

Curriculum for Dual Degree

B.Tech in Electronics and Communication Engineering and M.Tech in VLSI Design

From The Academic Year 2023

(Approved in Senate 51)



Indian Institute of Information Technology Design and Manufacturing, Kancheepuram

Chennai-600 127

| Semester 5 | | | | | | | |
|-------------|--------------|---|----------|---|---|----|-----|
| S.No | Course Code | Course Name | Category | L | T | P | C |
| 1 | CS3006 | Introduction to Data Science for Engineers | ITC | 3 | 0 | 2 | 4 |
| 2 | DS3000 | Entrepreneurship and Management Functions | DSC | 1 | 2 | 0 | 3 |
| 3 | EC3000 | Control Systems | PCC | 3 | 1 | 0 | 4 |
| 4 | EC3001 | Communication Systems | PCC | 3 | 1 | 0 | 4 |
| 5 | | Professional Elective Course 1 | PEC | 3 | 1 | 0 | 4 |
| 6 | EC3002 | Digital Signal Processing Practice | PCC | 0 | 0 | 3 | 1.5 |
| 7 | EC3003 | Analog Circuits Practice | PCC | 0 | 0 | 3 | 1.5 |
| 8 | NC3000 | Professional Ethics and Organizational Behaviour | NC | 1 | 0 | 0 | 0 |
| | | | | | | | 22 |
| Semester 6 | | | | | | | |
| S.No | Course Code | Course Name | Category | L | T | P | C |
| 1 | DS3001 | Prototyping and Testing | DSC | 1 | 2 | 0 | 3 |
| 2 | EC3004 | Digital Communication | PCC | 3 | 1 | 0 | 4 |
| 3 | | Professional Elective Course 2 | PEC | 3 | 1 | 0 | 4 |
| 4 | | Free Elective Course 1 | ELC | 3 | 1 | 0 | 4 |
| 5 | | Free Elective Course 2 | ELC | 3 | 1 | 0 | 4 |
| 6 | EC3005 | Communication Systems Practice | PCC | 0 | 0 | 2 | 1 |
| 7 | HS3000 | Professional Communication | HSC | 1 | 0 | 2 | 2 |
| 8 | NC3001 | Intellectual Property Rights | NC | 1 | 0 | 0 | 0 |
| | | | | | | | 22 |
| Semester 7 | | | | | | | |
| S.No | Course Code | Course Name | Category | L | T | P | C |
| 1 | EC5014 | Digital IC Design | PCC | 3 | 1 | 0 | 4 |
| 2 | EC5009 | MOSFET Modelling for VLSI Circuits | PCC | 3 | 1 | 0 | 4 |
| 3 | EC5011 | VLSI Testing and Testable Design | PCC | 3 | 1 | 0 | 4 |
| 4 | | Professional Elective Course 3 | PEC | 3 | 1 | 0 | 4 |
| 5 | EC5034 | Device Modeling and Simulation Practice | PCC | 0 | 0 | 4 | 2 |
| 6 | EC5035 | VLSI Testing Practice | PCC | 0 | 0 | 4 | 2 |
| 7 | | Free Elective Course 3 | ELC | 3 | 1 | 0 | 4 |
| | | | | | | | 24 |
| Semester 8 | | | | | | | |
| S.No | Course Code | Course Name | Category | L | T | P | C |
| 1 | | Free Elective Course 4 | ELC | 3 | 1 | 0 | 4 |
| 2 | | Professional Elective Course 4 | PEC | 3 | 1 | 0 | 4 |
| 3 | | Professional Elective Course 5 | PEC | 3 | 1 | 0 | 4 |
| 4 | EC5010 | Analog IC Design | PCC | 3 | 1 | 0 | 4 |
| 5 | EC5018 | High level Verification with system Verilog and UVM | PCC | 2 | 0 | 4 | 4 |
| 6 | EC5017 | IC Design Practice | PCC | 0 | 0 | 4 | 2 |
| | | | | | | | 22 |
| Semester 9 | | | | | | | |
| S.No | Courses Code | Course Name | Category | L | T | P | C |
| 1 | EC6009 | DD-EC-VS- Project Phase I (May-July) (Internship) | PCD | 0 | 0 | 8 | 4 |
| 2 | EC6010 | DD-EC-VS- Project Phase II (Aug – Nov) | PCD | 0 | 0 | 12 | 6 |
| | | | | | | | 10 |
| Semester 10 | | | | | | | |
| S.No | Courses Code | Course Name | Category | L | T | P | C |
| 1 | EC6011 | DD- EC-VS- Project Phase III (Dec – May) | PCD | 0 | 0 | 20 | 10 |
| | | | | | | | 10 |

\$ All NC courses are Pass/Fail courses for which the letter grade H/L shall be awarded.

1. Professional Elective Course is an elective course offered or prescribed by the parent department. Free Elective Course is an elective course offered by any department, including the parent department. For example: - A ME student, based on his/her choice, can register the elective course offered by ME department or CSE department as free elective course.

2. 3 Months internship is mandatory, however, the curriculum offers the flexibility to carry out 3-12 Months internship with the approval of the parent department. To satisfy the minimum credit requirement, students opting for long term internship (More than 3 months) are expected to advance a few elective courses and credit a few courses from NPTEL. In line with the guidelines approved by the Senate (Senate 46-07), a B.Tech/DD student can earn a maximum of 9 credits from NPTEL Courses. For all successfully completed NPTEL Courses, the letter grade "H" (Pass) will be awarded and credits of such courses will not be accounted for CGPA calculation.

| Semester wise Credit Distribution | | | | | | | | | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------|------------|------------|
| Category | Semester | | | | | | | | | | Total | % | |
| | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | | | |
| Basic Science Course (BSC) | 8.5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12.5 | 6.01 |
| Science Elective Course (SEC) | 0 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 5.77 |
| Basic Engineering Course (BEC) | 11.5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15.5 | 7.45 |
| Design Course (DSC) | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 18 | 8.65 |
| IT Skill Course (ITC) | 0 | 6 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 4.81 |
| Professional Core Course (PCC) | 0 | 4 | 17 | 17 | 11 | 5 | 16 | 10 | 0 | 0 | 0 | 80 | 38.46 |
| Professional Elective Course (PEC) | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 8 | 0 | 0 | 0 | 20 | 9.62 |
| Elective Course (ELC) | 0 | 0 | 0 | 0 | 0 | 8 | 4 | 4 | 0 | 0 | 0 | 16 | 7.69 |
| Humanities and Social Science Course (HSC) | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 1.92 |
| Professional Career Development (PCD) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 20 | 9.62 |
| Total | 25 | 25 | 24 | 24 | 22 | 22 | 24 | 22 | 10 | 10 | | 208 | 100 |
| | 25 | 50 | 74 | 98 | 120 | 142 | 166 | 188 | 198 | 208 | | | |