Design | 4 |
| | CSE022K305 | Indian Knowledge System-I Open Elective-I (Programming with | 2 |
| 6 | CSE022G306 | Python) | 3 |
| 7 | CSE022C327 | Internship-I | 2 |
| 8 | | TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 22 |

| S. No. | Subject Code | Names of subjects | Credit |
|----------|----------------------------|--|-------------|
| 1 | CSE022C401 | OOP using C++ | 4 |
| 2 | CSE022C402 | Database Management Systems | 4 |
| 3 | CSE022C403 | Formal Language and Automata Theory | 4 |
| 4 | CSE022C404 | Microprocessor | 3 |
| 5 | CSE022K405 | Indian Knowledge System-II | 2 |
| 6 | CSE022G406 | Open Elective-II | 3 |
| 7 | CSE022C427 | Internship-II | 2 |
| <u> </u> | 002020127 | TOTAL | 22 |
| 8 | | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 3 |
| | | SEMESTER 5 | |
| S. No. | Subject Code | Names of subjects | Credit |
| 1 | CSE022C501 | Operating Systems | 4 |
| 2 | CSE022C502 | Computer Based Numerical and Statistical Techniques | 4 |
| 3 | CSE022C503 | Design and Analysis of Algorithms | 3 |
| 4 | CSE022C504 | Data Communication | 3 |
| 5 | BSA022C505 | Principles of Management & Organisational Behaviour | 3 |
| 6 | CSE022G506 | Open Elective-III | 3 |
| 7 | CSE022C527 | Internship-III | 2 |
| | | TOTAL | 22 |
| 8 | | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 3 |
| | | SEMESTER 6 | |
| S. No. | Subject Code | Names of subjects | Credit |
| 1 | CSE022C601 | Computer Networks | 4 |
| 2 | CSE022C602 | Compiler Design | 4 |
| 3 | CSE022C603 | Software Engineering | 3 |
| 4 | CSE022D60X | Professional Elective Course-I | 4 |
| 5 | CSE022D60X | Professional Elective Course-II | 4 |
| 6 | CSE022G606 | Open Elective-IV | 3 |
| 7 | CSE022C627 | Internship-IV | 2 |
| | | TOTAL | 24 |
| 8 | | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 3 |
| C N- | C-line Code | SEMESTER 7 | C 1'4 |
| S. No. | Subject Code CSE022C701 | Names of subjects | Credit 4 |
| | | Introduction to Artificial Intelligence | |
| 3 | CSE022C702 CSE022D70X | Web Technology Professional Elective Course-III | 4 |
| 4 | | Professional Elective Course-III Professional Elective Course-IV | 4 |
| | CSE022D70X | | |
| 5 | CSE022C725 | Internship-V | 2 2 |
| 6 | CSE022C726 | Project-I | |
| | | TOTAL | 20 |
| 7 | | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 3 |

| 5 | | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | 3 |
|---|------------|--|----|
| | | TOTAL | 18 |
| 4 | CSE022C824 | Project-II | 6 |
| 3 | CSE022D80X | PEC-V | 4 |
| 2 | CSE022C802 | Cryptography and Network Security | 4 |
| 1 | CSE022C801 | Introduction to Machine Learning | 4 |

| PEC Tracks | Course Codes | Subjects |
|------------------------|---------------------|--|
| | CSE022D601 | PEC 1: Mobile Computing |
| NI 4 1 | CSE022D602 | PEC 2: Big Data Analytics |
| Network Engineering | CSE022D701 | PEC 3: Cloud Computing |
| Engineering | CSE022D702 | PEC 4: Wireless Sensor Networks |
| | CSE022D801 | PEC 5: Internet of Things |
| | CSE022D603 | PEC 1: Introduction to Semiconductor Devices |
| | CSE022D604 | PEC 2: VLSI Design |
| Semiconductors | CSE022D703 | PEC 3: Embedded Systems and IOT |
| Semiconductors | CSE022D704 | PEC 4: Micro Electro Mechanical Systems / |
| | | VHDL |
| | CSE022D802 | PEC 5: Nanoelectronics |
| | CSE022D605 | PEC 1: Social Network Analysis |
| | CSE022D606 | PEC 2: Digital Image Processing |
| General Track | CSE022D705 | PEC 3: Introduction to Data Science |
| | CSE022D706 | PEC 4: Fundamentals of Quantum Computing |
| | CSE022D801 | PEC 5: Introduction to Cyber Security |

| List of Open Electives to be offered by Department of CSE | | |
|---|---|--|
| Open Elective-I | Programming with Python (CSE022G306) | |
| Open Elective-II | Fundamentals of Web Design (CSE022G406) | |
| Open Elective-III | Introduction to AI (CSE022G506) | |
| Open Elective-IV | Fundamentals of IOT (CSE022G606) | |

