**Methods and Materials in Secondary Teaching**

Only students who are admitted to the single subject credential program are allowed to enroll in this class

**INTRODUCTION TO COURSE AND INSTRUCTOR**

|  |  |
| --- | --- |
| **Fall 2022** | **Mathematics California State University, Fresno** |
| **Methods and Materials in Secondary Teaching** | **Dr. Yaomingxin Lu** |
| **3 Units** | **PB 347** |
| **Class meeting time: W 5:30-8:20PM** | **yaomingxinlu@csufresno.edu** |
| **Science II 207** | **559-278-4029** |
| **Website: Google Drive** | **Office Hours: W 3:00-5:30PM or by appointment** |

***The following sections regarding COVID are subject to change***

***given changing circumstances on-campus and in the community.***

***Please check the COVID website for the most up-to-date information at:***

[***www.fresnostate.edu/coronavirus***](http://www.fresnostate.edu/coronavirus)

Vaccination: All Students who access Campus/Programs must be Fully Vaccinated (including the booster dose when eligible to receive it) in order to participate in any in-person course-related activities (either on-campus or off-campus). Students may select that they will not be participating in any in-person activities (which includes use of the Library, Student Union and/or Student Health & Counseling Center) and/or may attest to a Medical or Religious Exemption from the vaccine policy requirement in accordance with CSU and campus procedures. Students should go to the Student Portal to update their COVID self-certification form and vaccine documentation. Requests for exemptions can be found there. You are not to come to campus if any of the following are true:

* You are not considered fully vaccinated, and you have not attested to a medical or religious exemption.
* You have attested to an exemption, but you have not completed your mandatory weekly COVID-19 test.

Health Screening: Please do not come to campus or off-campus learning site if any of the following is true:

* If you have experienced COVID-19 symptoms (vaccinated or not).
* If you have tested positive within the past 10 days.

Please complete the campus [online reporting form](https://fresnostate.co1.qualtrics.com/jfe/form/SV_3faIAsuC8CzuFjD?Q_FormSessionID=FS_UFJ902LXgDJbKeZ) (<https://covid.fresnostate.edu/cases/reporting.html>), and you will then receive further guidance.

Safety Measures:  While masks will no longer be required, we strongly encourage their use, as face coverings are still a valuable tool in the fight against COVID-19, especially in large group settings. We fully support and respect those who wish to continue wearing face coverings.

Individuals can pick up face coverings, provided at no cost, at any of the following locations:

* Library
* University Student Union
* Student Health and Counseling Center
* Student Housing Atrium
* COVID Testing Site

Please see university website for the most updated information: [www.fresnostate.edu/coronavirus](https://covid.fresnostate.edu/)

**Course Overview**

The focus of the course is on Middle and High School mathematics. Through reading, discussion, collaboration, creation, problem solving and reflection, credential candidates will gain an understanding of: a.) how students learn mathematics; b.) the math standards in California school districts and the professional responsibilities that come with teaching them; c.) how to plan for effective math instruction for students in an inclusive classroom; d.) how to use a variety of strategies to actively involve all students in their learning of mathematics; e.) how to assess students’ learning in mathematics; f.) the essential elements of organizing and managing a classroom structure to enhance the learning of mathematics.

Course Prerequisite**:**

Admission to credential program; concurrent teaching experience or by instructor approval.

Required Text:

John A. Van de Walle (2018). T*eaching Student-Centered Mathematics, Volume III, Grades 6 – 8.* Pearson - Third Edition

Supplementary Materials:

All supplementary materials will be posted on our course Google Folder.

Electronic Mail:

Google Drive and E-mail will be used on regular basis to communicate class announcements, grades and encourage peer discussions. All students should access Google folder and become familiar with its use during the first few weeks of classes.

Course Description:

Planning, delivering, and assessing content-specific instruction; academic and common core standards; identifying specific standards that require literacy strategies.

