

SHRI G S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE
M.TECH POWER ELECTRONICS

SEMESTER - I

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | MAXIMUM MARKS | | | | |
|--------------|--------------|----------------------------------|----------------|---|---|------------|------------|---------------|-----|----|-------|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | MA60025 | Advanced Engineering Mathematics | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 2 | EE60024 | Advanced Control Systems | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 3 | EE61003 | Advanced DC/AC Inverters | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 4 | | Elective - I | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 5 | | Elective - II | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 6 | EE61453 | Lab.-I | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 7 | EE61454 | Lab.-II | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 8 | EE61455 | Lab- III | - | - | 4 | - | 2 | - | - | - | 50 | 50 |
| 9 | EE61499 | Comprehensive Viva | - | - | - | - | - | - | - | - | Grade | Grade |
| Total | | | 15 | 0 | 8 | 15 | 4 | 350 | 150 | 80 | 170 | 750 |

I Semester = 19 - 21 Credits

SEMESTER -II

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | MAXIMUM MARKS | | | | |
|--------------|--------------|---|----------------|---|---|------------|------------|---------------|-----|-----|-------|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | EE61613 | Integrated Power Electronics Converters | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 2 | EE61614 | Solid State Control of Electrical Drives | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 3 | EE61612 | Power Electronics Supply Systems & Design | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 4 | | Elective - III | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 5 | | Elective - IV | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 6 | EE61853 | Term Paper | - | - | 2 | - | 1 | - | - | 50 | 50 | 100 |
| 7 | EE61854 | Lab-IV | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 8 | EE61855 | Minor Project & Lab. -V | - | - | 4 | - | 2 | - | - | 40 | 60 | 100 |
| 9 | EE61899 | Comprehensive Viva | - | - | - | - | - | - | - | - | Grade | Grade |
| Total | | | 15 | 0 | 8 | 15 | 4 | 350 | 150 | 130 | 170 | 800 |

SHRI G S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE
M.TECH POWER ELECTRONICS

List of Electives

| Elective I | | Semester I |
|------------|--------------|---------------------------------|
| S.No | Subject Code | Subject |
| 1 | EE61201 | Digital System Design |
| 2 | EE61203 | Components in Power Electronics |
| 3 | EE61202 | Optimization Algorithms |

| Elective II | | Semester I |
|-------------|--------------|--|
| S.No | Subject Code | Subject |
| 1 | EE61301 | Neural Computing System and Applications |
| 2 | EE61302 | AC Controllers |
| 3 | EE61303 | Reliability Engg. |

| Elective III | | Semester II |
|--------------|--------------|--|
| S.No | Subject Code | Subject |
| 1 | EE61709 | Off-grid Wind Energy Conversion Systems |
| 2 | EE61710 | Power Electronics Applications to Power System |
| 3 | EE61711 | Digital Signal Processing |

| Elective IV | | Semester II |
|-------------|--------------|--|
| S.No | Subject Code | Subject |
| 1 | EE61751 | HVDC Engineering |
| 2 | EE61752 | Embedded System Programming |
| 3 | EE61753 | Control of Grid Interfaced Renewable Energy Conversion Systems |

SHRI G S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE
II M.TECH. POWER ELECTRONICS *

SEMESTER - III

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | Maximum Marks | | | | |
|-------|--------------|--|----------------|---|----|------------|------------|---------------|----|----|-----|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | EE61931 | *Industrial Training/Term Paper/Seminar-II | - | - | 8 | - | 4 | - | - | 50 | - | 50 |
| 2 | EE61932 | Dissertation Phase-I | - | - | 20 | - | 10 | - | - | 40 | 60 | 100 |
| 3 | MA61902 | **Research Methodology & IPR | 2 | - | - | 2 | - | 70 | 30 | - | - | 100 |
| Total | | | 2 | 0 | 28 | 2 | 14 | 70 | 30 | 90 | 60 | 250 |

* Industrial training to be carried out between II and III semester during vacation

** This course can be studied online with prior permission of HOD, however, End-semester examination will be conducted in the Institute.

SEMESTER - IV

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | Maximum Marks | | | | |
|-------|--------------|-----------------------|----------------|---|----|------------|------------|---------------|----|----|-----|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | EE61952 | Dissertation Phase-II | - | - | 32 | - | 16 | - | - | 80 | 120 | 200 |
| Total | | | 0 | 0 | 32 | 0 | 16 | 0 | 0 | 80 | 120 | 200 |

SHRI G S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE
M.TECH. POWER SYSTEM AND CONTROL

