

Study Scheme UG Programme: B.E. in Computer Science and Engineering (2020 Batch)

| Semester-I | | | | | | | |
|------------|----------|---|-----------|----------|-----------|-----------|-----------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | BSMA-401 | Engineering Mathematics I | 3 | 1 | 0 | 4 | 4 |
| 2 | BSPH-401 | Applied Physics | 3 | 1 | 0 | 4 | 4 |
| 3 | ESEE-401 | Elements of Electrical Engineering | 2 | 1 | 0 | 3 | 3 |
| 4 | ESCS-401 | Elements of Computer Engineering | 2 | 0 | 0 | 2 | 2 |
| 5 | ESEC-401 | Elements of Electronics Engineering | 2 | 0 | 0 | 2 | 2 |
| 6 | BSPH-402 | Applied Physics Lab | 0 | 0 | 2 | 2 | 1 |
| 7 | ESEE-402 | Elements of Electrical Engineering Lab | 0 | 0 | 2 | 2 | 1 |
| 8 | ESCS-402 | Elements of Computer Engineering Lab | 0 | 0 | 4 | 4 | 2 |
| 9 | ESEC-402 | Elements of Electronics Engineering Lab | 0 | 0 | 2 | 2 | 1 |
| | | Total | 12 | 3 | 10 | 25 | 20 |

| Semester-II A | | | | | | | |
|---------------|----------|---|-----------|----------|-----------|-----------|-----------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | BSMA-402 | Engineering Mathematics II | 3 | 1 | 0 | 4 | 4 |
| 2 | BSCH-401 | Applied Chemistry | 3 | 1 | 0 | 4 | 4 |
| 3 | ESME-401 | Elements of Mechanical Engineering | 2 | 1 | 0 | 3 | 3 |
| 4 | ESME-402 | Workshop Technology and Practice | 1 | 0 | 0 | 1 | 1 |
| 5 | HSMC-401 | English Communication and Soft Skills | 1 | 0 | 0 | 1 | 1 |
| 6 | BSCH-402 | Applied Chemistry Lab | 0 | 0 | 2 | 2 | 1 |
| 7 | ESME-403 | Elements of Mechanical Engineering Lab | 0 | 0 | 2 | 2 | 1 |
| 8 | ESME-404 | Engineering Drawing | 0 | 0 | 4 | 4 | 2 |
| 9 | ESME-405 | Workshop Technology and Practice Lab | 0 | 0 | 4 | 4 | 2 |
| 10 | HSMC-402 | English Communication and Soft Skills Lab | 0 | 0 | 2 | 2 | 1 |
| 11 | MCCH-401 | Environmental Studies | 3 | 0 | 0 | 3 | 0 |
| | | Total | 13 | 3 | 14 | 30 | 20 |

| Semester-IIB | | | | | | | |
|--------------|----------|--|---|---|---|------|----------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | TPIN-421 | Practical Training During Summer Vacations (In-house) 02 weeks | | | | 40 | 1 (S/US) |
| 2 | TPIN-422 | Technical Competency | | | | 40 | 1 (S/US) |

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| Semester-III | | | | | | | |
|--------------|----------|---------------------------------------|-----------|----------|-----------|-----------|-----------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | BSMA-501 | Numerical and Statistical Methods | 3 | 0 | 0 | 3 | 3 |
| 2 | PCCS-511 | Digital Electronics | 3 | 0 | 0 | 3 | 3 |
| 3 | PCCS-512 | Object Oriented Programming | 2 | 1 | 0 | 3 | 3 |
| 4 | PCCS-513 | Data Structures | 2 | 1 | 0 | 3 | 3 |
| 5 | BSBL-501 | Biology for Engineers | 2 | 0 | 0 | 2 | 2 |
| 6 | BSMA-502 | Numerical and Statistical Methods Lab | 0 | 0 | 2 | 2 | 1 |
| 7 | PCCS-514 | Digital Electronics Lab | 0 | 0 | 2 | 2 | 1 |
| 8 | PCCS-515 | Object Oriented Programming Lab | 0 | 0 | 4 | 4 | 2 |
| 9 | PCCS-516 | Data Structures Lab | 0 | 0 | 4 | 4 | 2 |
| | | Total | 12 | 2 | 12 | 26 | 20 |