Course Goals

CI 161 is a required course to earn a Single Subject Preliminary Credential. The primary goal of this course is to provide credential candidates a methods class that is centered around important foundational concepts in curriculum, instruction, and classroom organization that are present within the [California Common Core State Standards (CA CCSS)](https://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.PDF) and the [Principles and](https://www.nctm.org/Standards-and-Positions/Principles-and-Standards/) [Standards for School Mathematics (PSSM)](https://www.nctm.org/Standards-and-Positions/Principles-and-Standards/) which are guidelines produced by the [National](https://www.nctm.org/) [Council of Teachers of Mathematics (NCTM).](https://www.nctm.org/)

Candidate Learning Outcomes:

*The learning outcomes are aligned with the Teaching Performance Expectations (TPE) which are standards adopted by the California Commission on Teacher Credentialing (CCTC), and the Candidate Dispositions, adopted by the Kremen School of Education and Human Development: Reflection, Critical Thinking, Professional Ethics, Valuing Diversity, Collaboration, Life-long Learning.*

|  |  |
| --- | --- |
| **Candidate Learning Outcomes** | **TPEs** |
| Candidates will learn how the knowledge of students’ strengths and prior experiences is an important aspect in engaging them in learning. | 1.1 |
| Candidates will understand the importance of connecting classroom learning to the real world. | 1.3 |
| Candidates will learn how to use a variety of developmentally and ability-appropriate instructional strategies and resources, including principles of Universal Design of Learning (UDL) and Multi-Tiered System of Supports (MTSS), to support access to the curriculum for a wide range of learners. | 1.4 |
| Candidates will develop an awareness of the importance of engaging students in critical and creative thinking, inquiry, problem solving, and reflection. | 1.5 |
| Candidates will understand the importance of providing a supportive learning environment for Bilingual Emergent students.  They will learn how to incorporate the English Language Development standards into their lessons. | 1.6 |
| Candidates will learn strategies to monitor student learning and adjust instruction so that students continue to be actively engaged in learning. | 1.8 |
| Candidates will develop an awareness of creating learning environments that promote productive student learning, encourage positive interactions, reflect diversity and are culturally responsive. | 2.2 |
| Candidates will learn the importance of maintaining high expectations for learning with appropriate support for the full range of students in the classroom. | 2.5 |
| Candidates will learn the importance of creating a productive learning environment with high and clear expectations for all students through communicating classroom routines, procedures, and norms. | 2.6 |
| Candidates will examine the adopted California State standards for their content area. | 3.1 |
| Candidates will learn how to gather and apply knowledge about students to organize the curriculum to facilitate student learning. | 3.2 |
| Candidates will learn how to plan & design instruction. | 3.3 |
| Candidates will learn the importance of academic language within learning activities to promote the subject matter knowledge of all students. | 3.5 |
| Candidates will use and adapt resources, standards-aligned instructional materials and a range of technology to facilitate students’ equitable access to the curriculum. | 3.6 |
| Candidates will develop an awareness of how technology can be used to engage students and support teaching and learning | 3.7 |
| Candidates will develop an understanding of the importance of locating students' current academic status, content- and standards-related learning needs and goals, assessment data, language proficiency status, and cultural background for both short-term and long-term instructional planning purposes. | 4.1 |
| Candidates will design and implement instruction and assessment that reflects the interconnectedness of academic content area and related student skills development across the curriculum in mathematics. | 4.3 |
| Candidates will develop an awareness and understanding that advocating for strategies that meet individual learning needs in transition plans (e.g. IEP and 504 plans) will promote student success. | 4.5 |
| Candidates will access resources for planning and instruction, including the expertise of math education communities. | 4.6 |
| Candidates will learn how to plan instruction that promotes a range of communication strategies and activity modes between teacher and student and among students that encourages student participation in learning. | 4.7 |
| Candidates will learn how to access digital resources to develop technology-rich lessons that engage all students in learning, promote digital literacy, and offer students multiple means to demonstrate their learning. | 4.8 |
| Candidates will develop an understanding of the differences between assessments (formative, summative, etc.). | 5.1 |
| Candidates will learn how to use technology as a tool to communicate learning outcomes to students and families. | 5.4 |
| Candidates will examine the importance of reflection and how to reflect on their own teaching practice for the purpose of improving student learning. | 6.1 |
| Candidates will engage in communication with colleagues for the purpose of improving their teaching practice. | 6.3 |
| Candidates will develop an awareness of the responsibilities of the teaching profession, including how to conduct themselves with integrity and model ethical conduct for themselves and others. | 6.5 |
| Candidates will develop an awareness of laws concerning professional responsibilities, including the responsible use of social media and other digital platforms and tools. | 6.6 |