SEMESTER -I

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | MAXIMUM MARKS | | | | |
|--------------|--------------|--------------------------------------|----------------|---|---|------------|------------|---------------|-----|----|-------|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | MA60025 | Advanced Engineering Mathematics ✓ | 3 | - | - | 3 | 0 | 70 | 30 | - | - | 100 |
| 2 | EE60024 | Advanced Control System ✓ | 3 | - | - | 3 | 0 | 70 | 30 | - | - | 100 |
| 3 | EE63011 | Power System Operation and Control ✓ | 3 | - | - | 3 | 0 | 70 | 30 | - | - | 100 |
| 4 | | Elective - I | 3 | - | - | 3 | 0 | 70 | 30 | - | - | 100 |
| 5 | | Elective - I | 3 | - | - | 3 | 0 | 70 | 30 | - | - | 100 |
| 6 | EE63453 | Lab - I | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 7 | EE63454 | Lab - II | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 8 | EE63455 | Lab - III | - | - | 4 | - | 2 | - | - | - | 50 | 50 |
| 9 | EE63499 | Comprehensive Viva | - | - | - | - | - | - | - | - | Grade | Grade |
| Total | | | 15 | 0 | 8 | 15 | 4 | 350 | 150 | 80 | 170 | 750 |

I Semester = 19 - 21 Credits

SEMESTER -II

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | MAXIMUM MARKS | | | | |
|--------------|--------------|---------------------------------------|----------------|---|---|------------|------------|---------------|-----|-----|-----|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | EE63505 | Digital Protection of Power System ✓ | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 2 | EE63513 | Power System Planning & Reliability ✓ | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 3 | EE63506 | Power Distribution System ✓ | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 4 | | Elective - III | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 5 | | Elective - IV | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 6 | EE63853 | Term Paper | - | - | 2 | - | 1 | - | - | 50 | 50 | 50 |
| 7 | EE63854 | Lab - IV | - | - | 2 | - | 1 | - | - | 40 | 60 | 50 |
| 8 | EE63855 | Minor Project & Lab - V | - | - | 4 | - | 2 | - | - | 40 | 60 | 100 |
| 9 | EE63899 | Comprehensive Viva | - | - | - | - | - | - | - | - | - | Grade |
| Total | | | 15 | 0 | 8 | 15 | 4 | 350 | 150 | 130 | 170 | 700 |

SHRI G S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE
M.TECH. POWER SYSTEM AND CONTROL

List of Electives

| Elective I | | Semester I |
|------------|--------------|--|
| S.No | Subject Code | Subject |
| 1 | EE63201 | Power Electronics Application to Power System |
| 2 | EE63202 | HVDC Transmission System |
| 3 | EE63203 | Dynamic Modeling and control of sustainable energy systems |

| Elective II | | Semester I |
|-------------|--------------|---------------------------|
| S.No | Subject Code | Subject |
| 1 | EE63301 | Power System Deregulation |
| 2 | EE63302 | Digital System Design |
| 3 | EE63303 | Power System Transients |

| Elective III | | Semester II |
|--------------|--------------|------------------------------------|
| S.No | Subject Code | Subject |
| 1 | EE63706 | Digital Control System |
| 2 | EE63707 | Advanced Power System Optimization |
| 3 | EE63708 | Power System Transients |

| Elective IV | | Semester II |
|-------------|--------------|---------------------------------------|
| S.No | Subject Code | Subject |
| 1 | EE63751 | Power Quality |
| 2 | EE63752 | Distributed Generation and Smart Grid |
| 3 | EE63753 | Renewable Power Generation Sources |

SHRI G S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE

II M.TECH. POWER SYSTEM AND CONTROL

SEMESTER - III

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | Maximum Marks | | | | |
|-------|--------------|--|----------------|---|----|------------|------------|---------------|----|----|-----|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | EE63931 | *Industrial Training/Term Paper/Seminar-II | - | - | 8 | - | 4 | - | - | 50 | - | 50 |
| 2 | EE63932 | Dissertation Phase-I | - | - | 20 | - | 10 | - | - | 40 | 60 | 100 |
| 3 | MA63902 | **Research Methodology & IPR | 2 | - | - | 2 | - | 70 | 30 | - | - | 100 |
| Total | | | 2 | 0 | 28 | 2 | 14 | 70 | 30 | 90 | 60 | 250 |

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** This course can be studied online with prior permission of HOD, however, End-semester examination will be conducted in the Institute.

SEMESTER - IV

| S.No. | Subject Code | Subject | Hours per Week | | | Th. Credit | Pr. Credit | Maximum Marks | | | | |
|-------|--------------|-----------------------|----------------|---|----|------------|------------|---------------|----|----|-----|-------|
| | | | L | T | P | | | TH | CW | SW | Pr. | Total |
| 1 | EE63952 | Dissertation Phase-II | - | - | 32 | - | 16 | - | - | 80 | 120 | 200 |
| Total | | | 0 | 0 | 32 | 0 | 16 | 0 | 0 | 80 | 120 | 200 |