STRUCTURE OF THE SYLLABUS FOR 4 YEAR UG PROGRAMME

ROYAL SCHOOL OF ENGINEERING & TECHNOLOGY

B.Tech Artificial Intelligence and Data Science

| S. No. Subject Code Names of subjects Credit 1 PHY022C101 Physics 4 2 MAT022C102 Mathematics – I 4 3 CSE022C103 Basic Electrical Engineering 4 4 CEE022C104 Engineering Graphics & Design 4 5 BHS022A101 Universal Human Values: Understanding Harmony and Ethical Human Conduct 1 6 COD022S116 Design Thinking 1 7 CSE022S117 Ideation Lab 1 TOTAL 20 Biolosy/MoOCS/SWAYAM] 3 SEMESTER 2 S.No. Subject Code Names of subjects Credit 1 CHY022C201 Chemistry 4 4 CSE022C203 Biology for Engineers 3 4 CSE022C204 Programming for Problem Solving 4 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 | SEMESTER 1 | | | | | |
|--|--|--------------|---|-------------------|--------|--|
| Mathematics - I | S. No. | Subject Code | | Credit | | |
| Section | 1 | PHY022C101 | Physics | 4 | | |
| 4 CEE022C104 Engineering Graphics & Design 4 5 BHS022A101 Universal Human Values: Understanding Harmony and Ethical Human Conduct 2 6 COD022S116 Design Thinking 1 7 CSE022S117 Ideation Lab 1 TOTAL 20 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 2 S. No. Subject Code Subjects Credit 1 CHY022C201 Chemistry 4 2 MAT022C202 Mathematics — II 4 3 CSE022C203 Biology for Engineers 3 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 S. No. Subject Code Names of subjects Credit <td>2</td> <td>MAT022C102</td> <td>Mathematics – I</td> <td>4</td> | 2 | MAT022C102 | Mathematics – I | 4 | | |
| Discrete Human Values: Understanding Harmony and Ethical Human Conduct CSC022S116 Design Thinking 1 | 3 | CSE022C103 | Basic Electrical Engineering | 4 | | |
| 5 BHS022A101 Universal Human Values: Understanding Harmony and Ethical Human Conduct 2 6 COD022S116 Design Thinking 1 7 CSE022S117 Ideation Lab 1 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 2 S.No. Subject Code Insistry 4 1 CHY022C201 Chemistry 4 2 MAT022C202 Mathematics — II 4 3 CSE022C203 Biology for Engineers 3 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 4 9 ARI022C301 Discrete Mathematics 4 1 MAT022C302 Da | 4 | CEE022C104 | Engineering Graphics & Design | 4 | | |
| TOTAL 20 | 5 | BHS022A101 | | 2 | | |
| B | 6 | COD022S116 | Design Thinking | 1 | | |
| Solution Subject Code Names of subjects Semester | 7 | CSE022S117 | Ideation Lab | 1 | | |
| Semester 2 Semester 3 Semester 4 Semester 3 Semester 4 Semester 3 Semester 4 Semester 3 Semester 4 Semester 3 Semester 3 Semester 4 Semester 3 Semester 4 Semester 4 Semester 4 Semester 4 Semester 5 Semester 4 Semester 5 Semester 5 Semester 6 Sem | | | TOTAL | 20 | | |
| S. No. Subject Code Names of subjects Credit 1 CHY022C201 Chemistry 4 2 MAT022C202 Mathematics – II 4 3 CSE022C203 Biology for Engineers 3 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 3 S. No. Subject Code Names of subjects Credit 1 MAT022C301 Discrete Mathematics 4 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 4 ARI022C305 Indian Knowledge System-I 2 6 ARI022C306 | 8 | | ` • / • | 3 | | |
| 1 CHY022C201 Chemistry 4 2 MAT022C202 Mathematics – II 4 3 CSE022C203 Biology for Engineers 3 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 3 S. No. Subject Code through MOOCS/ SWAYAM] A Range of Subjects Credit 1 MAT022C301 Discrete Mathematics 4 2 A RI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022C305 Indian Knowledge System-I 2 6 ARI022C306 Open Elective-I 3 7 ARI022 | | | SEMESTER 2 | | | |
| 2 MAT022C202 Mathematics – II 4 3 CSE022C203 Biology for Engineers 3 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 5. No. Subject Code Indeptional Macrosof Subjects Credit 1 MAT022C301 Discrete Mathematics 4 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C302 Data Structures and Algorithms 4 4 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022C306 Open Elective-I 3 7 ARI022C307 Internship-I <td r<="" td=""><td>S. No.</td><td>Subject Code</td><td>Names of subjects</td><td>Credit</td></td> | <td>S. No.</td> <td>Subject Code</td> <td>Names of subjects</td> <td>Credit</td> | S. No. | Subject Code | Names of subjects | Credit | |