**Student Learning Outcomes:**

*The learning outcomes are aligned with the Principles and Standards for School Mathematics (PSSM) which are guidelines produced by the National Council of Teachers of Mathematics (NCTM).*

1. Students will understand that regardless of their student’s personal characteristics, backgrounds, or physical challenges, every student can learn mathematics when they have access to high-quality mathematics instruction. They will know that equity in the classroom demands that reasonable and appropriate accommodations be made and appropriately challenging math content be included to promote access and attainment for all students *(Principle of Equity)*.

2. Students will need to understand the mathematics they are teaching so that they are able to draw on that knowledge with flexibility in their teaching tasks.  Candidates will engage in mathematical discourse to provide awareness of mathematical topics taught in grades 6 through 12, as well as, help them understand the topics.  In addition, candidates will know how the tasks they expect students to complete relate to the discourse that takes place in this course. *(Principle of Teaching)*.

3. Students will understand the important role of conceptual understanding in the learning of mathematics. Candidates will learn the Math Practice Standards and experience mathematics as a discipline involving exploration, creativity, conjecturing, reasoning, justifying, perseverance, etc.  For example, candidates will learn how to use tools such as, manipulatives, calculators, mathematics software, paper and pencil to understand mathematical topics taught in grades 6 through 12 conceptually. It is only by understanding how they construct their own knowledge of mathematics that they can understand how best to teach mathematics *(Principle of Learning)*.

4. Students will understand that a curriculum is more than a collection of activities; it must be coherent.  Candidates will develop coherent curriculum; mathematical ideas that are linked to and built on one another so that students’ understanding and knowledge deepen and their ability to apply mathematics expand *(Principle of Curriculum)*.

5.  Students will learn that students can develop a deeper understanding of mathematics with the appropriate use of technology. Candidates will know what it means to be mathematically literate in a world that relies on calculators and computers to carry out mathematical procedures. In particular, candidates should be able to use these technological tools to develop students' understanding of mathematics concepts. The technology can help support investigation by students in every area of mathematics and allow them to focus on decision making, reflection, reasoning, and problem solving *(Principle of Technology).*

6.  Students will understand that the tasks teachers select for assessment convey a message to students about what kinds of mathematical knowledge and performance are valued.  They will also understand that assessments should inform and guide teachers as they make instructional decisions to promote mathematical thinking *(Principle of Assessment).*

**Course Specifics**

**Study Expectations**: It is usually expected that students will spend approximately 2 hours of study time outside of class for every one hour in class.  Since this is a 3-unit class, you should expect to study an average of 6 hours outside of class each week.  Some students may need more outside study time and some less.

**Course Requirements:**

* A GROWTH mindset!
* College level skills in reading, writing and oral communication.
* Use multiple applications of technologies to complete course assignments: YouTube, GeoGebra, Desmos, etc.
* Video-recording device such as a phone, tablet or camera.
  + If you need support with your technology (ipads, hotspots etc.), please contact FS DISCOVERe program (<https://www.fresnostate.edu/president/discovere/>)

**Course Suggestions:**

* Professional Activity
  + You are encouraged to join professional mathematics education organizations (CMC, NCTM, AMTE, CUE) and to subscribe to mathematics education journals (such as Mathematics Teacher, Mathematics Teaching in the Middle Schools – this is part of your NCTM membership).
  + You are encouraged to attend professional meetings and conferences.

