Department of Electrical and Information Technology, updated 2025-08-25

Course Description for Electromagnetic Fields (EITF80) (formerly ESS050), as given to E3 in the Study Periods 1 (HT1) and 2 (HT2), 2025

Course Name

The course is officially called “Electromagnetic Fields” but to avoid confusion with similar courses in other programs, it is also known as Electromagnetic Fields for E (or EF for E).

Course Scope

EF for E gives 9 hp and is one of the compulsory courses in Electrical Engineering (E) program. The teaching consists of 42 hours of lectures and 40 hours of exercises in Study Periods 1 (HT1) and 2 (HT2).

Course Schedule

The course schedule is available in the official “schemageneratorn”. Note that the schedule can vary substantially from week to week, due to varying intensity of the course, availability of lecture room, etc., so please check it carefully.

Course Material

The following materials are available on the course website:

1. Course Description (this document)
2. List of Exercise Class Problems
3. Lecture Plan in relation to the textbook

The textbook for the course is “Field and Wave Electromagnetics (2nd Edition, Pearson New International Edition)”, David K. Cheng, Pearson, 2013. ISBN-10:1292026561, ISBN-13: 978-1292026565. It can be purchased from KFS AB or from online bookstores (such as adlibris.com and amazon.se). It is important for all students to get a personal copy of the textbook, since the textbook will be used heavily in this course.

Teaching Staff

Buon Kiong Lau	Professor Lecturer, Course Responsible Email: buon_kiong.lau then @ and followed by eit.lth.se
Yuyan Cao	PhD Student Exercise Class Leader Email: yuyan.cao then @ and followed by eit.lth.se

Course Website

http://www.eit.lth.se/kurs/eitf80

Exercise Classes

After every lecture (except for the last lecture), two similar 2-hour exercise classes will be held. Students can choose to attend any one of the two classes, but if there are too many attending one class, please consider attending the other one, so that you can get help more quickly from the exercise class leader.

Course Administrator

Erik Göthe, Administrator; Email: erik.gothe then @ followed by eit.lth.se; Tel: 046-2229763

Students who are repeating this course should contact Erik Göthe by email to ask for help with re-registration.

Electronic Quizzes

Though non-compulsory, students are strongly encouraged to complete an electronic (or online) quiz, usually for every two lectures presented. There will be altogether 10 quizzes. The multiple-choice questions are designed to help you review the lecture material. The quiz can be done as many times as you wish within one week (or longer, if notified), and it will be considered complete when all questions are answered correctly. Those who complete all quizzes will be awarded 3 bonus points at the first exam. The bonus points do not apply to re-exams. Those who are only able to complete 9 quizzes by their deadlines will be allowed to obtain 3 bonus points, providing they successfully complete an extra quiz (revision quiz) that contains randomly selected questions from all 10 quizzes. Re-registered students are also eligible for the 3 bonus points in the first exam (but again, not in the two re-exams) if they complete the quizzes according to the above requirements once more after re-registration.

Written Test

The written test is a compulsory component in the course. It is given during the third week of Study Period 2 (HT2). The 2-hour test will consist of two parts: Part 1 with 4 multiple-choice questions (20 points) and Part 2 with 4 calculation questions (40 points). The passing mark is 30 points. There is no higher grade than passing and it does not affect the final grade of the course. However, passing the test is one requirement of passing the course, and it will give 3 hp (out of 9 hp), which is important to those who need to show CSN their study load.

The Collection of Formulas for this course (2025 version) is the only material that is allowed at the test. There should not be any writing or markings on the Collection of Formulas. Students should bring their own Collection of Formulas, although a limited number will be made available at the test.

Up to two repeat written tests may be given. Check the course schedule on TimeEdit for details. Students should register for the repeat tests by sending an email to the Course Responsible between 1 and 3 weeks in advance. A repeat test will be cancelled if no student registers for it.

Written Examination

The written exam is a compulsory component in the course. A student may take the exam even if he or she has not passed the written test. The 5-hour written examination will consist of two parts: Part 1 with 8 multiple choice questions (20 points) and Part 2 with 4 calculation questions (40 points). The maximum score is 60 points. To get the grades of 3, 4, and 5, one will need to obtain 30, 40 and 50 points, respectively.

The Collection of Formulas for this course (2025 version) is the only material that is allowed at the exam. There should not be any writing or markings on the Collection of Formulas. Students should bring their own Collection of Formulas, although a limited number will be made available at the exam.

There may be up to two re-exams, the schedule of which are available on TimeEdit. Those who wish to take re-exams should register in advance. If no student registers for a re-exam, the re-exam will be cancelled.

Register for exams: You must register for the exam you wish to take to be guaranteed a place in the exam room. During the registration period, the dates for the current exams are listed. If you cannot find the exam you wish to take, please contact your department for further information.

Course Completion and Final Grade

The course will be completed (or approved) when a student has passed the written test and the final exam. The final course grade will be identical to the exam grade.