

# IRT POLYTECHNIC COLLEGE, BARGUR

## COMPUTER ENGINEERING

### CURRICULUM OUTLINE

#### THIRD SEMESTER

| Subject Code | SUBJECT  | HOURS PER WEEK |                    |                 |             |
|--------------|--|----------------|--------------------|-----------------|-------------|
|              |  | Theory Hours   | Tutorial / Drawing | Practical hours | Total Hours |
| 35231        | Basics of Electrical & Electronics Engineering | 5              | -                  | -               | 5           |
| 35232        | Operating Systems                              | 5              | -                  | -               | 5           |
| 35233        | C Programming                                  | 6              | -                  | -               | 6           |
| 35234        | Electrical & Electronics Practical             | -              | -                  | 4               | 4           |
| 35235        | Linux Practical                                | -              | -                  | 4               | 4           |
| 35236        | C Programming Practical                        | -              | -                  | 6               | 6           |
| 30001        | Computer Applications Practical**              | -              | -                  | 4               | 4           |
|              | Seminar  | 1              | -                  | -               | 1           |
| <b>TOTAL</b> |  | 17             | -                  | 18              | 35          |

#### FOURTH SEMESTER

| Subject Code | SUBJECT                                  | HOURS PER WEEK |                    |                 |             |
|--------------|--|----------------|--------------------|-----------------|-------------|
|              |  | Theory Hours   | Tutorial / Drawing | Practical hours | Total Hours |
| 35241        | Computer Architecture                    | 4              | -                  | -               | 4           |
| 35242        | Computer Networks and Security           | 4              | -                  | -               | 4           |
| 35243        | Object Oriented Programming with Java    | 6              | -                  | -               | 6           |
| 35244        | Data Structures using C                  | 6              | -                  | -               | 6           |
| 35245        | Java Programming Practical               | -              | -                  | 4               | 4           |
| 35246        | Data Structures using C Practical        | -              | -                  | 6               | 6           |
| 30002        | Life and Employability Skill Practical** | -              | -                  | 4               | 4           |
|              | Seminar                                  | 1              | -                  | -               | 1           |
| <b>TOTAL</b> |  | 21             | -                  | 14              | 35          |

\*\* Common with all Branches of Engineering / Technology

**FIFTH SEMESTER**

| Subject Code                 | SUBJECT  | HOURS PER WEEK |                    |                 |             |
|------------------------------|--|----------------|--------------------|-----------------|-------------|
|                              |  | Theory Hours   | Tutorial / Drawing | Practical hours | Total Hours |
| 35251                        | Web Programming                                      | 5              | -                  | -               | 5           |
| 35252                        | Relational Database and Management Systems           | 5              | -                  | -               | 5           |
| 35253                        | Component Based Technology                           | 4              | -                  | -               | 4           |
| <b>ELECTIVE - I – THEORY</b> |  |                |                    |                 |             |
| 35271                        | a. Cloud Computing                                   | 4              |                    |                 | 4           |
| 35272                        | b. Software Engineering                              |                |                    |                 |             |
| 35255                        | Web Programming Practical                            | -              | -                  | 4               | 4           |
| 35256                        | Relational Database and Management Systems Practical | -              | -                  | 6               | 6           |
| 35257                        | Component Based Technology Practical                 | -              | -                  | 6               | 6           |
|                              | Seminar  | 1              | -                  | -               | 1           |
| <b>TOTAL</b>                 |  | <b>19</b>      | <b>-</b>           | <b>16</b>       | <b>35</b>   |

