

**Syllabus**

**SCHOOL OF EDUCATION AND LEADERSHIP**  
**EML 475: Mathematics: Discrete Mathematics**

3 Credits  
Winter 2015

*Access to the Internet is required.*  
*All written assignments must be in Microsoft-Word-compatible formats.*  
*See the library's APA Style Guide tutorial for a list of resources that can help you use APA style.*

## **FACULTY**

Faculty Name: FACULTY NAME

Contact Information: CONTACT INFORMATION

[INSTRUCTOR MAY INSERT PERSONAL MESSAGE IF DESIRED]

## **COURSE DESCRIPTION**

Math endorsement students develop conceptual understanding of a procedural facility with fundamental ideas of discrete mathematics in the formulation and solution of problems. Topics include mathematical proofs (direct, contradiction, contrapositive, induction); graph theory, recurrence relations, finite difference approaches, combinatorics); and application of discrete mathematics to formulate and solve real world problems. Upon successful completion of this course, students have content knowledge to help secondary students become college and career ready in discrete mathematics.

## **COURSE RESOURCES**

Required and recommended resources to complete coursework and assignments are available from the [Course Document Lookup](#).

## **CITYU LEARNING GOALS**

This course supports the following City University learning goals:

## **COURSE OUTCOMES**

In this course, learners:

- Develop conceptual understanding of and procedural facility with discrete mathematics.
- Apply standards of mathematical practice in discrete mathematics.

## **CORE CONCEPTS, KNOWLEDGE, AND SKILLS**

- Key shifts in Mathematics
- Standards of Mathematical Practice
- Support diverse learners through equity pedagogy
- Use models to link applications of discrete mathematics to everyday life, work, and decision-making.
- Work with compound statements and qualified statements: Truth tables, valid arguments, logic, multiple quantifiers
- Work with counting and probability: Possibility trees, multiplication rule
- Work with functions: Defined on sets; acting on sets; one-to-one, onto, and inverse
- Work with methods of proofs: Direct, counterexamples, indirect arguments
- Work with real-valued functions: Power functions; floor and ceiling functions; three kinds of notation
- Work with recursive sequences and explicit formulas: Explicit formulas, Fibonacci sequence

- Work with sequences and mathematical induction
- Work with set theory: Properties of sets, Venn diagrams, permutations and combinations

## OVERVIEW OF COURSE GRADING

The grades earned for the course will be derived using City University of Seattle’s decimal grading system, based on the following:

<i>Overview of Required Assignments</i>	<i>% of Final Grade</i>
Discussion Board Participation	30%
Math Resources Toolbox	40%
Examination of Math Content Knowledge and Skills	30%
<b>TOTAL</b>	<b>100%</b>

## SPECIFICS OF COURSE ASSIGNMENTS

The instructor will provide grading rubrics that will provide more detail as to how this assignment will be graded.

### Discussion Board Participation

Participation in learning activities and making quality contributions in academic discourse add value and support peers in online analytical and reflective discussions and enable students to maximize learning beyond their own direct experiences. During the online week, students respond to the instructor's prompts that involve completing an independent learning activity, posting a response to the instructor's prompt, and engaging in discussion with classmates and instructor. Online discussions may occur asynchronously in Discussion Board and synchronously in a web conference. The online week runs Monday through Sunday. As minimum expectations, each student completes the learning activity and posts a response to the prompt by Wednesday, replies to two or more classmates by Friday, and replies to all who have replied to the student’s original post by Sunday.

