



**EDUC 422: TECHNOLOGY TOOLS FOR TEACHING & LEARNING**  
**Section 21188**  
**Spring 2018**

**Class Meetings:**

Fridays, 9:30AM – 12:20PM  
University Hall 273

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**Office Hours:** By Appointment

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**COURSE DESCRIPTION**

This course is designed to help students (teacher candidates) who are seeking to enter the credential program at CSUSM to develop the skills, knowledge, and attitudes necessary to effectively integrate Science, Technology, Engineering, and Math (STEM) into classroom teaching and learning. It includes a field experience where students practice, design, and implement STEM activities with children (grades 4 through 8) in an afterschool program. This course is one of the three prerequisite courses for entering the teacher credential program. The other two prerequisite courses include EDUC350 Foundations of Teaching as a Profession and EDUC364 The Role of Cultural Diversity in Schooling.

**Prerequisite:**

- (1) The prerequisite for this course is basic computer knowledge and skills such as turning a computer on and off; opening, saving, and deleting a file; creating and deleting a folder; using e-mail and web browsers (i.e. Internet Explorer, Safari, Firefox, Google Chrome). Students may demonstrate their basic knowledge and skills by completing the campus-wide computer competency requirement (CCR) or a computer course within the last 12 months with a grade B or above.
- (2) Students must complete certificate of clearance/finger printing and Tuberculosis (TB) test and submit to the instructor before starting their practicum as part of this course. The TB test can be obtained at the Student Health and Counseling Services, your own personal physician's office, or a local clinic. Please check the course Moodle on Cougar Courses for more information on certificate of clearance/finger printing.

**COURSE OBJECTIVES**

The course objectives are:

- (a) Contextualize STEM teaching and learning in authentic contexts.
- (b) Develop and disseminate STEM learning experiences.
- (c) Implement, assess and reflect on STEM learning experiences.
- (d) Engage in instructional conversations and collaborations that enhance STEM teaching and learning across content areas.
- (e) Increase confidence and self-efficacy in STEM teaching and learning.
- (f) Increase understanding of design thinking.

**COURSE LEARNING OUTCOMES**

In the end of this course, students will meet the International Society for Technology in Education (ISTE) Educator Standards. These standards are:

- 1. Learner:** Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning.
- 2. Leader:** Educators seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning.
- 3. Citizen:** Educators inspire students to positively contribute to and responsibly participate in the digital world.
- 4. Collaborator:** Educators dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems.
- 5. Designer:** Educators design authentic, learner-driven activities and environments that recognize and accommodate learner variability.
- 6. Facilitator:** Educators facilitate learning with technology to support student achievement of the 2016 ISTE Standards for Students (see <https://www.iste.org/standards/standards/for-students>).
- 7. Analyst:** Educators understand and use data to drive their instruction and support students in achieving their learning goals.

## COURSE MATERIALS & RESOURCES

- 1. Google Drive:** This is an online file storage service provided by Google. It allows users to create, share, and collaboratively edit files stored in the cloud. Students should have access to Google Drive through their CSUSM e-mail. If you do not have access to Google Drive, you can create an account at [drive.google.com](https://drive.google.com). Directions on how to create an account are available at: <https://support.google.com/drive/answer/2424384?hl=en>
- 2. Additional File Storage:** While you can create, upload, and store files using Google Drive, you may need to use an additional secondary cloud file storage service such as Dropbox (You can create an account at [www.dropbox.com](http://www.dropbox.com)) and/or purchase a USB stick (8GB or larger) to store large files.
- 3. Cougar Courses:** Course materials, assignment instructions, and grades will be available on Cougar Courses site. Available at: <https://cc.csusm.edu/>. Be sure to set your preferred email in your profile settings of Cougar Courses so that you receive important announcements and communications. It is your responsibility to check the course site regularly and bring any issues immediately to the instructor's attention.
- 4. Campus Resources:** In addition to attending class meetings, students may need to use campus resources for some assignments. It is the student's responsibility to make arrangements to have the technology resources available in order to complete scheduled assignments and due dates. All students must plan times they can work in labs on campus. Students are required to check campus resources and availability of labs. Mac computers are available in ACD 202, ACD 211, UH 271, and SCI2 306 in addition to other locations such as the library 2<sup>nd</sup> floor.
- 5. Backing Up Work:** Many technology platforms you will be using in this course are online and require a username and password. However, for some assignments you will need to take a screenshot or copy/paste your work into a word file, therefore it is important that you backup your work.

6. **Username & Password:** You will be using a variety of online platforms. Avoid creating a new username and password for each platform, instead, use the same username and password for all platforms for you to easily remember.

