

LINC 53: INTEGRATING TECHNOLOGY INTO MATHEMATICS

Foothill College Course Outline of Record

Heading	Value
Units:	1
Hours:	1 lecture per week (12 total per quarter)
Advisory:	Basic computer skills and knowledge of Macintosh or Windows operating systems; familiarity using Web browsers, email, bookmarking, searching and downloading; not open to students with credit in LINC 263.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- Identify and select appropriate technologies for use in the mathematics curriculum
- Identify academic content standards for mathematics
- Design a technology rich mathematics lesson, unit or project for classroom use
- A successful student will be able to discuss and explain the uses and applications of information and computer technology (ICT) in K-12 mathematics education.

Description

Overview course for mathematics educators to promote and encourage the use of technology in mathematics instruction at any level to support and enhance mathematics teaching and learning and to increase the use of technology for visualization and multiple representations of math concepts. Other topics include the assessment of technology enhanced math projects, California Mathematics Content Standards, state-approved mathematics textbooks, ISTE Technology Standards, California Technology Standards, and the emerging Common Core Standards.

Course Objectives

The student will be able to:

- Identify academic content standards for mathematics
- Identify and select appropriate technologies for use in the mathematics curriculum
- Design a technology rich mathematics lesson, unit or project for classroom use
- Design assessment tools for lessons, assignments or projects
- Integrate a standards based student-centered lesson, assignment or project that uses technology as a logical learning tool into the classroom

Course Content

- Identify online academic contents standards
 - Information on Standards Based Instruction
 - Information on the CA and National Mathematics Content Standards
 - Information on Technology Standards
 - Lesson, Unit Project Ideas and Samples
- Identify technologies for use in a Mathematics Curriculum
 - Overview of the technology tools
 - Select appropriate tools for content or assessment
- Designing a Technology Rich, Standards Based Lesson, Unit Project
 - Models of Project Based Learning (Seven elements and 6 'A's of Project Based Learning)
 - Integrating Technology into your Mathematics Curriculum
 - Multiple Intelligences
 - Higher Order Thinking skills
- Design assessment tools for lessons, assignments or projects in mathematics
 - Mathematics Curriculum content
 - Non-technology assessment methods
 - Technology enhanced assessment methods
- Implementation
 - Plan for integration
 - Integrate the designed lesson into the curriculum
 - Evaluate the outcomes of the lesson
 - Revise the lesson

Lab Content

Not applicable.

Special Facilities and/or Equipment

- When offered on/off campus: Lecture room equipped with LCD projector, whiteboard, and a demonstration computer connected online. Computer laboratories equipped with online PCs and/or Macintosh computers, network server access, and printers.
- When taught via the Internet: Students must have current email accounts and/or ongoing access to computers with email software, web browsing capability, and access to the World Wide Web.

Method(s) of Evaluation

The student will demonstrate proficiency by:

- Developing an integrated student-centered, technology enhanced mathematics lesson plan or activity.
- Presenting the project to peers for feedback.
- Making constructive contributions to class discussions.

Method(s) of Instruction

During periods of instruction the student will be:

- Listening actively to lecture presentations delivered in student-centered learning style by taking notes, following demonstrations, or completing an activity
- Participating in facilitated discussions of live presentations, readings or video presentations
- Presenting in small group and whole class situations

Representative Text(s) and Other Materials

Van De Walle, John, Karen Karp, and Jennifer M. Bay-Williams. Elementary and Middle School Mathematics: Teaching Developmentally. 9th ed. Pearson, 2015.

Teacher assigned notes and materials.

When course is taught online: Additional information, notes, handouts, syllabus, assignments, tests, and other relevant course material will be delivered by email and on the World Wide Web, and discussion may be handled with internet communication tools.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Each class session requires the student to read and analyze selected websites or student projects related to that session's topics. Class discussion is encouraged.

B. Each session's topic requires a written response to a prompt that is turned in for instructor or peer review. Each prompt is designed to be a draft of a section of the student's completed project. Instructor feedback should be reflected in the final product.

C. When taught online these methods may take the form of video, audio, animation and webpage presentations. Assignments will be submitted online as well.

Discipline(s)

Instructional Design/Technology