**SIXTH SEMESTER**

| Subject Code                    | SUBJECT                                  | HOURS PER WEEK |                    |                 |             |
|---------------------------------|--|----------------|--------------------|-----------------|-------------|
|                                 |  | Theory Hours   | Tutorial / Drawing | Practical hours | Total Hours |
| 35261                           | Computer Hardware and Servicing          | 6              | -                  | -               | 6           |
| 35262                           | Mobile Computing                         | 5              | -                  | -               | 5           |
| <b>ELECTIVE –II THEORY</b>      |  |                |                    |                 |             |
| 35281                           | a. Multimedia Systems                    | 5              | -                  | -               | 5           |
| 35282                           | b. Open Source Software                  |                |                    |                 |             |
| 35264                           | Computer Servicing and Network Practical | -              | -                  | 6               | 6           |
| 35265                           | Mobile Computing Practical               | -              | -                  | 4               | 4           |
| <b>ELECTIVE – II -PRACTICAL</b> |  |                |                    |                 |             |
| 35283                           | a. Multimedia Systems Practical          | -              | -                  | 4               | 4           |
| 35284                           | b. Open Source Software Practical        |                |                    |                 |             |
| 35267                           | Project work                             | -              | -                  | 4               | 4           |
|                                 | Seminar                                  | 1              | -                  | -               | 1           |
| <b>TOTAL</b>                    |  | <b>17</b>      | <b>-</b>           | <b>18</b>       | <b>35</b>   |

# ELECTRONICS and COMMUNICATION ENGINEERING

## CURRICULUM OUTLINE

### THIRD SEMESTER

| SUBJECT CODE | SUBJECT   | HOURS PER WEEK |                 |                 |             |
|--------------|---|----------------|-----------------|-----------------|-------------|
|              |   | Theory Hours   | Tutorial/Drawin | Practical Hours | Total Hours |
| 34031        | Electronic devices and circuits @                 | 6              | -               | -               | 6           |
| 34032        | Electrical circuits and Instrumentation           | 6              | -               | -               | 6           |
| 34033        | Programming in "C"                                | 5              | -               | -               | 5           |
| 34034        | Electronic devices and circuits Practical #       | -              | -               | 4               | 4           |
| 34035        | Electrical circuits and Instrumentation Practical | -              | -               | 4               | 4           |
| 34036        | Programming in "C" Practical                      | -              | -               | 5               | 5           |
| 34037        | Computer Application Practical for Electronics    | -              | -               | 4               | 4           |
|              | Seminar   | 1              | -               | -               | 1           |
|              | <b>TOTAL</b>                                      | <b>18</b>      | <b>-</b>        | <b>17</b>       | <b>35</b>   |

### FOURTH SEMESTER

| SUBJECT CODE | SUBJECT  | HOURS PER WEEK |                  |                |             |
|--------------|--|----------------|------------------|----------------|-------------|
|              |  | Theory Hours   | Tutorial/Drawing | Practica Hours | Total Hours |
| 34041        | Industrial Electronics                             | 5              | -                | -              | 5           |
| 34042        | Communication Engineering                          | 6              | -                | -              | 6           |
| 34043        | Digital Electronics #                              | 5              | -                | -              | 5           |
| 34044        | Linear Integrated Circuits                         | 4              | -                | -              | 4           |
| 34045        | Industrial Electronics and communication Practical | -              | -                | 5              | 5           |
| 34046        | Integrated Circuits Practical #                    | -              | -                | 5              | 5           |
| 30002        | Life and Employability Skill Practical *           | -              | -                | 4              | 4           |
|              | Seminar  | 1              | -                | -              | 1           |
|              | <b>TOTAL</b>                                       | <b>21</b>      | <b>-</b>         | <b>14</b>      | <b>35</b>   |

## FIFTH SEMESTER

| SUBJECT CODE | SUBJECT                                  | HOURS PER WEEK |                      |                    |       |
|--------------|--|----------------|----------------------|--------------------|-------|
|              |  | Theory         | Tutorial/<br>Drawing | Practical<br>Hours | Total |
| 34051        | Advanced Communication Systems           | 6              | -                    | -                  | 6     |
| 34052        | Microcontroller @                        | 6              | -                    | -                  | 6     |
| 34053        | Very Large Scale Integration             | 5              | -                    | -                  | 5     |
|              | Elective I                               |                | -                    | -                  |       |
| 34071        | 1.Digital Communication                  | 5              | -                    | -                  | 5     |
| 34272        | 2.Programmable Logic Controller @        |                |                      |                    |       |
| 34073        | 3.Electronic Systems Design              |                |                      |                    |       |
| 34055        | Advanced Communication Systems Practical | -              | -                    | 4                  | 4     |
| 34056        | Microcontroller Practical @              | -              | -                    | 4                  | 4     |
| 34057        | Very Large Scale Integration Practical   | -              | -                    | 4                  | 4     |
|              | Seminar                                  | 1              | -                    | -                  | 1     |
|              | Total                                    | 23             | -                    | 12                 | 35    |