<i>Components</i>	<i>% of Grade</i>
Presence in the Discussion	30%
Content Analysis and Reflection	40%
Writing Style and Mechanics	30%
<b>TOTAL</b>	<b>100%</b>

### Math Resources Toolbox

Math endorsement students contribute two (2) or more unduplicated, annotated math resources to an online, common Math Resources Toolbox and evaluate at least five (5) other resources in the Toolbox. Each contribution annotates the resource title, reference in APA form, web address, math content topic or range of topics, grade range coverage, cost, description of the resource, features that make the resource useful, features that limit the resource’s usefulness, general evaluation of the resource’s quality relative to similar resources, districts or schools known to use the resource, and reflection on how the student might use or has used the resource in his or her math teaching. Each resource evaluation covers relevant topics required for an original submission but adds the reviewer’s professional perspective and depth to previous

evaluation(s). By program end, students can access a rich, growing collection of math resources to support quality teaching and learning in mathematics.

<i>Components</i>	<i>% of Grade</i>
Math Resource Contributions	50%
Math Resource Evaluations	50%
<b>TOTAL</b>	<b>100%</b>

### Examination of Math Content Knowledge and Skills

Candidates demonstrate conceptual understanding of and procedural facility with math topics in the scope of this course. Instructors may structure exam(s) as a series of topically segmented exams and/or as one final exam. To meet Standard, students score 76.25% or higher.

<i>Components</i>	<i>% of Grade</i>
Standards for Mathematical Practice	100%
<b>TOTAL</b>	<b>100%</b>

## **COURSE POLICIES**

### **Late Assignments**

LATE ASSIGNMENT

### **Participation**

PARTICIPATION

### **Professional Writing**

Assignments require error-free writing that uses standard English conventions and logical flow of organization to address topics clearly, completely, and concisely. CityU requires the use of APA style.

## **UNIVERSITY POLICIES**

You are responsible for understanding and adhering to all of City University of Seattle's academic policies. The most current versions of these policies can be found in the [University Catalog](#) that is linked from the CityU Web site.

### **Title IX Statement**

City University of Seattle and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University. If you speak with a faculty member about an incident of misconduct, that faculty member must notify CityU's Title IX coordinator and share the basic fact of your experience. The Title IX coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

To view CityU'S sexual misconduct policy and for resources, please visit the [Campus Safety and Title IX Page](#) in the my.cityu.edu portal.

### **Scholastic Honesty**

Scholastic honesty in students requires the pursuit of scholarly activity that is free from fraud, deception and unauthorized collaboration with other individuals. You are responsible for understanding CityU's policy on scholastic honesty and adhering to its standards in meeting all course requirements. A complete copy of this policy can be found in the [University Catalog](#) in the section titled *Scholastic Honesty* under *Student Rights & Responsibilities*.

### **Attendance**

Students taking courses in any format at the University are expected to be diligent in their studies and to attend class regularly.

Regular class attendance is important in achieving learning outcomes in the course and may be a valid consideration in determining the final grade. For classes where a physical presence is required, a student has attended if s/he is present at any time during the class session. For online classes, a student has attended if s/he has posted or submitted an assignment. A complete copy of this policy can be found in the [University Catalog](#) in the section titled *Attendance Policy for Mixed Mode, Online and Correspondence Courses*.

## **SUPPORT SERVICES**

### **Disability Services Accommodations Statement**

Students with a documented disability who wish to request academic accommodations are encouraged to contact Disability Support Services to discuss accommodation requests and eligibility requirements. Please contact Disability Support Services at [disability@cityu.edu](mailto:disability@cityu.edu) or 206.239.4752 or visit the [Disability Support Services](#) page in the my.cityu.edu portal. Confidentiality will be observed in all inquiries. Once approved, information about academic accommodations will be shared with course instructors.

### **Library Services**

CityU librarians are available to help you find the resources and information you need to succeed in this course. Contact a CityU librarian through the [Ask a Librarian](#) service, or access [library resources and services online](#), 24 hours a day, seven days a week.

### **Smarthinking**

As a CityU student, you have access to 10 free hours of online tutoring offered through Smarthinking, including writing support, from certified tutors 24 hours a day, seven days a week. Contact CityU's Student Support Center at [help@cityu.edu](mailto:help@cityu.edu) to request your user name and password.