

**COMSATS Institute of Information Technology**  
**Registrar Office, Principal Seat, Islamabad**

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No: CIIT-Reg/Notif-911/12/1357

September 13, 2012

**Scheme of Studies of Bachelor of Science (BS) in Electrical (Telecommunication) Engineering,  
BS(ETE)**

**NOTIFICATION**

It is hereby notified that the Board of Studies for Electrical Engineering in its 17<sup>th</sup> meeting held on September 10, 2012 approved the following scheme of studies of Bachelor of Science (BS) in Electrical (Telecommunication) Engineering, BS(ETE) with effect from Spring 2012 at CIIT Lahore Campus only:

- |   |                         |         |
|---|-------------------------|---------|
| i. Minimum Duration:                        | 04 Years                |         |
| ii. Minimum No. of Semesters:               | 08                      |         |
| iii. No. of Credit Hours in each Semester:  | 14-20                   |         |
| <br>iv. Core Courses Requirement:           |                         |         |
| a. Engineering Courses                      | 25 (90 Credit Hours)    |         |
| b. Non-Engineering Courses                  | 12 (37 Credit Hours)    |         |
| <br>v. Elective Courses Requirement:*       |                         |         |
| a. Major/Specialization Electives* *        | 02 (06-08 Credit Hours) |         |
| b. Non-Engineering Electives                | 01 (03 Credit Hours)    |         |
| c. EE Open or Major/Specialization Elective | 01 (03-04 Credit Hours) |         |
| <br>vi. Total No. of Courses:               |                         | 41      |
| <br>vii. Total No. of Credit Hours:         |                         | 139-142 |

**Note:**

The Regulations relating to Undergraduate Degree Programs approved by the Competent Authority and amended from time to time shall also be applicable to this program.

This issues with the approval of the Competent Authority and supersedes notification No. CIIT-Reg/Notif-138/11/202 dated February 8, 2012.

  
Nadeem Uddin Qureshi  
Additional Registrar

**Encl:** Pages 5 including this page.

**Distribution:**

1. Dean, Faculty of Engineering, CIIT.
2. Dean of Research, Innovation and Commercialization (DORIC), CIIT.
3. Director, CIIT Lahore Campus.
4. Chairman, Department of Electrical Engineering, CIIT.
5. Incharge, Academic Section, CIIT Lahore Campus.
6. HoD/Incharge, Department of Electrical Engineering, CIIT Lahore Campus.
7. Controller of Examinations, CIIT.
8. Incharge, Examination Department, CIIT Lahore Campus.

**CC:**

1. PS to Rector.
2. PA to Registrar.

**List of Core Courses:****a. List of Engineering Courses:**

| Serial No | Course Code | Course Title                             | Credits Hours <sup>II</sup> | Prerequisite(s) <sup>†</sup> |
|-----------|-------------|--|-----------------------------|------------------------------|
| 1         | CSC141      | Introduction to Computer Programming     | 4(3, 1)                     |                              |
| 2         | CSC241      | Object Oriented Programming              | 4(3, 1)                     | CSC141                       |
| 3         | CSC112      | Algorithms and Data Structures           | 4(3, 1)                     | CSC141                       |
| 4         | EEE113      | Engineering Drawing                      | 1(0, 1)                     |                              |
| 5         | EEE112      | Engineering Mechanics and Thermodynamics | 3(3, 0)                     |                              |
| 6         | EEE114      | Introduction to Telecommunications       | 3(3, 0)                     |                              |
| 7         | EEE121      | Electric Circuits Analysis I             | 4(3, 1)                     | PHY121                       |
| 8         | EEE222      | Electric Circuits Analysis II            | 4(3, 1)                     | MTH242,<br>EEE121            |
| 9         | EEE241      | Digital Logic Design                     | 4(3, 1)                     |                              |
| 10        | EEE231      | Electronics I                            | 4(3, 1)                     | EEE121                       |
| 11        | EEE232      | Electronics II                           | 4(3, 1)                     | EEE231                       |
| 12        | EEE261      | Electromagnetic Theory                   | 3(3, 0)                     | MTH105                       |
| 13        | EEE251      | Probability Methods in Engineering       | 3(3, 0)                     | MTH104,<br>MTH231            |
| 14        | EEE223      | Signals and Systems                      | 4(3, 1)                     | MTH242                       |
| 15        | EEE375      | Power Distribution and Utilization       | 3(3, 0)                     |                              |
| 16        | EEE371      | Electric Machines                        | 4(3, 1)                     | EEE222                       |
| 17        | EEE325      | Control Systems                          | 4(3, 1)                     | EEE223                       |
| 18        | EEE342      | Microprocessor Systems and Interfacing   | 4(3, 1)                     | EEE241                       |
| 19        | EEE314      | Data Communication and Computer Networks | 4(3, 1)                     |                              |
| 20        | EEE324      | Digital Signal Processing                | 4(3, 1)                     | EEE223                       |
| 21        | EEE352      | Analog Communication Systems             | 4(3, 1)                     | EEE223,<br>EEE251            |
| 22        | EEE353      | Digital Communication Systems            | 4(3, 1)                     | EEE352                       |
| 23        | EEE463      | Antenna and Radio Wave Propagation       | 4(3, 1)                     | EEE261                       |
| 24        | EEE490      | Final Year Project (Part I)**            | 1(0, 1)                     |                              |
| 25        | EEE490      | Final Year Project (Part II)**           | 5(0, 5)                     |                              |

