

## 201.1.7031. ALGEBRAIC STRUCTURES. BGU, FALL 2017.

Site of the course: <https://www.math.bgu.ac.il/~kernerdm/teaching.html>

Lectures (D.Kerner, [58], 217): Sun (16:00-18:00, [34], 116), Wed (12:00-14:00, [28], 107)  
Tutorials (M.Porat) Tues. 18:00-19:00.

### Syllabus

- (1) Groups. The factor group and the homomorphism theorems. Sylow's theorems and permutation actions of groups.
- (2) Rings, Integral Domains and Fields. Ideals: maximal and prime. Unique Factorization Domains. Principle Ideal Domains. Euclidean Domains.
- (3) Modules. Structure theorems for finitely generated modules over a PID. Application to finitely generated abelian groups and to the Jordan Canonical Form.

### Literature

- (1) S.Lang, "Algebra", 2002.
- (2) J.J.Rotman, "Advanced Modern Algebra", 2002.
- (3) N.Jacobson, "Basic Algebra".
- (4) I.N.Herstein, "Abstract Algebra".

### Structure of the final grade

There will be about 10 homeworks, they form 5% of the final grade.  
There will be two midterms, each of them 10% of the final grade.  
The final exam is 75% of the final grade.