| Semester-IVA | | | | | | | |
|--------------|----------|--|-----------|----------|----------|-----------|-----------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | ESME-501 | Engineering Mechanics | 3 | 1 | 0 | 4 | 4 |
| 2 | PCCS-521 | Computer Organization and Architecture | 3 | 0 | 0 | 3 | 3 |
| 3 | PCCS-522 | Operating System | 3 | 0 | 0 | 3 | 3 |
| 4 | PCCS-523 | Database Management System | 2 | 1 | 0 | 3 | 3 |
| 5 | HSMC-501 | Principles of Management | 3 | 0 | 0 | 3 | 3 |
| 6 | PCCS-524 | Operating System Lab | 0 | 0 | 4 | 4 | 2 |
| 7 | PCCS-525 | Database Management System Lab | 0 | 0 | 4 | 4 | 2 |
| 8 | MCMH-501 | Indian Constitution | 3 | 0 | 0 | 3 | 0 |
| | | Total | 17 | 2 | 8 | 27 | 20 |

| Semester-IVB | | | | | | | |
|--------------|----------|--|--|--|--|----|-------------|
| 1 | TPID-521 | Industrial Training 02 weeks | | | | 40 | 1 (S/US) |
| 2 | EAA-521+ | Fractional credit course/Extra Academic Activity + GROUP A/B/C | | | | 40 | 1 (S/US) |

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| Semester-VA | | | | | | | |
|-------------|----------|---|-----------|----------|----------|-----------|-----------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | PCCS-611 | Discrete Mathematics | 2 | 1 | 0 | 3 | 3 |
| 2 | PCCS-612 | Computer Networks | 2 | 1 | 0 | 3 | 3 |
| 3 | OECS-611 | Open Elective-1 | 3 | 0 | 0 | 3 | 3 |
| 4 | OECS-612 | Open Elective-2 | 3 | 0 | 0 | 3 | 3 |
| 5 | PECS-611 | Professional Elective-1 | 3 | 0 | 0 | 3 | 3 |
| 6 | HSMC-601 | Technical Communication | 2 | 0 | 0 | 2 | 2 |
| 7 | MCUG-601 | Universal Human Values-II: Understanding Harmony | 3 | 0 | 0 | 3 | 3 |
| 8 | PCCS-613 | Computer Networks Lab | 0 | 0 | 4 | 4 | 2 |
| 9 | HSMC-602 | Technical Communication Lab | 0 | 0 | 2 | 2 | 1 |
| | | Total | 18 | 2 | 6 | 26 | 23 |

| Semester-V B | | | | | | | |
|--------------|----------|---|--|--|--|----|-------------|
| 1 | EAA-611+ | Fractional credit course/Extra Academic Activity +GROUP A/B/C | | | | 40 | 1 (S/US) |

| Semester-VI A | | | | | | | |
|---------------|----------|--|-----------|----------|----------|-----------|-----------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | PCCS-621 | Design and Analysis of Algorithm | 2 | 1 | 0 | 3 | 3 |
| 2 | PCCS-622 | Automata Theory and Formal Languages | 2 | 1 | 0 | 3 | 3 |
| 3 | OECS-621 | Open Elective-3 | 3 | 0 | 0 | 3 | 3 |
| 4 | OECS-622 | Open Elective-4 | 3 | 0 | 0 | 3 | 3 |
| 5 | PECS-621 | Professional Elective-2 | 3 | 0 | 0 | 3 | 3 |
| 6 | HSMC-603 | Engineering Economics and Entrepreneurship | 3 | 0 | 0 | 3 | 3 |
| 7 | PCCS-623 | Design and Analysis of Algorithm Lab | 0 | 0 | 4 | 4 | 2 |
| | | Total | 16 | 2 | 4 | 22 | 20 |

| Semester-VI B | | | | | | | |
|---------------|----------|--|--|--|--|----|-------------|
| 1 | TPID-621 | Industrial Training 04 weeks | | | | 40 | 2 (S/US) |
| 2 | EAA-622+ | Fractional credit course/Extra Academic Activity + GROUP A/B/C | | | | 40 | 1 (S/US) |