## UNIVERSITY AND SCHOOL OF EDUCATION POLICIES

**Attendance Policy:** Due to the dynamic and interactive nature of courses in the School of Education, all candidates are expected to attend all classes and participate actively. At a minimum, teacher candidates must attend more than 80% of class time, or s/he may not receive a passing grade for the course at the discretion of the instructor. Individual instructors may adopt more stringent attendance requirements. Should the candidate have extenuating circumstances, s/he should contact the instructor as soon as possible.

**Professional Dispositions:** The California State University San Marcos School of Education fosters the development of the following professional dispositions among teacher candidates:

- *Social Justice and Equity:* Candidates appreciate the languages, communities, and experiences learners bring to the classroom. Candidates advocate for and support marginalized communities and individuals.
- *Collaboration:* Candidates learn and practice the skills of collaboration in their coursework and use them in their professional interactions with students, colleagues, parents, caregivers and those in the wider community.
- *Critical Thinking:* Candidates analyze various professional contexts, resulting in more informed decision-making about professional practice.
- *Professional Ethics:* Candidates learn to make and act on well-reasoned, principled judgments.
- *Reflective Teaching and Learning:* Candidates critically review their professional practice and the impact it has on student success.
- *Life-Long Learning:* Candidates are committed to actively seeking new knowledge, skills and experiences throughout their career.

**Academic Honesty Policy:** Students are expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All written work and oral presentation assignments must be original work. All ideas/materials that are borrowed from other sources must have appropriate references to the original sources including resources found online. Any quoted material should give credit to the source and be punctuated with quotation marks.

Students are responsible for honest completion of their work including examinations. There will be no tolerance for infractions. If you believe there has been an infraction by someone in the class, please bring it to the instructor's attention. The instructor reserves the right to discipline any student for academic dishonesty in accordance with the general rules and regulations of the university. Disciplinary action may include the lowering of grades and/or the assignment of a failing grade for an exam, assignment, or the class as a whole.

Incidents of Academic Dishonesty will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the University.

It is expected that each candidate will do his/her own work, and contribute equally to group projects and processes. Plagiarism or cheating is unacceptable under any circumstances. If you are in doubt about whether your work is paraphrased or plagiarized see the Plagiarism Prevention for Students website <http://library.csusm.edu/plagiarism/index.html>. If there are questions about academic honesty, please consult the University catalog.

**Writing Requirement:** The CSUSM writing requirement of 2500 words is met through the completion of course assignments. Therefore, all assignments will be looked at for content, organization, grammar, spelling, and format. If needed, it is suggested that you make an appointment with the Writing Center ([http://www.csusm.edu/writing\\_center/](http://www.csusm.edu/writing_center/)) to seek help with writing skills before submitting your written assignments.

Because it is important for teachers to be able to effectively communicate their ideas to students, parents, colleagues, and administrators, writing that is original, clear and error-free is a priority for the School of Education.

**Students with Disabilities Requiring Reasonable Accommodations:** Students with disabilities who require reasonable accommodations must seek approval for services by providing appropriate and recent documentation to the Office of Disability Support Services (DSS). This office is in Craven Hall 4300, contact by phone at (760) 750-4905, or TTY (760) 750-4909. Students authorized by DSS to receive reasonable accommodations should meet with their instructor during office hours. Alternatively, in order to ensure confidentiality, in a more private setting.

## COURSE ACTIVITIES

### IN CLASS MEETINGS

The course meets on Fridays between 9:30AM-12:20PM. Students are expected to attend each weekly session prepared to actively participate in a workshop style class session. During part of the class session, students will learn and practice STEM activities and discuss key concepts related to design thinking and teaching STEM. The course is structured such that students will practice in class what they are expected to do with children at their practicum sites.

### FIELD EXPERIENCE

As part of the course, students will implement the STEM activities they learned in class with children (grades 4 through 8) at a school site. The field experience will take place in the evenings on Mondays, Wednesdays, or Thursdays in Oceanside depending on which practicum site you are assigned. Students will work in groups of four to five throughout the semester and will be assigned to one practicum site. Each after school session, students will take a different role within their groups. These roles include: lead facilitator, support facilitator, observer, and interviewer. Students must be prepared to budget for travel expenses. Carpooling is strongly encouraged. The field experience hours in this class will count towards the 45 hours of supervised field work assignment requirement in EDUC350 Foundations of Teaching as a Profession (one of the three prerequisite courses students must take to enter the teacher credential program). You will accumulate at least 10.5 hours of field experience in this class.

