# Numerical modeling project - BMEEOTMMS5P

## I. Subject Specification

1. Basic Data

1.1 Title

Numerical modeling project

1.2 Code

BMEEOTMMS5P

1.3 Type

Module with associated contact hours

1.4 Contact hours

| Type | Hours/week / (days) |
|---|---|
| Seminar | 2 |

1.5 Evaluation

Midterm grade

1.6 Credits

5

1.7 Coordinator

| | |
|---|---|
| name | Dr. Sándor Ádány |
| academic rank | Associate professor |
| email | adany.sandor@emk.bme.hu |

1.8 Department

Department of Structural Mechanics

1.9 Website

https://epito.bme.hu/BMEEOTMMS5P
https://fiek2.mywire.org/course/view.php?id=1997

1.10 Language of instruction

hungarian and english

1.11 Curriculum requirements

Recommended elective in the Specialization in Numerical modelling, Strcutural Engineering (MSc) programme

1.12 Prerequisites

1.13 Effective date

5 February 2020

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2. Objectives and learning outcomes

2.1 Objectives

The goal of the subject is that the students solve a civil engineering problem the complexity of which is in accordance with the level of the MSc course and with the credit and time-frame of the subject. The problem should be solved by high level application of some analytical or numerical method (e.g., finite element method). The problem is solved by the individual work of the student, helped by a tutor.

2.2 Learning outcomes

Upon successful completion of this subject, the student:

A. Knowledge

1. has deep knowledge about the theoretical (e.g., mathematical, mechanical) background of the solved problem
2. will learn the options, advantages, disadvantages and application constraints of the selected solution technique

B. Skills

1. is able for the high level application of the method selected for the solution of the problem
2. is able to evaluate the results of the solution and to draw proper conclusions,

C. Attitudes

1. is intent on the precise and error-free problem solving,
2. pursues the precise self-expression in oral communication,
3. aspires to prepare a well-organized high-level documentation in writings, in accordance with the expectation of the engineering practice,

D. Autonomy and Responsibility

1. is intent on solving the problems autonomously.

2.3 Methods

Individual assignment, oral and written communication, application of IT tools and technologies.

2.4 Course outline

| Week | Topics of projectwork consultations |
|---|---|
| 1. | Introduction, explanation of the work to be done |
| 2. | Consultation |
| 3. | 1. partial results |
| 4. | Consultation |
| 5. | 1. progress presentation |
| 6. | Consultation |
| 7. | Half time analysis |
| 8. | Consultation |
| 9. | Consultation |
| 10. | 2. progress presentation |
| 11. | Consultation |
| 12. | Consultation |
| 13. | Evaluation of final results |
| 14. | Presentation of final results |

The above programme is tentative and subject to changes due to calendar variations and other reasons specific to the actual semester. Consult the effective detailed course schedule of the course on the subject website.

2.5 Study materials

Online materials: manual of the selected software(s)

2.6 Other information

It is helpful to own a computer for the continuous progress with the work.

2.7 Consultation

The instructors are available for consultation during their office hours, as advertised on the department website. Special appointments can be requested via e-mail: adany.sandor@epito.bme.hu.

This Subject Datasheet is valid for:

2023/2024 semester I

## II. Subject requirements

Assessment and evaluation of the learning outcomes

3.1 General rules

Evaluation of learning outcomes described in Section 2.2. is based on the submission of a homework, the active participation on the consultations and the presentation of the homework.

3.2 Assessment methods

| Evaluation form | Abbreviation | Assessed learning outcomes |
|---|---|---|
| Homework (continuous partial check) | HW | A.1-A.2; B.1-B.2; C.1-C.3; D.1 |

The dates of deadlines of assignments/homework can be found in the detailed course schedule on the subject's website.

3.3 Evaluation system

| Abbreviation | Score |
|---|---|
| HW | 100% |
| **Sum** | **100%** |

3.4 Requirements and validity of signature

There is no signature from the subject.

3.5 Grading system

Final grade is determined from the Á percentage of the homework according to section 3.3.

| Grade | Points (A) |
|---|---|
| excellent (5) | 80%≤A |
| good (4) | 70%≤A<80% |
| satisfactory (3) | 60%≤A<70% |
| passed (2) | 50%≤A<60% |
| failed (1) | A<50% |

3.6 Retake and repeat

There is no delayed submission oppurtunity for the homework.

3.7 Estimated workload

| Activity | Hours/semester |
|---|---|
| consultation | 14×2=28 |
| preparation of the homework | 14×6=84 |
| presentation of the homework | 2 |
| study of the assigned written sources | 36 |
| **Sum** | **150** |

3.8 Effective date

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