

COURSE LEARNING OUTCOMES

DEPARTMENT: Mathematics

COURSE #: 34700 COURSE TITLE: Elements of Modern Algebra PRE-REQUISITES: 30800, 34600 PRE/CO-REQUISITES: HOURS/CREDITS: 4 hr., 4 cr. DATE EFFECTIVE: 1/27/2013 COURSE COORDINATOR: Brooke Feigon	CATALOG DESCRIPTION Sets, mapping, rings, isomorphisms, integral domains, properties of integers, fields, rational numbers, complex numbers, polynomials, groups Suggested Text: <i>Elements of Modern Algebra</i> by Gilbert/Gilbert
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COURSE LEARNING OUTCOMES

Please describe below all learning outcomes of the course, and indicate the letter(s) of the corresponding Departmental Learning Outcome(s) (see list at bottom) in the column at right.

After taking this course, the student should be able to

	Contributes to Departmental Learning Outcome(s):
1. give examples of axiomatic systems	d1
2. give examples of equivalence relations such as congruences and verify that they are equivalence relations	d1, d2
3. write proofs of simple statements about groups and rings	f, d2
4. identify hypotheses and conclusions of moderately complex statements about groups or rings	f
5. determine whether an example satisfies a given set of axioms	a, d1, d2
6. derive conclusions about the integers or rational numbers from general theorems about groups, rings, and fields	a, b
7. use axiomatic properties to explain operations on polynomials	a, b

COURSE ASSESSMENT TOOLS

Please describe below all assessment tools that are used in the course.

You may also indicate the percentage that each assessment contributes to the final grade.

1. Term Grade (60%)
2. Final Exam (40%)

DEPARTMENTAL LEARNING OUTCOMES (to be filled out by departmental mentor)

The mathematics department, in its varied courses, aims to teach students to

- a. perform numeric and symbolic mathematical computations, and use geometric representations;
- b. model a physical situation using mathematical terms;
- c. use technology to help organize data and solve problems;
- d. state (d1) and apply (d2) fundamental definitions and theorems;
- e. prove fundamental theorems;
- f. present (generally in writing but, occasionally, orally) a coherent and logical mathematical argument.