| 3 CSE022C204 Biology for Engineers 3 3 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 TOTAL 20 | 1 | CHY022C201 | Chemistry | 4 | | |
| 4 CSE022C204 Programming for Problem Solving 4 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 TOTAL 20 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 3 S. No. Subject Code Names of subjects Credit 1 MAT022C301 Discrete Mathematics 4 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022C305 Indian Knowledge System-I 2 6 ARI022C306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. | 2 | MAT022C202 | Mathematics – II | 4 | | |
| 5 MEE022C215 Manufacturing Practices Workshop 2 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 TOTAL 20 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 3 S. No. Subject Code Names of subjects Credit 1 MAT022C301 Discrete Mathematics 4 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 | 3 | CSE022C203 | Biology for Engineers | 3 | | |
| 6 CEN022A201 English for Technical Writing 2 7 CSE022S217 Sports and Yoga 1 TOTAL 20 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 3 S. No. Subject Code Names of subjects Credit 1 MAT022C301 Discrete Mathematics 4 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 | 4 | CSE022C204 | Programming for Problem Solving | 4 | | |
| 7 CSE022S217 Sports and Yoga 1 TOTAL 20 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 3 S. No. Subject Code Image: Subjects Subject Su | 5 | MEE022C215 | Manufacturing Practices Workshop | 2 | | |
| TOTAL 20 | 6 | CEN022A201 | English for Technical Writing | 2 | | |
| Honors/Minor (Optional) To be obtained through MOOCS/ SWAYAM SEMESTER 3 | 7 | CSE022S217 | Sports and Yoga | 1 | | |
| S. No. Subject Code Names of subjects Credit | | | TOTAL | 20 | | |
| S. No. Subject Code Names of subjects Credit 1 MAT022C301 Discrete Mathematics 4 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | 8 | | \ 1 / L | 3 | | |
| 1 MAT022C301 Discrete Mathematics 4 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | | | | |
| 2 ARI022C302 Data Structures and Algorithms 4 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | | Credit | | |
| 3 ARI022C303 Computer Organisation and Architecture 3 4 ARI022C304 Digital Logic and Design 4 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | | 4 | | |
| 4 ARI022C304 Digital Logic and Design 4 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | e e | | | |
| 5 ARI022K305 Indian Knowledge System-I 2 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | | | | |
| 6 ARI022G306 Open Elective-I 3 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | | | | |
| 7 ARI022C327 Internship-I 2 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | | | | |
| TOTAL 22 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | | | | | | |
| 8 Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] 3 SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | / | AKI022C321 | 1 | | | |
| SEMESTER 4 S. No. Subject Code Names of subjects Credit 1 ARI022C401 OOP using C++ 4 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | 8 | | Honors/Minor (Optional) [To be obtained | | | |
| S. No.Subject CodeNames of subjectsCredit1ARI022C401OOP using C++42ARI022C402Database Management Systems43ARI022C403Formal Language and Automata Theory4 | | 1 | | | | |
| 1ARI022C401OOP using C++42ARI022C402Database Management Systems43ARI022C403Formal Language and Automata Theory4 | S. No. | Subject Code | | Credit | | |
| 2 ARI022C402 Database Management Systems 4 3 ARI022C403 Formal Language and Automata Theory 4 | 1 | | | | | |
| 3 ARI022C403 Formal Language and Automata Theory 4 | 2 | | | | | |
| | | | ŭ į | 4 | | |
| | 4 | ARI022C405 | | 3 | | |

