

# **Institute of Science Trade & Technology (ISTT)**

## **Department of Electronics and Communication Engineering (ECE)**

### **Semester Wise Courses**

#### **B.Sc. Engineering in Electronics & Communication Engineering (ECE)**

**Session: 2017-2018**

The B.Sc. Eng. program in Electronics & Communication Engineering (ECE) is designed to produce skilled graduates in the field to meet the growing demands of electronics & communication engineers in Bangladesh and abroad. The program consisting of 147 credits and normally extends for eight semesters, that is, four academic years. Each 3 credit theoretical course requires 3 class hours per week for 15 weeks, that is, a total of 45 hours in each semester. Each credit of laboratory work requires at least 15 lab sessions (each of at least 2 hours duration). Each 3 credit theory course carries 100 marks, of which 20% marks are allocated for in-course assessment of class work (class tests, presentations etc.) and the remaining 80% marks are reserved for the final examination. The duration of the final examination for each 3 credit theoretical course is 3 hours. The duration of the final examination for each laboratory course will be at least 3 hours and the marks for each laboratory course (1.5 credits) will be 50, of which 40% marks are allocated for in-course assessment and the remaining marks are reserved for the Lab Final examination. Each viva-voce examination will be conducted for 50 marks by a committee appointed by the National University. The minimum CGPA requirement for the bachelor's degree in Electronics & Communication Engineering is 2.00 or above and having no F grade in any course. The grading system introduced by the University Grants Commission (UGC) of Bangladesh will be followed for evolution of the performance of the students. (Please consult the General Rules for the undergraduate program for admission requirements, semester duration, grading system, project evaluation and other relevant information).

### **Semester-Wise Course Distribution:**

#### **1<sup>st</sup> Semester (Year 1)**

Course Code	Course Title	Credits
ECE-101	English	3.0
ECE-102	Physics-I (Electricity, Magnetism & Optics)	3.0
ECE-103	Math-I: Differential and Integral Calculus)	3.0
ECE-104	Math-II: Linear Algebra	3.0
ECE-105	Fundamental of Computer and Programming	3.0
ECE-106	Physics-I Lab	1.5
ECE-107	Fundamental of Computer Lab	1.5
<b>Total</b>		<b>18</b>

#### **2<sup>nd</sup> Semester (Year 1)**

Course Code	Course Title	Credits
ECE-111	Physics-II (Modern Physics, Heat & Thermodynamics)	3.0
ECE-112	Math-III: Differential Equations & Complex Variables	3.0
ECE-113	Electrical Circuits- I	3.0
ECE-114	Electronic Circuits- I	3.0
ECE-115	Digital Electronics- I	3.0
ECE-116	Electrical Circuits- I Lab	1.5
ECE-117	Electronics- I Lab	1.5
<b>Total</b>		<b>18</b>

#### **3<sup>rd</sup> Semester (Year-2)**

Course Code	Course Title	Credits
ECE-201	Statistics and Probability	3.0
ECE-202	Math-IV: Engineering Mathematics	3.0
ECE-203	Electrical Circuits- II	3.0
ECE-204	Electronic Circuits- II	3.0
ECE-205	Object Oriented Programming	3.0
ECE-206	Electrical Circuits- II Lab	1.5
ECE-207	Object Oriented Programming Lab	1.5
ECE-208	Electronic Circuits- II Lab	1.5
<b>Total</b>		<b>19.5</b>

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### **4<sup>th</sup> Semester (Year 2)**

Course Code	Course Title	Credits
ECE-211	Fundamentals of Communications	3.0
ECE-212	Instrumentation and Measurements	3.0
ECE-213	Digital Electronics- II	3.0
ECE-214	Signals and Systems	3.0
ECE-215	Computer Architecture	3.0
ECE-216	Digital Electronics- II Lab	1.5
ECE-217	Fundamentals of Communications Lab	1.5
ECE-219	Viva Voce	2.0
<b>Total</b>		<b>20</b>

