



Syllabus

SCHOOL OF EDUCATION AND LEADERSHIP **ETC 538: Science, Technology, Engineering and Math Concepts**

3 Credits
Effective: Fall 2017/2018

*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

This course guides teacher certification candidates to demonstrate competency in inquiry-based approach to teaching STEM that emphasizes problem-solving and hands-on learning. Participants apply the cycle of inquiry to the essential components of Science, Technology, Engineering and Math: concepts, knowledge, understanding, skills, reasoning, product development and dispositions. The course provides opportunities for direct classroom application and transformative student learning.

COURSE RESOURCES

Required and recommended resources to complete coursework and assignments are found on the course [Reading List](#). The reading list can be found under Course Information in Blackboard as well as from the library homepage.

Note: Required resources that must be purchased by the student are tagged “Purchase from a vendor of your choosing.” Required resources with a direct link, “Available through CityU Library”, are available at no cost to students.

Students in Canada will see required resources they need to purchase tagged “Purchase from the Canadian Bookstore.” Students outside the U.S. and Canada should contact their advisor or textbook coordinator for additional information.

CITYU LEARNING GOALS

This course supports the following City University learning goals:

- Professional competency and professional identity
- Critical thinking and information literacy

COURSE OUTCOMES

In this course, learners:

- Analyze methodology and compare with Common Core, T-Pep, and STEM/NGSS Standards.
- Demonstrate inquiry-based and problem solving instruction using STEM content.
- Design STEM projects and content.
- Evaluate and reflect on STEM methodology and projects.
- Identify the four areas of STEM and its role in education.

CORE CONCEPTS, KNOWLEDGE, AND SKILLS

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>
STEM Integrated Project	50%
STEM Unit Plan	30%
Instructor Determined Assignments, including participation	20%
TOTAL	100%

SPECIFICS OF COURSE ASSIGNMENTS

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

STEM Integrated Project

Small groups of candidates engage in a project-based inquiry related to a current, real world problem in which group members express interest. The task is to name and solve a problem using relevant STEM strategies and content. The instructor approves project topics in advance. This project will provide candidates an opportunity to practice and implement STEM strategies to solve a real world problem.

<i>Components</i>	<i>% of Grade</i>
Writing Mechanics	15%
Research-based Support	15%
Implementation (Assess and evaluate student)	20%
Understanding (Assess and evaluate student)	20%
Analysis & Reflection (Assess and evaluate student)	15%
Intention (Assess and evaluate student)	15%
TOTAL	100%

STEM Unit Plan

The candidate uses the Teacher Certification Program (TCP) instructional plan to create a unit that incorporates STEM strategies and content. The candidate poses a real world problem for students and creates a unit that will allow students to employ inquiry-based learning and STEM content. The unit should build content knowledge and allow students the freedom to explore and problem-solve. This provides candidates practice and feedback in STEM unit design.

<i>Components</i>	<i>% of Grade</i>
Establishing Learning Targets	20%
Writing Mechanics	10%
Research-based Support	15%
Instructional Materials	10%
Sequencing Learning Experience	20%
Valuing Assessment	15%
Involving Families	10%
TOTAL	100%

Instructor Determined Assignments, including participation

Class attendance and participation are integral components of this course. Class participation expands the participant’s knowledge and ability to implement strategies learned in the course. As a prospective teacher, candidates are expected to demonstrate a commitment to professionalism by attending classes, actively participating in class and on Blackboard, and creating respectful interactions with colleagues. Candidates are also called on periodically to take leadership roles within the class, or as a part of a small group. Teaching requires constant hands-on leadership skills and this course is an opportunity for everyone to practice and develop leadership and participant skills.

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<i>Components</i>	<i>% of Grade</i>
Attendance	20%
Preparation	20%
Contribution	20%
Communication	20%
Essential Dispositions	20%
TOTAL	100%

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.

Antidiscrimination

City University of Seattle and its staff and faculty are committed to supporting our students. We value equity, diversity, and inclusion as a way of life as well as the educational opportunities it provides. City U will not tolerate any form of discrimination based on race, color, ethnicity, sexual orientation, gender identification, socioeconomic status, or religious values. If you have experienced any discrimination based on any of the above, we encourage you to report this to the University. Please report this to your instructor. If you do not feel safe reporting this to your instructor, please report to Dr. Scott Carnz, Provost or to the Vice President of Student Affairs, Melissa Mecham.

Non-Discrimination & Prohibition of Sexual Misconduct

City University of Seattle adheres to all federal, state, and local civil rights laws prohibiting discrimination in employment and education. The University is committed to ensuring that the education environment is bounded by standards of mutual respect and safety and is free from discriminatory practices.

In the U.S., the University is required by Title IX of the Education Amendments of 1972 to ensure that all of its education programs and activities do not discriminate on the basis of sex/gender. Sex include sex, sex stereotypes, gender identity, gender expression, sexual orientation, and pregnancy or parenting status. Sexual harassment, sexual assault, dating and domestic violence, and stalking are forms of sex discrimination, which are prohibited under Title IX and by City University of Seattle policy. City University of Seattle also prohibits retaliation against any person opposing discrimination or participating in any discrimination investigation or complaint process internal or external to the institution. Questions regarding Title IX, including its application and/or concerns about noncompliance, should be directed to the Title IX Coordinator. For a complete copy of the policy or for more information, visit <https://my.cityu.edu/titleix> or contact the Title IX Coordinator.

In Canada, in compliance with the British Columbia Human Rights Code, the Alberta Human Rights Act, WorksafeBC, and the Workers' Compensation Board of Alberta, the University believes that its environment should at all times be supportive and respectful of the dignity and self-esteem of individuals. Discrimination, harassment and bullying conduct, whether through person to person behaviour or via electronic communications such as email or social media is not acceptable and will not be tolerated. As an educational institution, it is our responsibility to cultivate an environment of excellence, equity, mutual respect and to recognize the value and potential of every individual. The University will take all necessary steps to meet or exceed the requirements of the law to prevent discrimination, harassment and bullying. The Respectful

Workplace Policy for the prevention of discrimination, harassment and bullying policy and procedure can be found at <https://www.cityu.edu/discover-cityu/about-cityu/> under the Policies section or at <https://www.cityuniversity.ca/about/>.

Religious Accommodations

City University of Seattle has a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The University's policy, including more information about how to request an accommodation, is available in the University Catalog and on the my.cityu.edu student portal. Accommodations must be requested by the 20% mark of this course (e.g. day 14 of a ten-week course, day 7 of a 5-week course) using the Religious Accommodations Request Form found on the student dashboard in the my.cityu.edu student portal.

Academic Integrity

Academic integrity in students requires the pursuit of scholarly activity that is free from fraud, deception and unauthorized collaboration with other individuals. Students are responsible for understanding CityU's policy on academic integrity 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 [Academic Integrity Policy](#) 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 they are present at any time during the class session. For online classes, a student has attended if they have posted or submitted an assignment. A complete copy of this policy can be found in the [University Catalog](#) in the section titled Attendance under Student Rights & Responsibilities.

Final Assignments Due Date

Final assignments for each class at CityU must be due on or before the final date of the course as indicated in the university's course information system. Due dates that extend beyond the final date of the course may negatively impact tuition funding for students.

SUPPORT SERVICES

Disability Services Accommodations Statement

Students with 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 or 206.2369.4752 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 your course instructors.

Library Services

CityU librarians are available to help students find the resources and information they 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 Tutoring

CityU students have 24/7 access to free online tutoring offered through Smarthinking, including writing support, from certified tutors. Contact CityU's Student Support Center at mycityusupport@cityu.edu to request a username and password.