            (I will make suggestions and make arrangements for you to precipitate)

* You are encouraged to follow mathematical/technology blogs, tweets, etc.

            (I will make suggestions)

**Types of Assignments:**

For a detailed description of what is expected from you on every assignment, refer to Google Folder.  Provided below are summaries of each type of assignment.

***Weekly Assignments:*** There will be weekly assignments.  The assignments will be due at the beginning of the next class.  Homework assignments will include “The Problem of the Day”, topical problem sets, various readings, presentation preparation, and reflections/position paper on readings.  In reflection, you are to present an arguable opinion about an issue from the assigned reading. Ideas need to be carefully examined in choosing a topic developing an argument and organizing your thoughts. Your position paper should be 1-2 typed pages.   You are expected to come prepared to discuss the content of these assignments during the class period.  There will be few occasions where you are asked to read a book related to mathematics education and write a summary.

* *Readings & Reflections:*Research indicates that teacher preparation programs that integrate reflective practices better prepare candidates for the field of teaching (Adler, 1991; Amobi, 2006). This course will require you to type reflections that should be thoughtful and honest. This is part of the weekly commentary which is 30% of the grade.
* *“The Problem of the Day” & topical problem sets*: You will experience mathematics as a discipline involving exploration, creativity, conjecturing, reasoning, justifying, perseverance, etc.  This is part of the weekly assignment which is 15% of the grade.

***Project and Presentation***:

* *Lessons & Presentations:*You will write lessons to teach sample mathematics lessons. These lessons should integrate the teaching techniques you have learned in the class up to that time. Presentation will include administering part of the lesson to the class. This is 15% of the grade.
* *Case Study:*You will be asked to document how well one of your students mastered the topics you were trying to teach. You will identify a student and the mathematical concept to document the student’s progress. This is 10% of the grade.

***Exams***

* *Assessments:*There will be assessments over content, problem solving, professional knowledge and professional practice in mathematics education that we discuss during the class.  There will be a midterm examination (10%) and final examination (15%) over content, problem solving, professional knowledge and professional practice in mathematics education that we discussed during first half of the class.

**Grading Policies**

Calculation of final grades: There will be weekly assignments worth 45% of the final grade. Assessments are 25% (Midterm 10% and Final 15%), Projects and Presentation 25%, and 5% Attendance.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **%** | C | 70 - 79 |
| A | 90 and above | D | 60 - 69 |
| B | 80 -  89 | F | Below 60 |

**Other VERY important points:**

I assume that you are enrolled in this class to become a better teacher and that grades, although important, are secondary to self-improvement.  However, here are a few details:

* **Class participation and attendance:** You are expected to attend every class and participate in discussions.  I expect to see you every meeting.  Attendance is encouraged due to the fact that: 1.) the activities undertaken in class are designed intentionally to be useful to you as a mathematics teacher; 2.) you will develop relationships with peers that encourage your professional network and community; 3.) assessments will contain questions based on activities and discussions taken place in class. Students will be allowed one excused absence. Missing any 30 minutes (beginning, middle, or end) will be considered a tardy. Two tardies are considered an absence.
* **Policy on late assignments:** Assignments are required to be turned in by the announced due dates. If an assignment is submitted late (within 24 hours after it was due), then 50% of the total score earned will be deducted. If an assignment is more than 24 hours late, it will not be graded and counted as incomplete, with a value of zero.
* **Changes:** The instructor reserves the right to change the schedule and procedure outline in the syllabus as appropriate. It is your responsibility to update these changes when they are announced in the class. If you are absent from the class it is your responsibility to check on announcements made while you were absent.

**Final Note**

It is my goal to help you become the best secondary mathematics teacher that you can be.  Activities and assignments that are interesting and informative for one student are not always appropriate for another.  Although I try to provide class activities and assignments that are useful to all students in CI 161, let me know if you feel you are not getting as much out of this course or the assignments as you think you should.  To the extent that requests for alternative assignments seem appropriate and feasible, I will modify activities and assignments to make them more meaningful for you.