## COURSE EXPECTATIONS

**Professional Demeanor:** It is expected that students will conduct themselves as professional adults who show respect to others, bring a positive attitude, and demonstrate productive engagement with people, process, and tasks to be completed. Professional demeanor includes, but not limited to, meeting the following expectations:

1. Arriving to all class meetings **on time**. Emailing the instructor when you are unable to attend class meetings or when you will be late. If you come late to class more than twice in the semester, you will be considered absent. Consistently being late to class will not be tolerated. You must arrive 15 minutes before to the practicum site. You cannot be late to the practicum site.
2. Submitting required assignments **on time**. When you are unable to complete an assignment and need more time, e-mail the instructor and explain the reasons for requesting an extension, and provide a projected timeline for successful completion of the assignment.
3. Attending ALL seven after school sessions at the practicum site. Attending ALL class meetings that focus on practicing the after school activities.
4. Approaching problems with a disposition to find solutions rather than feeling helplessness or hopelessness when facing a challenge or difficulty. This applies to the learning and teaching of different technologies and other class and field work related issues.
5. Working respectfully and productively with peers, the instructor, children, and practicum site staff at all times.
6. Open and clear communication with peers and the instructor at all times.

7. Contributing to and being part of a supportive and collaborative teaching and learning environment. This includes helping classmates with technical, content, managerial, and pedagogical issues, interacting with your peers and children, connecting and working collaboratively with your teammates.

**Electronic Communication:** My goal is to respond to your e-mails as soon as possible. However, I have other job responsibilities and family obligations. While it is my intention to respond to all received e-mails in a timely manner, it might take up to 24 hours to respond to your e-mail.

**Online Etiquette:** Please keep in mind that electronic communication is a very specific form of communication, with its own nuances and etiquette. For instance, electronic messages sent with no title or greetings, in all upper case (or lower case) letters, major typos, or slang, often communicate more than the sender originally intended. With that said, please be mindful of all e-mail and online discussion messages you send to your colleagues, to faculty members in the School of Education, or to persons within the greater educational community. All electronic messages should be crafted with professionalism and care. Things to consider:

- Would I say in person what this electronic message specifically says?
- How could this message be misconstrued?
- Does this message represent my highest self?
- Am I sending this electronic message to avoid a face-to-face conversation?

In addition, if there is ever a concern with an electronic message sent to you, please talk with the author in person to correct any confusion. Be aware that messages sent within an online context may be open to misinterpretation. When concerned, meanings should be verified to clarify sender's intent.

## COURSE ASSIGNMENTS

**CITI Training:** As part of your field experience, you will take on the role of a teacher-researcher, collecting data (information) about children's STEM learning through photos, field notes, and interviews. You will complete the CITI (Collective Institutional Training Initiative (CITI) and receive a certificate upon completing the appropriate modules and submit the certificate to the instructor. The modules will provide information about procedures and guidelines that must be followed when doing research in educational settings with children.

**Field Notes:** At the end of each afterschool session with children, students will submit field notes that document what happened during the session and their reflections about the session. Each field note entry will be at least 1000 words and will include photos from the site. The photos must be unidentifiable, meaning you can only take photos of children at an angle where children's faces cannot be recognized (e.g. behind their head). Further, in your field notes you must only use children's first name and the first letter of their last name.

**Creating a Design Challenge:** Students will work in groups to create a design challenge that integrates one of the technology tools they learned in class, and implement the design challenge with children in the afterschool program.

**Creating an Instructional Video:** Students will work in groups to create an instructional video of their design challenge (at least 4 to 5 minutes long). Students will create storyboard, use digital camera, edit video files, and upload their video and publically share it on YouTube or Vimeo.

**STEM Teaching and Learning Reflection:** You will write a reflection paper based on a topic related to STEM teaching and learning drawing on your field notes and research articles (1 to 3) you find on the topic. The goal of the reflection paper is for you to reflect on your own learning, your observations of how children learn at your practicum site, and connecting these experiences to what we know from research conducted by others in the field of education. The paper should be 6 to 7 double space pages and 12-point font and normal 1 inch margins.

**All assignments are due by 23:55 pm on the due date. More information on each assignment can be found on Cougar Course Site.**

## GRADING

It is expected that you will complete your practicum, submit your assignments on time, and meet course expectations. Please discuss individual issues with the instructor promptly if extraordinary circumstances (e.g.

being sick) prohibit you from turning in assignments on time, going to the practicum sites, or participate in course activities. You must provide a doctor's note if you are sick. Points will be deducted if assignments are submitted late (10% penalty per day late). No credit will be awarded if the assignment is 1 week late. Field notes must be turned in within 48 hours of the completion of an afterschool session. No credit will be awarded if field notes are submitted after the 48 hours limit. Students who wish to revise an assignment (except the CITI and the field notes assignments) must negotiate the requirements of the revision with the instructor.