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Semester-VII

| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
|------|----------|-----------------------------|-----------|----------|----------|-----------|-----------|
| 1 | PCCS-711 | Internet Programming | 2 | 1 | 0 | 3 | 3 |
| 2 | PCCS-712 | Compiler Design | 3 | 1 | 0 | 4 | 4 |
| 3 | PECS-711 | Professional Elective-3 | 3 | 0 | 0 | 3 | 3 |
| 4 | PECS-712 | Professional Elective-4 | 3 | 0 | 0 | 3 | 3 |
| 5 | OECS-711 | Open Elective-5 | 3 | 0 | 0 | 3 | 3 |
| 6 | PCCS-713 | Internet Programming Lab | 0 | 0 | 4 | 4 | 2 |
| 7 | PRCS-711 | Project Stage I and Seminar | 0 | 0 | 4 | 4 | 2 |
| | | Total | 14 | 2 | 8 | 24 | 20 |

Semester-VIII

| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
|------|----------|-------------------------|----------|----------|-----------|-----------|-----------|
| 1 | PECS-721 | Professional Elective-5 | 3 | 0 | 0 | 3 | 3 |
| 2 | PECS-722 | Professional Elective-6 | 3 | 0 | 0 | 3 | 3 |
| 3 | PRCS-721 | Project Stage II | 0 | 0 | 12 | 12 | 6 |
| | | Total | 6 | 0 | 12 | 18 | 12 |

OR

| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
|------|----------|------------------------|----------|----------|-----------|-----------|-----------|
| 1 | INID-721 | Internship in Industry | | | | | 6 |
| 2 | PRCS-721 | Project Stage II | 0 | 0 | 12 | 12 | 6 |
| | | Total | 0 | 0 | 12 | 12 | 12 |

| | | | | | | | |
|---|-----------|----------------------------------|---|---|---|---|---|
| 5 | | Open Elective-V | 3 | 0 | 0 | 3 | 3 |
| | OECS-711A | Software Reliability and Testing | 3 | 0 | 0 | 3 | 3 |
| | OECS-711B | Human Resource Management | 3 | 0 | 0 | 3 | 3 |
| | OECS-711C | Client Server Architecture | 3 | 0 | 0 | 3 | 3 |
| | OECS-711D | Multimedia and Animation | 3 | 0 | 0 | 3 | 3 |
| | OECS-711E | Data Mining | 3 | 0 | 0 | 3 | 3 |