## SIXTH SEMESTER

| SUBJECT CODE | SUBJECT  | HOURS PER WEEK |                      |                    |       |
|--------------|--|----------------|----------------------|--------------------|-------|
|              |  | Theory         | Tutorial/<br>Drawing | Practical<br>Hours | Total |
| 34061        | Computer Hardware Servicing and Networking           | 6              | -                    | -                  | 6     |
| 34062        | Test Engineering \$                                  | 6              | -                    | -                  | 6     |
|              | Elective II  |                | -                    | -                  |       |
| 34081        | 1.Television Engineering                             | 5              | -                    | -                  | 5     |
| 34082        | 2 Bio Medical Instrumentation                        |                |                      |                    |       |
| 34083        | 3.Mobile communication                               |                |                      |                    |       |
| 34064        | Computer Hardware Servicing and Networking Practical | -              | -                    | 4                  | 4     |
| 34065        | Test Engineering Practical \$                        | -              | -                    | 4                  | 4     |
| 34066        | Embedded Systems Practical                           | -              | -                    | 5                  | 5     |
| 34067        | Project Work   | -              | -                    | 4                  | 4     |
|              | Seminar  | 1              | -                    | -                  | 1     |
|              | Total  | 18             | -                    | 17                 | 35    |

# ELECTRICAL and ELECTRONICS ENGINEERING

## CURRICULUM OUTLINE

### THIRD SEMESTER

| Subject Code | SUBJECT                                     | HOURS PER WEEK |                 |             |
|--------------|---|----------------|-----------------|-------------|
|              |   | Theory Hours   | Practical Hours | Total Hours |
| 33031        | Electrical Circuit Theory                   | 6              | --              | 6           |
| 33032        | Electrical Machines-I                       | 5              | --              | 5           |
| 34031        | Electronic Devices and Circuits *           | 6              | --              | 6           |
| 33034        | Electrical Circuits and Machines Practical  | --             | 5               | 5           |
| 34034        | Electronic Devices and Circuits Practical * | --             | 5               | 5           |
| 33036        | Electrical Work Shop Practical              | --             | 3               | 3           |
| 30001        | Computer Applications Practical #           | --             | 4               | 4           |
|              | Seminar                                     | 1              | --              | 1           |
|              | <b>Total Hours</b>                          | <b>18</b>      | <b>17</b>       | <b>35</b>   |

\* Common with ECE branch

# Common with ALL branches

### FOURTH SEMESTER

| Subject Code | SUBJECT   | HOURS PER WEEK |                 |             |
|--------------|---|----------------|-----------------|-------------|
|              |   | Theory Hours   | Practical Hours | Total Hours |
| 33041        | Electrical Machines – II                          | 6              | --              | 6           |
| 33042        | Measurements and Instruments                      | 5              | --              | 5           |
| 34043        | Digital Electronics *                             | 5              | --              | 5           |
| 33044        | Transducers and Signal Conditioners               | 4              | --              | 4           |
| 33045        | Electrical Machines and Instrumentation Practical | --             | 5               | 5           |
| 34046        | Integrated Circuits Practical*                    | --             | 5               | 5           |
| 30002        | Life and Employability Skill Practical #          | --             | 4               | 4           |
|              | Seminar   | 1              | --              | 1           |
|              | <b>Total Hours</b>                                | <b>21</b>      | <b>14</b>       | <b>35</b>   |

