



## Course memo, spring 2025

# EI2410 Field Theory for Guided Waves (7,5 credits)

## 1 Administrative

### 1.1 General course information

<https://www.kth.se/student/kurser/kurs/EI2410/>

### 1.2 Canvas-room for this course offering

<https://canvas.kth.se/courses/52278>

### 1.3 Department

Electrical Engineering, Teknikringen 29-33

### 1.4 Course responsible, lecturer and examiner

Martin Norgren, [mnorgren@kth.se](mailto:mnorgren@kth.se)

### 1.5 Course material

Reading and practice:

- M. Norgren, Guided Electromagnetic Waves (course compendium TRITA-EECS-RP-2020:1). Available at Kårbokhandeln.
- Additional material in the Canvas room.

Examples of text books for additional reading:

- J. Van Bladel, Electromagnetic Fields, 2:nd ed
- R. E. Collin, Foundations for Microwave engineering, 2:nd ed
- D. M. Pozar, Microwave Engineering, 4:th ed

## 2 Examination moments and grading criteria

### 2.1 Mandatory part

#### 2.1.1 Project work (PROB; 2.5 credits; grades A, C, E, Fx, F)

- Carried out in groups of 2-3 students.
- Project topic(s) will be presented in early February.
- For passing grades, all group members must take active part in the presentation.

Grading criteria for the project work:

**F** Insufficient attempt or failed completion from Fx.

**Fx** Minor flaws that disqualify the grade E.

**E** The main subtask carried out satisfactory and properly reported.

**C** The gross part of the subtasks carried out satisfactory and properly reported.

**A** All subtasks carried out satisfactory and properly reported.

#### 2.1.2 Oral exam (TENB; 5 credits; grades A, C, E, Fx, F)

- (a) You will be asked to solve a guided wave problem on the board, explain and discuss your solution with the examiner. If passing, you have the grade E on the exam and may chose if you want to continue with part (b).
- (b) The examiner will ask you several questions, for you to demonstrate conceptual understanding and account for general principles of guided electromagnetic waves. Depending on the level of fulfilment you will keep the grade E or be awarded the grades C or A.

#### 2.1.3 Students with disability

Information under <https://www.kth.se/student/stod/studier/funktionsnedsattning/>

#### 2.1.4 Completion task

The grade Fx permits one attempt on a completion task to reach the grade E.

- For PROB, the completion task is in the feedback on the report.
- For TENB, the completion task is communicated via email.

#### 2.1.5 Course grade

		TENB		
		E	C	A
PROB	E	E	D	B
	C	D	C	A
	A	C	B	A

**Table 1:** The course grade determined from the grades of PROB and TENB.

## 2.2 Optional part: homeworks

During the course offering there will be four homeworks, handled via Canvas according to the schedule therein. Marked with  $\{p_i = 0 - 5\}_{i=1}^4$  points. If  $\sum_{i=1}^4 p_i \geq 12$  you get the grade E on TENB, without doing the (a)-part, and may chose to sign up for the (b)-part only.