**b. List of Non-Engineering Courses:**

| Serial No | Course Code | Course Title                          | Credits Hours <sup>II</sup> | Prerequisite(s) <sup>†</sup> |
|-----------|-------------|---------------------------------------|-----------------------------|------------------------------|
| 1         | PHY121      | Applied Physics for Engineers         | 4(3, 1)                     |                              |
| 2         | HUM100      | English Comprehension and Composition | 3(3, 0)                     |                              |
| 3         | HUM102      | Report Writing Skills                 | 3(3, 0)                     | HUM100                       |
| 4         | ECO300      | Engineering Economics                 | 3(3, 0)                     |                              |
| 5         | MGT462      | Project Planning and Management       | 3(3, 0)                     |                              |
| 6         | HUM110      | Islamic Studies                       | 3(3, 0)                     |                              |
| 7         | HUM111      | Pakistan Studies                      | 3(3, 0)                     |                              |
| 8         | MTH104      | Calculus and Analytic Geometry        | 3(3, 0)                     |                              |
| 9         | MTH105      | Multivariable Calculus                | 3(3, 0)                     | MTH104                       |
| 10        | MTH231      | Linear Algebra                        | 3(3, 0)                     |                              |
| 11        | MTH242      | Differential Equations                | 3(3, 0)                     | MTH104                       |
| 12        | MTH375      | Numerical Computations                | 3(2, 1)                     | MTH104,<br>MTH231,<br>CSC141 |



**c. List of Elective Courses\*****i. List of Major/Specialization Electives:\***

| Serial No. | Course Code | Course Title                                       | Credits Hours <sup>!!</sup> | Prerequisite(s) <sup>†</sup> |
|------------|-------------|--|-----------------------------|------------------------------|
| 1          | EEE354      | Telecommunication Systems Engineering              | 3(3, 0)                     | EEE352                       |
| 2          | CSC341      | Network Programming                                | 4(3, 1)                     | CSC141, EEE314               |
| 3          | EEE454      | Transmission & Switching Systems                   | 3(3, 0)                     | EEE353                       |
| 4          | EEE464      | Wireless Communication Systems                     | 3(3, 0)                     | EEE352                       |
| 5          | EEE362      | Microwave Engineering                              | 4(3, 1)                     | EEE232, EEE261               |
| 6          | EEE455      | Optical Fiber Communications                       | 3(3, 0)                     | EEE362                       |
| 7          | EEE456      | Broadband Technologies                             | 3(3, 0)                     | EEE314                       |
| 8          | EEE465      | Microwave & Satellite Communication Systems        | 3(3, 0)                     | EEE353                       |
| 9          | EEE466      | Radars and Navigation Aids                         | 3(3, 0)                     | EEE463                       |
| 10         | EEE467      | Telecommunication Policies Standards & Regulations | 3(3, 0)                     |                              |
| 11         | EEE415      | Digital Image Processing                           | 4(3, 1)                     | MTH231, EEE223               |