\*Common with ECE branch

# Common with ALL branches

### FIFTH SEMESTER

| Subject Code       | SUBJECT                                     | HOURS PER WEEK |                 |             |
|--------------------|---|----------------|-----------------|-------------|
|                    |   | Theory Hours   | Practical Hours | Total Hours |
| 33051              | Generation Transmission and Switchgear      | 6              | --              | 6           |
| 34052              | Micro Controller*                           | 6              | --              | 6           |
| 33053              | Electrical Estimation and Energy Auditing   | 5              | --              | 5           |
|                    | Elective Theory-I                           | 5              | --              | 5           |
| 33055              | Computer Aided Electrical Drawing Practical | --             | 4               | 4           |
| 34056              | Micro Controller Practical*                 | --             | 4               | 4           |
|                    | Elective Practical – I                      | --             | 4               | 4           |
|                    | Seminar                                     | 1              | --              | 1           |
| <b>Total Hours</b> |   | <b>23</b>      | <b>12</b>       | <b>35</b>   |

\* Common with ECE branch

#### Elective subjects

Any one of the following theory subject with the corresponding practical may be selected as Elective -I

| Elective Theory – I |                                | Elective Practical – I |  |
|---------------------|--------------------------------|------------------------|--|
| 33071               | Control of Electrical Machines | 33074                  | Control of Electrical Machines Practical |
| 33072               | Programmable Logic Controller  | 33075                  | Programmable Logic Controller Practical  |
| 33073               | Electrical Machine Design      | 33076                  | Electrical Machine Design Practical      |

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### SIXTH SEMESTER

| Subject Code | SUBJECT   | HOURS PER WEEK |                 |             |
|--------------|---|----------------|-----------------|-------------|
|              |   | Theory Hours   | Practical Hours | Total Hours |
| 33061        | Distribution and Utilization                      | 6              | --              | 6           |
| 33062        | Operation and Maintenance of Electrical Equipment | 5              | --              | 5           |
|              | Elective Theory-II                                | 5              | --              | 5           |
| 33064        | Wiring and Winding Practical                      | --             | 5               | 5           |
| 33065        | Electrical Circuits Simulation Practical          | --             | 4               | 4           |
|              | Elective Practical – II                           | --             | 5               | 5           |
| 33067        | Project Work                                      | --             | 4               | 4           |
|              | Seminar   | 1              | --              | 1           |
|              | <b>Total Hours</b>                                | <b>17</b>      | <b>18</b>       | <b>35</b>   |

#### Elective subjects

Any one of the following theory subject with the corresponding practical may be selected as Elective -II

| Elective Theory – II |                                | Elective Practical – III |  |
|----------------------|--------------------------------|--------------------------|--|
| 33081                | Power Electronics              | 33084                    | Control of Electrical Machines Practical |
| 34082                | Bio-Medical Instrumentation    | 33085                    | Programmable Logic Controller Practical  |
| 34682                | Computer Hardware and Networks | 34684                    | Computer Hardware and Networks Practical |

@ Common with Information Technology

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# MECHANICAL ENGINEERING

## CURRICULUM OUTLINE

### THIRD SEMESTER

| Subject Code | Subject                                 | HOURS PER WEEK |                    |           |           |
|--------------|---|----------------|--------------------|-----------|-----------|
|              |   | Theory         | Tutorial / Drawing | Practical | Total     |
| 32031        | Strength of Materials                   | 6              | -                  | -         | 6         |
| 32032        | Manufacturing Processes                 | 6              | -                  | -         | 6         |
| 32033        | Machine Drawing                         | -              | 4                  | -         | 4         |
| 32034        | Computer Applications and CAD Practical | -              | -                  | 6         | 6         |
| 32035        | Foundry and Welding Practical           | -              | -                  | 4         | 4         |
| 32036        | Lathe and Drilling Practical            | -              | -                  | 4         | 4         |
| 32037        | Metrology and Metallography Practical   | -              | -                  | 4         | 4         |
| Seminar      |   | 1              | -                  | -         | 1         |
| <b>TOTAL</b> |   | <b>13</b>      | <b>4</b>           | <b>18</b> | <b>35</b> |