94 – 100 A	90 – 93 A-
87 – 89 B+	84 – 86 B
80 – 83 B-	77 – 79 C+
74 – 76 C	70 – 73 C-
60 – 69 D	Below 60 F

Failure to complete this course with a grade of C+ or better will prohibit a teacher candidate from entering a teaching credential program. You are responsible to track your grades and progress in the course by logging in Cougar Course. Attendance will be taken each class. 10 points will be deducted for each class you miss. You cannot miss any field experience sessions at the practicum site. Fulfilling at least 10.5 hours of field experience is a requirement to pass this course.

Assignments	Points
<b>CITI Training</b>	<b>10</b>
<b>Field Notes</b> (10 points x 7)	<b>70</b>
<b>Creating a Design Challenge</b>	<b>30</b>
<b>Instructional Video</b>	<b>30</b>
<b>STEM Teaching and Learning Reflection</b>	<b>30</b>
<b>Total:</b>	<b>175</b>

## COURSE SCHEDULE

Please note that modifications may occur at the discretion of the instructor and based on coordination with the practicum sites. Any changes to assignments and activity schedule will be announced in class OR students will be notified via e-mail. To successfully complete this course, ***all assignments must be completed*** at an acceptable level noted on assignment directions. **All assignments are due by 23:55 pm on the due date.**

Week	Date	Topics	Due Dates
1	Jan. 26	Introductions Course Overview	
2	Feb. 2	Introduction to Design Thinking	
3	Feb. 9	Facilitating STEM after school activities	
4	Feb. 16	Review of G Suite Training for Taking Field Notes Writing STEM Reflection Paper	<b>CITI Training Assignment:</b> <u>Due Thursday, February 15</u>
5	Feb. 23	Learn & Practice Design Challenge 1	
6	Feb. 26- March 1	<b>Field Experience:</b> Implement Design Challenge 1 at the school site	<b>Field Notes Assignment:</b> Field Note Entry #1 <u>Due within 48 hours of site visit</u>
	March 2	Learn & Practice Design Challenge 2	

7	March 5-8	<b>Field Experience:</b> Implement Design Challenge 2 at the school site	<b>Field Notes Assignment:</b> Field Note Entry #2 <u>Due within 48 hours of site visit</u>  <b>STEM T&amp;L Reflection Assignment:</b> Identify a Topic <u>Due Thursday, March 8</u>
	March 9	Learn & Practice Design Challenge 3	
8	March 12-15	<b>Field Experience:</b> Implement Design Challenge 3 at the school site	<b>Field Notes Assignment:</b> Field Note Entry #3 <u>Due within 48 hours of site visit</u>
	March 16	Learn & Practice Design Challenge 4 & 5	
9	March 19-22	<b>CSUSM Spring Break:</b> No Field Experience	
	March 23	<b>CSUSM Spring Break:</b> No Class Meeting	
10	March 26-29	<b>Field Experience:</b> Implement Design Challenge 4 at the school site	<b>Field Notes Assignment:</b> Field Note Entry #4 <u>Due within 48 hours of site visit</u>  <b>STEM T&amp;L Reflection Assignment:</b> Find an Article <u>Due Thursday, March 29</u>
	March 30	<b>CSUSM Cesar Chavez Day:</b> No Class Meeting	
11	April 2-5	<b>Field Experience:</b> Implement Design Challenge 5 at the school site	<b>Field Notes Assignment:</b> Field Note Entry #5 <u>Due within 48 hours of site visit</u>
	April 6	Create Design Challenge 6	
12	April 9-12	<b>Oceanside Spring Break:</b> No Field Experience	<b>Design Challenge Assignment:</b> <u>Due Thursday, April 12</u>
	April 13	Finish Design Challenge 6	
13	April 16-19	<b>Field Experience:</b> Implement Design Challenge 6 at the school site	<b>Field Notes Assignment:</b> Field Note Entry #6 <u>Due within 48 hours of site visit</u>
	April 20	Learn & Practice Design Challenge 7	
14	April 23-26	<b>Field Experience:</b> Implement Design Challenge 7 at the school site	<b>Field Notes Assignment:</b> Field Note Entry #7 <u>Due within 48 hours of site visit</u>  <b>STEM T&amp;L Reflection Assignment:</b> Draft Submission <u>Due Thursday, April 26</u>
	April 27	Preparing storyboarding for the instructional video	
15	May 4	Shooting & Editing the Instructional Video	<b>Instructional Video Assignment:</b> Storyboarding <u>Due Thursday, May 3</u>
16	May 11	Editing & Publishing the Instructional Video	<b>Instructional Video Assignment:</b> Final Submission <u>Due Friday, May 18</u>

			<b>STEM T&amp;L Reflection Assignment:</b> Final Submission <u>Due Monday, May 22</u>
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