| Subject Code ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 ARI022C726 Subject Code ARI022C803 ARI022C802 ARI022C802 ARI022C802 ARI022C824 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 8 Names of subjects Predictive Modelling & Optimization Techniques Cryptography and Network Security PEC-V Project-II TOTAL | 3 Credit 4 4 4 2 2 20 3 Credit 4 4 4 6 18 |
|---|---|---|
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 ARI022C726 Subject Code ARI022C803 ARI022C802 ARI022D80X | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 8 Names of subjects Predictive Modelling & Optimization Techniques Cryptography and Network Security PEC-V | Credit 4 4 4 2 2 20 3 Credit 4 4 4 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 ARI022C726 Subject Code ARI022C803 ARI022C802 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 8 Names of subjects Predictive Modelling & Optimization Techniques Cryptography and Network Security | Credit 4 4 4 2 2 20 3 Credit 4 4 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 ARI022C726 Subject Code ARI022C803 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 8 Names of subjects Predictive Modelling & Optimization Techniques | Credit 4 4 4 4 2 2 2 20 3 Credit 4 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 ARI022C726 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 8 Names of subjects | Credit 4 4 4 2 2 2 20 3 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 ARI022C726 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 8 | Credit 4 4 4 4 2 2 2 3 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | Credit 4 4 4 4 2 2 20 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL Honors/Minor (Optional) [To be obtained | Credit 4 4 4 4 2 2 20 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I TOTAL | Credit 4 4 4 4 2 2 20 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V Project-I | 4 4 4 4 2 2 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X ARI022C725 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV Internship-V | 4 4 4 4 4 2 |
| ARI022C703 ARI022C702 ARI022D70X ARI022D70X | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III Professional Elective Course-IV | 4 4 4 4 |
| ARI022C703 ARI022C702 ARI022D70X | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology Professional Elective Course-III | 4 4 4 |
| ARI022C703 ARI022C702 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI Web Technology | Credit 4 4 |
| ARI022C703 | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects Data and Visual Analytics in AI | Credit 4 |
| · | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] Names of subjects | Credit |
| Subject Code | Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] | |
| | Honors/Minor (Optional) [To be obtained | 3 |
| | SEMESTER 7 | |
| | | |
| | TOTAL | 24 |
| RI022C627 | Internship-IV | 2 |
| RI022G606 | OEC-II | 3 |
| RI022D60X | Professional Elective Course-II | 4 |
| RI022D60X | Professional Elective Course-I | 4 |
| RI022C603 | Software Engineering | 3 |
| RI022C604 | Introduction to Deep Learning | 4 |
| RI022C601 | | 4 |
| Subject Code | | Credit |
| | through MOOCS/ SWAYAM] | 3 |
| | Honors/Minor (Optional) [To be obtained | 2 |
| | TOTAL | 22 |
| ARI022C527 | Internship-III | 2 |
| ARI022G506 | | 3 |
| BSA022C505 | Principles of Management & Organisational Behaviour | 3 |
| ARI022C505 | Introduction to AI and ML | 3 |
| ARI022C503 | Design and Analysis of Algorithms | 3 |
| ARI022C504 | Data Communication | 4 |
| ARI022C501 | Operating Systems | 4 |
| Subject Code | Names of subjects | Credit |
| | | |
| | | 3 |
| | TOTAL | 22 |
| RI022C427 | Internship-II | 2 |
| RI022G406 | Open Elective-II | 3 |
| | Subject Code ARI022C501 ARI022C504 ARI022C505 BSA022C505 ARI022C506 ARI022C527 Subject Code RI022C601 RI022C604 RI022C603 RI022D60X RI022D60X RI022C606 | RI022G406 RI022C427 Internship-II TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 5 Subject Code RI022C501 Operating Systems ARI022C503 Design and Analysis of Algorithms ARI022C505 Introduction to AI and ML Principles of Management & Organisational Behaviour ARI022C506 Open Elective-III ARI022C527 Internship-III TOTAL Honors/Minor (Optional) [To be obtained through MOOCS/ SWAYAM] SEMESTER 6 Subject Code RI022C601 Ri022C603 Ri022C603 Ri022C603 Ri022C603 Ri022D60X Professional Elective Course-I RI022C606 RI022C606 RI022C606 RI022C607 Internship-IV |

| PEC Tracks | Subjects |
|-------------------------|---|
| | PEC 1: Advanced Deep Learning (ARI022D601) |
| | PEC 2: Natural Language Processing (ARI022D601) |
| Artificial Intelligence | PEC 3: Computer Vision (ARI022D701) |
| | PEC 4: Reinforcement Learning (ARI022D702) |
| | PEC 5: AI for Robotics (ARI022D801) |

| List of Open Electives to be offered by Department of CSE | | |
|---|---|--|
| Open Elective-I | Programming with Python (ARI022G306) | |
| Open Elective-II | Fundamentals of Web Design (ARI022G406) | |
| Open Elective-III | Introduction to AI (ARI022G506) | |
| Open Elective-IV | Fundamentals of IOT (ARI022G606) | |