### **5<sup>th</sup> Semester (Year 3)**

Course Code	Course Title	Credits
ECE-301	Electromagnetic Fields and Waves	3.0
ECE-302	Numerical Analysis	3.0
ECE-303	Microprocessors Assembly Language	3.0
ECE-304	Data Communications	3.0
ECE-305	Electronic Materials	3.0
ECE-306	Data Communications Lab	1.5
ECE-307	Microprocessors Assembly Language Lab	1.5
<b>Total</b>		<b>18</b>

### **6<sup>th</sup> Semester (Year 3)**

Course Code	Course Title	Credits
ECE-311	Optical Fiber Communication	3.0
ECE-312	Digital Signal Processing	3.0
ECE-313	Industrial & Power Electronics	3.0
ECE-314	Antenna & Propagation	3.0
ECE-315	Computer Peripherals and Interfacing	3.0
ECE-316	Computer Peripherals and Interfacing Lab	1.5
ECE-317	Industrial & Power Electronics Lab	1.5
<b>Total</b>		<b>18</b>

### **7<sup>th</sup> Semester (Year 4)**

Course Code	Course Title	Credits
ECE-401	Microwave Engineering	3.0
ECE-402	Wireless Communication Systems	3.0
ECE-403	Control Systems	3.0
ECE-404	Computer Networks	3.0
ECE-405	Industrial Management	3.0
ECE-406	Computer Networks Lab	1.5
ECE-407	Wireless Communication Systems Lab	1.5
ECE-439	Project (to be started)	
<b>Total</b>		<b>18</b>

### **8<sup>th</sup> Semester (Year 4)**

Course Code	Course Title	Credits
ECE-411	Information Theory and Coding	3.0
ECE-412	Biomedical Instruments	3.0
ECE-413	Network Security	3.0
ECE-42x	Optional (Select one from optional courses)	3.0
ECE-439	Project Report and Project Defense	5.5
<b>Total</b>		<b>17.5</b>

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<b>Optional Courses</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
ECE-420	Neural networks	3.0
ECE-421	Digital Image Processing	3.0
ECE-422	Multimedia Communication	3.0
ECE-423	High Speed Telecommunication	3.0
ECE-424	Radar and Navigation	3.0
ECE-425	Radio and Television Engineering	3.0
ECE-426	IC and VLSI Technology	3.0

\*The total number of credits for the Bachelor's program in Electronics and Communication Engineering is **147**, of which 2 credits are allocated for viva voce examination.

### **Grading System of ECE**

The total performance of a student in a given course is based on a scheme of continuous assessment. For theory courses, continuous assessment is made through a set of quizzes, class evaluation, class participation, homework assignment and a semester final examination. The assignment in laboratory/practical courses is made through observation of the student at work during the class, viva-voce during laboratory hours and quizzes.

Each course has a certain number of credits, which describes its corresponding weight. A letter grade with a specified number of grade points is awarded to each course. A student's performance is measured both by the number of credits completed satisfactorily and by the weighted average of the grade points earned. A minimum grade point average (GPA) is essential for satisfactory progress. A minimum number of credits have to be earned in order to qualify for the degree requirements. Letter grades and corresponding grade points (as approved by the University Grants Commission of Bangladesh) will be awarded in accordance with the provision shown below:

<b>Letter Grade</b>	<b>Grade Point</b>	<b>Numerical Grade</b>
<b>A+</b>	4.00	80% and above
<b>A</b>	3.75	75% to less than 80%
<b>A-</b>	3.50	70% to less than 75%
<b>B+</b>	3.25	65% to less than 70%
<b>B</b>	3.00	60% to less than 65%
<b>B-</b>	2.75	55% to less than 60%
<b>C+</b>	2.50	50% to less than 55%
<b>C</b>	2.25	45% to less than 50%
<b>D</b>	2.00	40% to less than 45%
<b>F*</b>	0.00	Less than 40%

\*Subject in which the student gets F grades shall not be counted towards credit hours requirements and for the calculation of Grade Point Average (GPA) or Cumulative GPA (CGPA).