

## 1. MTech Curriculum (Communications & Signal Processing Stream)

| Course number | Semester 1                                | Credits   | Course Type          |
|---------------|---|-----------|----------------------|
| EE 5817       | Random Variables and Stochastic Processes | 3         | Department Core      |
| EE 5837       | Principles of Digital Communication       | 3         | Department Core      |
| EE 5807       | Advanced Digital Signal Processing        | 2         | Department Core      |
| EExxxx        | Department softcore (basket below)        | 3         | Department core      |
| SS xxxx       | English communication                     | 1         | Soft skills          |
| EE 5801       | Communications Lab                        | 1         | Labs                 |
| SS 5901       | Industry lectures*                        | 0         | Soft skills          |
|               | <b>Total</b>                              | <b>13</b> |                      |
|               | <b>Semester 2</b>                         |           |                      |
| EE 5803       | FPGA Lab                                  | 1         | Labs                 |
| EE 5802       | DSP Lab                                   | 1         | Labs                 |
| EE xxxx       | Department Electives                      | 6         | Department Electives |
| EExxxx        | Department softcore                       | 3         | Department core      |
| FExxxx        | Free Elective                             | 1         | Free Electives       |
| SS 5901       | Industry lectures*                        | 0         | Life skills          |
|               | <b>Total</b>                              | <b>12</b> |                      |
|               | <b>Semester 3</b>                         |           |                      |
| EE 6901       | MTech Thesis stage - I                    | 12        | Thesis               |
| SS 5901       | Industry lectures*                        | 0         | Soft Skills          |
|               | <b>Total</b>                              | <b>12</b> |                      |
|               | <b>Semester 4</b>                         |           |                      |
| EE 6902       | MTech Thesis stage - II                   | 12        | Thesis               |
| SS 5901       | Industry lectures*                        | 1         | Soft skills          |
|               | <b>Total</b>                              | <b>13</b> |                      |

### Softcore Basket

| Softcore basket( at least 6 credits)   |               |         |               |
|--|---------------|---------|---------------|
| Students can pick any 6 credits of these core courses, depending on their thesis topic or interest |               |         |               |
|  |               | Credits | Prerequisites |
| EE5609   | Matrix theory | 3       |               |

|                                  |  |                    |                |
|----------------------------------|--|--------------------|----------------|
| EE5610<br>(OR)<br>5601+5602+5603 | Pattern Recognition & Machine learning | 3<br>(OR)<br>1+1+1 | EE5817         |
| EE5847                           | Information theory                     | 1                  | EE5817         |
| EE5390                           | Source coding                          | 1                  | EE5817, EE5837 |
| EE6317                           | Channel coding                         | 1                  | EE5817, EE5837 |
| EE5606                           | Convex optimization                    | 3                  | EE5609, EE5817 |
| EE xxxx                          | Communication networks                 | 3                  | EE5837         |
| EE5342                           | Detection theory                       | 1                  | EE5817, EE5609 |
| EE5357                           | Estimation theory                      | 1                  | EE5817, EE5609 |
| EExxxx                           | Wireless communications                | 3                  | EE5837, EE5817 |
| EE6350                           | Multiple antenna systems               | 3                  | EE5817, EE5837 |

## Summary

| Course Type          | Credits |
|----------------------|---------|
| Department Core      | 14      |
| Department Electives | 6       |
| Labs                 | 3       |
| Soft skills          | 2       |
| Free Electives       | 1       |
| Thesis               | 24      |
| Total                | 50      |