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| LIST OF PROFESSIONAL ELECTIVES | | | | | | | |
|--------------------------------|-----------|------------------------------------|---|---|---|------|---------|
| Sr.No | Sub. Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | | Professional Elective-I | | | | | |
| | PECS-611A | Computer Graphics | 3 | 0 | 0 | 3 | 3 |
| | PECS-611B | Data Mining | 3 | 0 | 0 | 3 | 3 |
| | PECS-611C | Cyber Security | 3 | 0 | 0 | 3 | 3 |
| | PECS-611D | Software Engineering | 3 | 0 | 0 | 3 | 3 |
| | PECS-611E | Enterprise Resource Planning | 3 | 0 | 0 | 3 | 3 |
| | PECS-611F | Network Operating System | 3 | 0 | 0 | 3 | 3 |
| | | | | | | | |
| 2 | | Professional Elective-II | | | | | |
| | PECS-621A | Multimedia and Animation | 3 | 0 | 0 | 3 | 3 |
| | PECS-621B | Artificial Intelligence | 3 | 0 | 0 | 3 | 3 |
| | PECS-621C | Mobile Communication | 3 | 0 | 0 | 3 | 3 |
| | PECS-621D | Software Project Management | 3 | 0 | 0 | 3 | 3 |
| | PECS-621E | Decision Support System | 3 | 0 | 0 | 3 | 3 |
| | PECS-621F | Advanced Computer Architecture | 3 | 0 | 0 | 3 | 3 |
| | | | | | | | |
| 3 | | Professional Elective-III | | | | | |
| | PECS-711A | Image Processing | 3 | 0 | 0 | 3 | 3 |
| | PECS-711B | Soft Computing | 3 | 0 | 0 | 3 | 3 |
| | PECS-711C | Cyber Forensics | 3 | 0 | 0 | 3 | 3 |
| | PECS-711D | Requirement Engineering | 3 | 0 | 0 | 3 | 3 |
| | PECS-711E | Management Information System | 3 | 0 | 0 | 3 | 3 |
| | PECS-711F | Distributed System | 3 | 0 | 0 | 3 | 3 |
| | | | | | | | |
| 4 | | Professional Elective-IV | | | | | |
| | PECS-712A | Simulation and Modeling | 3 | 0 | 0 | 3 | 3 |
| | PECS-712B | Machine Learning | 3 | 0 | 0 | 3 | 3 |
| | PECS-712C | Adhoc and Wireless Sensor Networks | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | |
|---|-----------|-------------------------------------|---|---|---|---|---|
| | PECS-712D | Object Oriented Analysis and Design | 3 | 0 | 0 | 3 | 3 |
| | PECS-712E | E-Commerce | 3 | 0 | 0 | 3 | 3 |
| | PECS-712F | Parallel Computing | 3 | 0 | 0 | 3 | 3 |
| | | | | | | | |
| 5 | | Professional Elective-V | | | | | |
| | PECS-721A | Digital Signal Processing | 3 | 0 | 0 | 3 | 3 |
| | PECS-721B | Neural Networks and Deep Learning | 3 | 0 | 0 | 3 | 3 |
| | PECS-721C | Cyber Threat Intelligence | 3 | 0 | 0 | 3 | 3 |
| | PECS-721D | Software Reliability and Testing | 3 | 0 | 0 | 3 | 3 |
| | PECS-721E | Business Management System | 3 | 0 | 0 | 3 | 3 |
| | PECS-721F | Cloud Computing | 3 | 0 | 0 | 3 | 3 |
| | | | | | | | |
| 6 | | Professional Elective-VI | | | | | |
| | PECS-722A | Parallel Algorithms | 3 | 0 | 0 | 3 | 3 |
| | PECS-722B | Computer Vision | 3 | 0 | 0 | 3 | 3 |
| | PECS-722C | High Speed Communication Networks | 3 | 0 | 0 | 3 | 3 |
| | PECS-722D | Software Quality Assurance | 3 | 0 | 0 | 3 | 3 |
| | PECS-722E | Human Resource Management | 3 | 0 | 0 | 3 | 3 |
| | PECS-722F | Embedded Systems | 3 | 0 | 0 | 3 | 3 |

BACHELOR OF ENGINEERING (HONORS) COMPUTER SCIENCE AND ENGINEERING (2020 Batch)

| Semester-V | | | | | | | |
|-------------------|-----------------|---------------------|----------|----------|----------|-------------|----------------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | HDCS-611 | Data Analytics | 3 | 1 | 0 | 4 | 4 |
| 2 | HDCS-612 | Internet of Things | 3 | 1 | 0 | 4 | 4 |
| | | Total | 6 | 2 | 0 | 8 | 8 |

| Semester-VI | | | | | | | |
|--------------------|-----------------|-------------------------|----------|----------|----------|-------------|----------------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | HDCS-621 | Optimization Techniques | 3 | 1 | 0 | 4 | 4 |
| | | Total | 3 | 1 | 0 | 4 | 4 |

| Semester-VII | | | | | | | |
|---------------------|-----------------|-----------------------------------|----------|----------|----------|-------------|----------------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | HDCS-711 | Cryptography and Network Security | 3 | 1 | 0 | 4 | 4 |
| | | Total | 3 | 1 | 0 | 4 | 4 |

| Semester-VIII | | | | | | | |
|----------------------|-----------------|---------------------|----------|----------|-----------|-------------|----------------|
| S No | Sub Code | Subject Name | L | T | P | Hrs. | Credits |
| 1 | PHCS-721 | Project Hon's | 0 | 0 | 08 | 08 | 4 |
| | | Total | 0 | 0 | 08 | 08 | 4 |