**EE565 APPLIED ELECTROMAGNETICS  
COURSE CATALOG INFO**

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| **Course Code :**EE565 | | | | | **Course Name :**Applied Electromagnetics | | | |
| **Semester** | **Lecture + Laboratory + PS** | | **Local Credit** | **ECTS** | **Language** | **Category** | **Instructional Methods** | **Prerequisites** |
|  | (3+0+0) | | 3 | 7 | English | Core | Course |  |
| **Course Content** | | | | Electromagnetic Fundamentals. Introduction to Green's Functions: Scalar Green's functions for solving wave equations. Electromagnetic wave scattering from rough surfaces: Constructing Surface Integral Equations for Different Types of Boundary Conditions. Moment Method and related numerical applications for numerical solution of surface integral equations. Random rough surfaces resulting from stationary random processes (Gaussian, exponential, fractal). Random rough surface wave scattering applications in electromagnetics-acoustics engineering. | | | | |
| **Course Outcomes** | | | | **CO 1.** recognize the mathematical backgrounds and the methods of the Electromagnetic wave theory and to have a knowledge about fundamental solutions to wave equations.  **CO 2.** analyze and solve the wave equation in basic coordinate systems, knowledge on special functions which are the solutions of wave equation.  **CO 3.** have the knowledge of Green’s functions which are used in electromagnetic theory, formulation of the problems by integral equations using Green’s functions  **CO 4.** solve the fundamental EM scattering problems related to open regions such as deterministic and randomly formed rough surfaces  **CO 5.** Gain experience on the use of major numerical techniques applied for the solution of electromagnetic scattering problems. | | | | |
|  | | **Program Outcomes** | | | | | | |

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| **CONTRIBUTION OF COURSE OUTCOMES ON ELECTRONICS ENGINEERING PROGRAM OUTCOMES** | | | | | |
| **Course\Program** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |

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| **COURSE ASSESMENT AND ECTS WORK LOAD** | | | |
| **Type of Work** | **Count** | **ECTS WORK LOAD** | |
| **Time (Hour)(Including prep. time)** | **Work Load** |
| Attendance | 14 | 3 | 42 |
| Final Exam |  |  | 0 |
| Quizzes |  |  | 0 |
| Term project |  |  | 0 |
| Reports |  |  | 0 |
| Final Project |  |  | 0 |
| Seminar |  |  | 0 |
| Assignments |  |  | 0 |
| Presentation |  |  | 0 |
| Midterms |  |  | 0 |
| Project |  |  | 0 |
| Laboratory | 14 | 0 | 0 |
| Tutorial | 14 | 0 | 0 |
| Other(Self study) |  |  | 0 |
|  | | **Total work load** | 42 |
|  | | **Total work load/25** | 1.68 |
|  | | **ECTS Credit** | 2 |