



20 December 2020

Department of EEE, BUET
List of Offered Courses
Postgraduate April 2020 Semester

Sl. No.	Course No.	Course Title	Teachers' Name	Day & Time	Online LMS / Room**
1	EEE 6910	Modern Power System Modeling	Dr. S. Shahnawaz Ahmed	Saturday 3:00 pm - 5:30 pm	MS Teams/ ECE 139
2	EEE 6604	Antennas and propagation	Dr. Pran Kanai Saha	Tuesday 5:00 pm – 7:30 pm	MS Teams/ ECE 139
3	EEE 6205	Biomedical Signal Processing	Dr. Md. Aynal Haque	Sunday 5:00 pm - 7:30 pm	MS Teams/ ECE 139
4	EEE 6405	Advanced VLSI Design	Dr. A. B. M. Harun-Ur-Rashid	Monday 5:00 pm - 7:30 pm	MS Teams/ ECE 634
5	EEE 6501	Electric and Magnetic Properties of Materials	Dr. Mohammad Jahangir Alam	Monday 2:30 pm - 5:00 pm	MS Teams/ ECE 235
6	EEE 6212	Genomic Signal Processing	Dr. Mohammed Imamul Hassan Bhuiyan	Sunday 3:00 pm - 5:30 pm	MS Teams/ ECE 634
7	EEE 6503	Laser Theory	Dr. Muhammad Anisuzzaman Talukder	Monday 6:00 pm - 9:00 pm	MS Teams/ ECE 627
8	EEE 6211	Digital Speech Processing	Dr. Celia Shahnaz	Saturday 5:00 pm - 8:00 pm	MS Teams/ ECE 632
9	EEE 6102	Artificial Neural Systems	Dr. Mohammad Ariful Haque	Saturday 10:00 am - 1:00 pm	MS Teams/ ECE 538
10	EEE 6204	Optical Fibre Communication	Dr. Mohammad Faisal	Monday 5:00 pm - 8:00 pm	MS Teams/ ECE 632
11	EEE 6202	Advanced Telecommunication Engineering	Dr. Md. Farhad Hossain	Tuesday 5:00 pm - 8:00 pm	MS Teams/ ECE 627
12	EEE 6903	Advanced Protective Relays	Dr. Md. Shamim Reza	Wednesday 10:00 am - 1:00 pm	MS Teams/ ECE 239
13	EEE 6404	VLSI Technology and device modeling	Dr. Apratim Roy	Tuesday 2:00 pm - 5:00 pm	MS Teams/ ECE 538
14	EEE 6502	Electronics of Solids	Dr. Mahbub Alam	Monday 2:00 pm - 5:00 pm	MS Teams/ ECE 632
15	EEE 6906	Reliability of Power System	Dr. Nahid-Al-Masood	Tuesday 6:00 pm - 9:00 pm	MS Teams/ ECE 139
16	EEE 6002	Selected Topics in Electrical and Electronic Engineering – Privacy Preserving Machine Learning	Dr. Hafiz Imtiaz	Saturday 2:00 pm - 5:00 pm	MS Teams/ ECE 627



17	EEE 6301	Power Semiconductor Circuits	Dr. Muhammad Abdullah Arafat	Tuesday 3:00 pm - 6:00 pm	MS Teams/ ECE 139
18	EEE 6407	Carbon Nanotechnology	Dr. Ahmed Zubair	Saturday 3:00 pm - 6:00 pm	MS Teams/ EEE 634
19	EEE 6504	Semiconductor Materials and Heterostructures	Dr. Md Zunaid Baten	Saturday 10:00 am - 1:00 pm	MS Teams/ EEE 627

**** As long as physical class is postponed for COVID-19, classes will be taken using online LMS platform MS Teams. When the physical class will be resumed, classes will be held in the designated class rooms.**

Rules for Divisions of Specialization and Choice of Courses:

Presently there are two divisions of Specialization, namely (1) Electrical Energy and Power Systems (EEPS) Division, and (2) Communication and Electronics (C&E) Division, under which a postgraduate student can specialize. Presently the PG theory courses are arranged as: Interdisciplinary group (EEE 6001-6002, EEE 6101-6102, EEE 6301-6302, EEE 6701-6703), EEPS Division (EEE 6801-6803, EEE 6901-6910) and C&E Division (EEE 6201-6212, EEE 6401-6410, EEE 6501-6506, EEE 6601-6606).

- [1] For the degree of M.Sc. Engg., a student has to take a minimum of 6 (six) courses of which at least 3 (three) are from his/her chosen Division, and remaining 3 (three) are from the Interdisciplinary group or any Division.**
- [2] For the degree of M. Engg., a student has to take a total of 10 (ten) courses of which at least 5 (five) are from his/her Division and remaining 5 (five) are from the Interdisciplinary group or any Division.**
- [3] The topic of the thesis (for M.Sc. Engg. degree)/ project (for M. Engg. degree) must be related to the Division of the student or the Interdisciplinary group.**
- [4] The course EEE 6002 can be taken by a student only once in any program irrespective of the topic title under EEE 6002.**
- [5] MAXIMUM number of seats for each course is 40 and minimum is 5.**
- [6] Thesis/Project (EEE 6000) registration is not allowed in the First Semester of M.Sc. Engg./M. Engg. program of a student. For thesis/project registration (for students other than those in the first semester), PERMISSION of concerned teacher, who will be the supervisor, MUST be taken through application to the Head of the Department.**

Dr. Md. Farhad Hossain
Professor
& Member Secretary, BPGS, EEE, BUET

Course Goal:

The goal of this course is to introduce post-graduate students to the area of privacy preserving machine learning and data analysis. There has been increasing demand for privacy of user data, especially in big corporations such as Google, Apple, Uber and many others. The focus of the course will be differential privacy, which is one of the cutting-edge techniques for privacy preserving computations. This course aims to help students take up research/engineering careers in data/algorithm privacy. At the end of this course, students should have a solid understanding of the fundamental concepts of private data analysis, and have a good grasp of the design principles of practical and useful machine learning algorithms that provide strong and provable privacy guarantees for various modern applications.

Course Contents:

Review of common machine learning algorithms, case studies of high-profile privacy breaches, mathematical definition of privacy, differential privacy (DP), basic building blocks of privacy-preserving algorithm design, achieving DP via noise for numeric queries, achieving DP via sampling for non-numeric queries, the Gaussian mechanism, composition of multi-stage differentially private algorithms, differentially private empirical risk minimization, differentially private stochastic gradient descent, local differential privacy, differentially private heavy hitters.

Pre-requisites:

Good familiarity with probability, algorithms, linear algebra, and calculus.