**COURSE LEARNING OUTCOMES**

**DEPARTMENT:**

 **Mathematics**

|  |  |
| --- | --- |
| **COURSE #: 34600****COURSE TITLE: Elements of Linear Algebra**CATEGORY: Required for Applied Math; Elective for Pure Math and Secondary Ed.TERM OFFERED: Fall 2016PRE-REQUISITES: Math 21200 or 20300 or departmental permission.PRE/CO-REQUISITES: HOURS/CREDITS: 3 hrs/wk; 3 credits. (After completion of Math 39200 only 2 credits will be given for Math 34600.) DATE EFFECTIVE:1/22/07COURSE COORDINATOR: Vladimir Shpilrain | **CATALOG DESCRIPTION** Vector spaces, basis and dimension, matrices, linear transformations, determinants, solution of systems of linear equations, eigenvalues, and eigenvectors.Suggested Text: *Linear algebra with Applications (Open edition),* by W. Keith Nicholson, Lyryx, 2021 (Revision A). |

**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. solve systems of linear equations; a, c, e2

2. evaluate determinants of square matrices; a, e2

3. compute inverses of square matrices; a, e2

4. demonstrate a knowledge of basic properties of vector spaces, subspaces, and their bases; c, e1, f, g

5. demonstrate a knowledge of the concepts of linear dependence and independence; e1, f, g

6. compute eigenvalues and eigenvectors of square matrices; a, e2

7. demonstrate a knowledge of basic properties of linear transformations c, e1, f, g

**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. two term exams (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 computations
b. construct and apply symbolic and graphical representations of functions
c. model real-life problems mathematically
d use technology appropriately to analyze mathematical problems
e. state (e1) and apply (e2) mathematical definitions and theorems
f. prove fundamental theorems*

*g. construct and present (generally in writing, but, occasionally, orally) a rigorous mathematical argument.*