# Bachelor of Technology in Electronics and Communication Engineering (VLSI)
## School of Electronics Engineering

| Programme Credit Structure | Credits |
|---|---|
| **University Core Courses** | **80** |
| **Programme Core Courses** | **40** |
| **Programme Elective / Spl. Elective** | **20** |
| **University Elective** | **20** |
| **Total Graded Credit Requirement** | **160** |

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| **University Core** | | | | **80** |
| | | **T** | **P** | **C** |
| MAT1001 | Calculus for Engineers | 3 | 2 | 4 |
| MAT1002 | Applications of Differential and Difference Equations | 3 | 2 | 4 |
| MAT1011 | Applied Statistics | 3 | 2 | 4 |
| PHY1008 | Modern Physics | 3 | 2 | 4 |
| CHY1009 | Chemistry and Environmental Studies | 3 | 2 | 4 |
| CSE1012 | Problem Solving using Python | 3 | 2 | 4 |
| CSE2005 | Object Oriented Programming using JAVA | 3 | 2 | 4 |
| CSE2001 | Data Structures and Algorithms | 3 | 2 | 4 |
| ECE1002 | Fundamentals of Electrical and Electronics Engineering | 3 | 2 | 4 |
| ENG1001/ ENG1002 | English for Essential Communication/ English for Effective Communication | 2 | 2 | 3 |
| ENG1002/ ENG2001 | English for Effective Communication / English for Professional Communication | 2 | 2 | 3 |
| FRLxxxx | Foreign Language | 2 | 0 | 2 |
| MGT1040 | Entrepreneurship | 2 | 0 | 4 |
| MGT1001 | Ethics and Values | 2 | 0 | 2 |
| | Indian Studies | 2 | 0 | 2 |
| STSxxxx | Qualitative and Quantitative Skills Practice I | 3 | 0 | 1 |
| STSxxxx | Qualitative and Quantitative Skills Practice II | 3 | 0 | 1 |
| BIC4002 | Industrial Internship/ Senior Design Project | 0 | 0 | 12 |
| CAP4001 | Capstone | 0 | 0 | 6 |
| SIT1001 | Summer Internship | 0 | 0 | 2 |
| ECS2002 | Engineering Clinics - System Design | 0 | 4 | 2 |
| ECS3001 | Engineering Clinics - Real Time System | 0 | 4 | 2 |
| EXCXXXX | Extracurricular Activities | | | 2 |
| **Programme Core** | | | | **40** |
| PHY1002 | Semiconductor Devices and Circuits | 4 | 0 | 4 |
| ECE2001 | Analog Devices and Circuits | 3 | 2 | 4 |
| ECE1003 | Digital Logic Design | 3 | 2 | 4 |
| ECE2005 | Signals and Systems | 4 | 0 | 4 |
| PHY2001 | Applied Electromagnetics | 4 | 0 | 4 |
| ECE2014 | Microprocessors and Microcontrollers | 3 | 2 | 4 |
| ECE1010 | Probability and Random Processes | 4 | 0 | 4 |
| ECE2006 | Communication Systems | 3 | 2 | 4 |
| ECE3001 | Linear Integrated Circuits and Applications | 3 | 2 | 4 |
| ECE2003 | Control Systems Engineering | 2 | 2 | 4 |
| **Programme Electives** | | | | **20** |
| ECE2010 | Digital System Design using FPGAs | 3 | 2 | 4 |
| ECE3005 | CMOS VLSI Design | 3 | 2 | 4 |
| ECE3006 | HDL Verification and Methodology | 3 | 2 | 4 |
| ECE3023 | Scripting Languages | 3 | 3 | 4 |
| ECE4005 | SoC Design | 3 | 2 | 4 |
| ECE4008 | Low Power VLSI Design | 3 | 0 | 3 |
| ECE4012 | VLSI Design for Testability | 3 | 0 | 3 |
| ECE4010 | RF and Mixed Signal Circuit Design | 3 | 2 | 4 |
| ECE4006 | Analog IC Design | 3 | 2 | 4 |

**University Electives** **20**

Engineering |Sciences | Humanities | Social Sciences | Liberal arts |
Economics | Finance | Management

**Honours Degree (20 credits) -** Students can opt for an Honours Degree" in the same discipline by earning 20 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Honours options

**Minors Degree (20 credits) -** Students can opt for a "Minor Degree" in other disciplines 20 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Minor options

**Double Major Degree (40 credits) -**Students can opt for a “Double Major" in other disciplines by earning 40 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Second Major options.