

# COURSE OUTLINE

## Representation Theory of Rings and Groups

**Neptun code:** BMETE91MM04

**Term:** 2018/2019/2

**Classes:** 2/2 lecture/tutorial

**Language:** English

**Topics:** projective and injective modules, Jacobson radical, semisimple modules and rings, graph algebras, categories of modules, irreducible morphisms, Auslander–Reiten graphs, group algebras, Maschke's theorem, complex representations and characters, algebraic integers, Burnside's theorem, permutation characters and induced characters, Frobenius reciprocity, Clifford's theorem, elements of modular representation theory

### Course requirements

Weekly homework problems

Two tests (one make-up test in the end of the term)

### Marking:

- 50% from the homework problems,
- 50% from the average of the two tests

Minimum requirement: reaching a cumulative 40%, and passing grade for at least one of the tests.

Grades: 2 from 40%, 3 from 55%, 4 from 70%, 5 from 85%

**Literature:** Assem – Simson – Skowronski: Elements of the Representation Theory of Associative Algebras, vol. 1, Chapters I – IV

Isaacs: Character Theory

Budapest, February 4, 2019

Lukács Erzsébet