**ii. List of Non-Engineering Electives:\***

| Serial No | Course Code | Course Title                          | Credits Hours <sup>!!</sup> | Prerequisite(s) <sup>†</sup> |
|-----------|-------------|---------------------------------------|-----------------------------|------------------------------|
| 1         | LAW300      | Corporate Law                         | 3(3, 0)                     |                              |
| 2         | MGT403      | Entrepreneurship                      | 3(3, 0)                     |                              |
| 3         | MGT131      | Financial Accounting                  | 3(3, 0)                     |                              |
| 4         | MGT330      | Financial Management                  | 3(3, 0)                     |                              |
| 5         | MGT350      | Human Resource Management             | 3(3, 0)                     |                              |
| 6         | MGT450      | HRM Policies and Practices            | 3(3, 0)                     |                              |
| 7         | MGT460      | Operations Management                 | 3(3, 0)                     |                              |
| 8         | MGT522      | Marketing of IT and Telecom Products  | 3(3, 0)                     |                              |
| 9         | HUM202      | Creative Thinking and Decision Making | 3(3, 0)                     |                              |
| 10        | HUM220      | Introduction to Psychology            | 3(3, 0)                     |                              |
| 11        | HUM200      | Business Communication Workshop       | 3(3, 0)                     | HUM100                       |
| 12        | HUM320      | Introduction to Sociology             | 3(3, 0)                     |                              |
| 13        | HUM400      | Business Communication                | 3(3, 0)                     |                              |
| 14        | MTH374      | Optimization                          | 3(3, 0)                     | MTH102                       |
| 15        | MTH467      | Operations Research                   | 3(3, 0)                     | MTH102                       |

**iii. List of EE Open or Major/Specialization Elective**

There is no separate list. With the consent of Academic Advisor, Project Supervisor & Course Instructor, the students can take any approved course of EE which he/she has not taken before including the electives of (Telecommunications, Power, Computer, Electronics) according to his/her aptitude/future plans and further requirement (if any) of his/her final year project.

\* The list of Electives may be revised from time to time and will be offered by the department subject to the availability of the faculty.

!! 03 credit hours of theory is equivalent to 3 hours of lectures whereas 01 credit hour of lab is equivalent to 03 hours of lab session. All the lab sessions are graded. Students have to pass both theory and lab to earn the course credits.

† Courses with prerequisites can only be allowed if all prerequisite courses have been passed.

‡ Student must clear all the engineering subjects in the first five semesters to be eligible for Final year project.



**Tentative Plan of Studies**

The course offering in each semester as given below is not fixed; it may vary depending on the availability of faculty and needs of the students.

| <b>Semester 1</b>  |                                       |                     |                        |
|--------------------|---------------------------------------|---------------------|------------------------|
| <b>Course Code</b> | <b>Course Title</b>                   | <b>Credit Hours</b> | <b>Prerequisite(s)</b> |
| HUM100             | English Comprehension and Composition | 3(3, 0)             |                        |
| MTH231             | Linear Algebra                        | 3(3, 0)             |                        |
| PHY121             | Applied Physics for Engineers         | 4(3, 1)             |                        |
| MTH104             | Calculus and Analytic Geometry        | 3(3, 0)             |                        |
| EEE113             | Engineering Drawing                   | 1(0, 1)             |                        |
| EEE114             | Introduction to Telecommunications    | 3(3, 0)             |                        |
|                    |                                       | <b>17(15, 2)</b>    |                        |

| <b>Semester 2</b>  |  |                     |                        |
|--------------------|--|---------------------|------------------------|
| <b>Course Code</b> | <b>Course Title</b>                      | <b>Credit Hours</b> | <b>Prerequisite(s)</b> |
| HUM111             | Pakistan Studies                         | 3(3, 0)             |                        |
| MTH105             | Multivariable Calculus                   | 3(3, 0)             | MTH104                 |
| EEE112             | Engineering Mechanics and Thermodynamics | 3(3, 0)             |                        |
| CSC141             | Introduction to Computer Programming     | 4(3, 1)             |                        |
| EEE121             | Electric Circuits Analysis I             | 4(3, 1)             | PHY121                 |
| HUM110             | Islamic Studies                          | 3(3, 0)             |                        |
|                    |  | <b>20(18, 2)</b>    |                        |