### FOURTH SEMESTER

| Subject Code | Subject   | HOURS PER WEEK |                    |           |           |
|--------------|---|----------------|--------------------|-----------|-----------|
|              |   | Theory         | Tutorial / Drawing | Practical | Total     |
| 32041        | Heat Power Engineering                              | 6              | -                  | -         | 6         |
| 32042        | Special Machines                                    | 5              | -                  | -         | 5         |
| 32043        | Fluid Mechanics and Fluid Power                     | 5              | -                  | -         | 5         |
| 32044        | Electrical Drives & Control                         | 6              | -                  | -         | 6         |
| 32045        | Strength of Materials and Fluid Mechanics Practical | -              | -                  | 4         | 4         |
| 32046        | Special Machines Practice                           | -              | -                  | 4         | 4         |
| 32047        | Electrical Drives & Control Practical               | -              | -                  | 4         | 4         |
| Seminar      |   | 1              | -                  | -         | 1         |
| <b>TOTAL</b> |   | <b>23</b>      | <b>-</b>           | <b>12</b> | <b>35</b> |

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**FIFTH SEMESTER**

| Subject Code               | Subject  | HOURS PER WEEK |                      |           |           |
|----------------------------|--|----------------|----------------------|-----------|-----------|
|                            |  | Theory         | Tutorial/<br>Drawing | Practical | Total     |
| 32051                      | Design of Machine Elements                       | 6              | -                    | -         | 6         |
| 32052                      | Thermal and Automobile Engineering               | 6              | -                    | -         | 6         |
| 32053                      | Process Planning and Cost Estimation             | 5              | -                    | -         | 5         |
| <b>Elective - I Theory</b> |  |                |                      |           |           |
| 32071                      | Total Quality Management                         | 5              | -                    | -         | 5         |
| 32072                      | Press Tools                                      |                |                      |           |           |
| 32073                      | Renewable Energy Sources and Energy Conservation |                |                      |           |           |
| 32055                      | Process Automation Practical                     | -              | -                    | 4         | 4         |
| 32056                      | Thermal and Automobile Engineering Practical     | -              | -                    | 4         | 4         |
| 30002                      | Life and Employability Skills Practical **       | -              | -                    | 4         | 4         |
| Seminar                    |  | 1              |                      |           | 1         |
| <b>TOTAL</b>               |  | <b>23</b>      | <b>-</b>             | <b>12</b> | <b>35</b> |

\*\* Common to all Diploma Courses

**SIXTH SEMESTER**

| Subject Code                   | Subject   | HOURS PER WEEK |                      |           |           |
|--------------------------------|---|----------------|----------------------|-----------|-----------|
|                                |   | Theory         | Tutorial/<br>Drawing | Practical | Total     |
| 32061                          | Industrial Engineering and Management             | 6              | -                    | -         | 6         |
| 32062                          | Computer Aided Design and Manufacturing           | 5              | -                    | -         | 5         |
| <b>Elective - II Theory</b>    |   |                |                      |           |           |
| 32081                          | Mechanical Instrumentation                        | 5              | -                    | -         | 5         |
| 32082                          | Robotics  |                |                      |           |           |
| 32083                          | Refrigeration and Air-conditioning                |                |                      |           |           |
| 32064                          | Computer Aided Design and Manufacturing Practical | -              | -                    | 6         | 6         |
| 32065                          | Machine Tool Testing and Maintenance Practical    | -              | -                    | 4         | 4         |
| <b>Elective - II Practical</b> |   |                |                      |           |           |
| 32084                          | Mechanical Instrumentation Practical              | -              | -                    | 4         | 4         |
| 32085                          | Robotics Practical                                |                |                      |           |           |
| 32086                          | Refrigeration and Air-conditioning Practical      |                |                      |           |           |
| 32067                          | Project Work                                      | -              | -                    | 4         | 4         |
| Seminar                        |   | 1              | -                    | -         | 1         |
| <b>TOTAL</b>                   |   | <b>17</b>      | <b>-</b>             | <b>18</b> | <b>35</b> |