STRUCTURE OF THE SYLLABUS FOR 2 YEAR PG PROGRAMME

ROYAL SCHOOL OF ENGINEERING & TECHNOLOGY

M.Tech Computer Science and Engineering

| | SEMESTER 1 | | | | |
|-----|--------------|---|--------|--|--|
| S.N | Subject Code | Names of subjects | CREDIT | | |
| 1 | CSE024C101 | Internet Protocols and Network Design | 4 | | |
| 2 | CSE024C102 | Mathematical Foundations of Computer Science | 4 | | |
| 3 | CSE024C103 | Distributed Operating Systems | 4 | | |
| 4 | CSE024C111 | Internet Protocols and Network Design Lab | 1 | | |
| 5 | CSE024C112 | Mathematical Foundations of Computer Science Lab | 1 | | |
| 6 | CSE024C113 | Distributed Operating Systems Lab | 1 | | |
| 7 | CSE024D10X | PEC-I | 4 | | |
| 8 | CSE024D11X | PEC-I Lab | 1 | | |
| | | TOTAL | 20 | | |
| | | SEMESTER 2 | | | |
| S.N | Subject Code | Names of subjects | CREDIT | | |
| 1 | CSE024C201 | Modern Database Systems | 4 | | |
| 2 | CSE024C202 | Advanced Algorithm Designing | 4 | | |
| 3 | CSE024C211 | Modern Database Systems Lab | 1 | | |
| 4 | CSE024C212 | Advanced Algorithm Designing Lab | 1 | | |
| 5 | CSE024D20X | PEC-II | 4 | | |
| 6 | CSE024D21X | PEC-II Lab | 1 | | |
| 7 | CSE024D20X | PEC-III | 4 | | |
| 8 | CSE024D21X | PEC-III Lab | 1 | | |
| | | TOTAL | 20 | | |
| | SEMESTER 3 | | | | |
| S.N | Subject Code | Names of subjects | CREDIT | | |
| 1 | CSE024C301 | Soft Computing | 4 | | |
| 2 | CSE024C302 | Internet Security and Cryptographic Protocols | 4 | | |
| 3 | CSE024C301 | Soft Computing Lab | 1 | | |
| 4 | CSE024C302 | Internet Security and Cryptographic Protocols Lab | 1 | | |

| 5 | CSE024D30X | PEC-IV | 4 |
|-----|--------------|-----------------------------|--------|
| 6 | CSE024D31X | PEC-IV Lab | 1 |
| 7 | CSE024C324 | Summer Training/ Internship | 2 |
| 8 | CSE024C325 | Dissertation-I | 8 |
| | | TOTAL | 24 |
| | | SEMESTER 4 | |
| S.N | Subject Code | Names of subjects | CREDIT |
| 1 | CSE024C421 | Dissertation-II | 16 |
| | | TOTAL | 16 |

| SEMESTER | TOTAL CREDITS |
|----------|---------------|
| I | 20 |
| II | 20 |
| III | 24 |
| IV | 16 |
| TOTAL | 80 |

Note: *** All Engineering Graduates have to undergo 2-year PG Course *** Exit after 1st year will be awarded PG Diploma

| DSE Tracks | Subject Name |
|--|---|
| Track 1: Artificial Intelligence | Minor 1: Foundations of AI (CSE024D101) |
| | Minor 2: Machine Learning & Deep Learning (CSE024D201) |
| | Minor 3: Natural Language Processing (CSE024D202) |
| | Minor 4: Computer Vision/ Generative AI and LLMs (CSE024D301) |
| Track 2: Data Analytics | Minor 1: Data Mining (CSE024D102) |
| | Minor 2: Statistical Computing (CSE024D203) |
| | Minor 3: Big Data Analytics (CSE024D204) |
| | Minor 4: Cloud Computing for Big Data (CSE024D302) |
| Track 3: Image Processing/ Computer Vision | Minor 1: Digital Image Processing (CSE024D101) |
| | Minor 2: Machine Learning & Deep Learning (CSE024D201) |
| | Minor 3: Remote Sensing and GIS (CSE024D206) |
| | Minor 4: Computer Vision/ Generative AI and LLMs (CSE024D301) |