| <b>Semester 3</b>  |                             |                     |                        |
|--------------------|-----------------------------|---------------------|------------------------|
| <b>Course Code</b> | <b>Course Title</b>         | <b>Credit Hours</b> | <b>Prerequisite(s)</b> |
| MTH242             | Differential Equations      | 3(3, 0)             | MTH104                 |
| EEE241             | Digital Logic Design        | 4(3, 1)             |                        |
| MTH375             | Numerical Computations      | 3(2, 1)             | MTH104, MTH231, CSC141 |
| EEE231             | Electronics I               | 4(3, 1)             | EEE121                 |
| CSC241             | Object Oriented Programming | 4(3, 1)             | CSC141                 |
|                    |                             | <b>18(14, 4)</b>    |                        |

| <b>Semester 4</b>  |                                    |                     |                        |
|--------------------|------------------------------------|---------------------|------------------------|
| <b>Course Code</b> | <b>Course Title</b>                | <b>Credit Hours</b> | <b>Prerequisite(s)</b> |
| EEE251             | Probability Methods in Engineering | 3(3, 0)             | MTH104, MTH231         |
| EEE222             | Electric Circuits Analysis II      | 4(3, 1)             | MTH242, EEE121         |
| EEE261             | Electromagnetic Theory             | 3(3, 0)             | MTH105                 |
| EEE223             | Signals and Systems                | 4(3, 1)             | MTH242                 |
| EEE375             | Power Distribution and Utilization | 3(3, 0)             |                        |
|                    |                                    | <b>17(15, 2)</b>    |                        |

| Semester 5  |                                |                  |                 |
|-------------|--------------------------------|------------------|-----------------|
| Course Code | Course Title                   | Credit Hours     | Prerequisite(s) |
| EEE232      | Electronics II                 | 4(3, 1)          | EEE231          |
| EEE371      | Electric Machines              | 4(3, 1)          | EEE222          |
| CSC112      | Algorithms and Data Structures | 4(3, 1)          | CSC141          |
| EEE324      | Digital Signal Processing      | 4(3, 1)          | EEE223          |
| EEE352      | Analog Communication Systems   | 4(3, 1)          | EEE223, EEE251  |
|             |                                | <b>20(15, 5)</b> |                 |

| Semester 6  |  |                  |                 |
|-------------|--|------------------|-----------------|
| Course Code | Course Title                             | Credit Hours     | Prerequisite(s) |
| ECO300      | Engineering Economics                    | 3(3, 0)          |                 |
| EEE325      | Control Systems                          | 4(3, 1)          | EEE223          |
| EEE342      | Microprocessor Systems and Interfacing   | 4(3, 1)          | EEE241          |
| EEE314      | Data Communication and Computer Networks | 4(3, 1)          |                 |
| EEE463      | Antenna and Radio Wave Propagation       | 4(3, 1)          | EEE261          |
|             |  | <b>19(15, 4)</b> |                 |

| Semester 7  |                                 |                      |                 |
|-------------|---------------------------------|----------------------|-----------------|
| Course Code | Course Title                    | Credit Hours         | Prerequisite(s) |
| HUM102      | Report Writing Skills           | 3(3, 0)              | HUM100          |
|             | Major Specialization/Elective I | 3(3, 0)/4(3, 1)      |                 |
|             | Non-Engineering Elective        | 3(3, 0)              |                 |
| EEE490      | Final Year Project (Part I)     | 1(0, 1)              |                 |
| EEE353      | Digital Communication Systems   | 4(3, 1)              | EEE352          |
|             |                                 | <b>14-15(12,2-3)</b> |                 |

| Semester 8  |                                  |                     |                 |
|-------------|----------------------------------|---------------------|-----------------|
| Course Code | Course Title                     | Credit Hours        | Prerequisite(s) |
| MGT462      | Project Planning and Management  | 3(3, 0)             |                 |
|             | Major Specialization/Elective II | 3(3, 0)/4(3, 1)     |                 |
|             | EE Open/Free Elective            | 3(3, 0)/4(3, 1)     |                 |
| EEE490      | Final Year Project (Part II)     | 5(0, 5)             |                 |
|             |                                  | <b>14-16(9,5-7)</b> |                 |

*Immanuel*