In line with the above comment, let me assure you that "my door is open" should you wish to discuss matters related to CI 161 or to teaching in general.  I am happy to discuss the readings or course assignments, your grades on assignments, and to provide samples of the types of questions you might see on a test.  Note that I am willing to react to drafts of papers and assignments as long as I get those drafts far enough in advance to make comments that you can incorporate into your final draft.  If you have a concern, let’s talk about it!  I look forward to working with you this semester.

**University Policies**

**Students with Disabilities:** Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the Henry Madden Library, Room 1202 (278-2811).

The following University policies can be found at:

* [Adding and Dropping Classes](http://www.fresnostate.edu/academics/facultyaffairs/documents/apm/231.pdf)
* [Cheating and Plagiarism](http://www.fresnostate.edu/academics/facultyaffairs/documents/apm/235.pdf)
* [Computers](https://www.fresnostate.edu/catalog/academic-regulations/index.html#computerreq)
* [Copyright Policy](http://www.fresnostate.edu/home/about/copyright.html)
* [Disruptive Classroom Behavior](http://www.fresnostate.edu/academics/facultyaffairs/documents/apm/419.pdf)
* [Honor Code](http://fresnostate.edu/academics/facultyaffairs/documents/apm/236_000.pdf)
* [Students with Disabilities](http://fresnostate.edu/studentaffairs/ssd/)
* [Title IX](http://www.fresnostate.edu/adminserv/hr/title-ix/index.html)

**Honor Code:**

Members of the Fresno State academic community adhere to principles of academic integrity and mutual respect while engaged in university work and related activities. You should:

a) understand or seek clarification about expectations for academic integrity in this course (including no cheating, plagiarism and inappropriate collaboration)

b) neither give nor receive unauthorized aid on examinations or other course work that is used by the instructor as the basis of grading.

c) take responsibility to monitor academic dishonesty in any form and to report it to the instructor or other appropriate official for action.

Instructors may require students to sign a statement at the end of all exams and assignments that “I have done my own work and have neither given nor received unauthorized assistance on this work.” If so, this will be provided to students by the instructor on or before the last day of instruction.

**Cheating and Plagiarism:**

**Plagiarism Detection:** The campus subscribes to Turnitin, a plagiarism prevention service, through Canvas. You will need to submit written assignments to Turnitin. Student work will be used for plagiarism detection and for no other purpose. The student may indicate in writing to the instructor that he/she refuses to participate in the plagiarism detection process, in which case the instructor can use other electronic means to verify the originality of their work. **Turnitin Originality Reports WILL NOT be available for your viewing.**

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work." Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university. For more information on the University's policy regarding cheating and plagiarism, refer to the Class Schedule (Legal Notices on Cheating and Plagiarism) or the University Catalog (Policies and Regulations).

**Disruptive Classroom Behavior:**

The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Differences of viewpoint or concerns should be expressed in terms which are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop an understanding of the community in which they live. Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

**Copyright policy:**

Copyright laws and fair use policies protect the rights of those who have produced the material. The copy in this course has been provided for private study, scholarship, or research.  Other uses may require permission from the copyright holder.  The user of this work is responsible for adhering to copyright law of the U.S. (Title 17, U.S. Code).  To help you familiarize yourself with copyright and fair use policies, the University encourages you to visit its copyright web page:

<http://www.csufresno.edu/library/libraryinformation/campus/copyright/copyrtpolicyfull.pdf>

For copyright Questions & Answers:

<http://www.csufresno.edu/library/libraryinformation/campus/copyright/faqcopyright.pdf>

**UNIVERSITY SERVICES**

The following University services can be found at:

* [Associated Students, Inc.](http://fresnostateasi.org/)
* [Dream Success Center](http://fresnostate.edu/studentaffairs/dsc/index.html)
* [Learning Center Information](http://fresnostate.edu/studentaffairs/lrc)
* [Student Health and Counseling Center](https://www.fresnostate.edu/studentaffairs/health/)
* [Writing Center](http://www.fresnostate.edu/artshum/writingcenter/)