



EDUC 621 – Secondary Math Methods
Online Graduate Winter 2019 (IS)
3 credits

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Office Hours: By Appointment
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Learning Materials:

- **Textbook:** Posamentier, A.S., Smith, B.S., & Stepelman, J.S. (2015). *Teaching secondary mathematics: Techniques and enrichment units* (9th ed.) Upper Saddle River: Pearson ISBN-13: 978-0-13-282483-5
- **3-Ring Binder:** Throughout the course, you should keep a collection of the course material. This is comprised of assignments, chapter reflections, and enrichment units in an organized binder.
- Other readings and video links will be provided when necessary.

Course Catalog Description:

In this course, teacher candidates learn a variety of instructional methodologies and approaches that are workable in the secondary mathematics classroom. Concepts to be covered include establishing a context for instruction, presenting strategies for reading, writing, and studying, and translating information gained into practice.

Required: 8 hours of O&P

Mission Statement:

The mission of the education division is to foster the education of teachers and leaders in education through programs based in the liberal arts tradition, Catholic Marianist's values, current research, and best practices.

Marianist Values:

1. Educate for Formation in Faith
2. Provide an Integral Quality Education
3. Educate in Family Spirit
4. Educate for Service, Justice, and Peace
5. Educate for Adaptation and Change

WASC Core Competencies:

1. Written Communication
2. Oral Communication
3. Quantitative reasoning
4. Critical Thinking
5. Information Literacy

Program Learning Outcomes (PLOs):

1	<i>Content Knowledge</i> (Knowledge of subject matter)
2	<i>Developmentally Appropriate Practice</i> (Knowledge of how students develop and learn, and engagement of students in developmentally appropriate experiences that support learning)
3	<i>Pedagogical Content Knowledge</i> (Knowledge of how to teach subject matter to students and application of a variety of instructional strategies that are rigorous, differentiated, focused on the active involvement of the learner)

4	<i>Educational Technology</i> (Knowledge of and application of appropriate technology for student learning)
5	<i>Assessment for Learning</i> (Knowledge of and use of appropriate assessment strategies that enhance the knowledge of learners and their responsibility for their own learning)
6	<i>Diversity</i> (Skills for adapting learning activities for individual differences and the needs of diverse learners and for maintaining safe positive, caring, and inclusive learning environments)
7	<i>Focus on Student Learning</i> (Skills in the planning and design of meaningful learning activities that support and have positive impact on student learning based upon knowledge of subject matter, students, the community, curriculum standards, and integration of appropriate technology)
8	<i>Professional & Ethical Dispositions and Communication</i> (Professional dispositions, professionalism in teaching, and ethical standards of conduct consistent with Marianist values, and positive and constructive relationships with parents, the school community and professional colleagues).

Course Learning Outcomes (CLOs):

1	Know, understand, and understand the process of mathematical problem solving.
2	Reason, construct, and evaluate mathematical arguments and develop an appreciation for mathematical rigor and inquiry.
3	Communicate his or her mathematical thinking orally and in writing to peers, faculty, and others.
4	Recognize, use, and make connections between and among mathematical ideas and in contexts outside mathematics to build mathematical understanding.
5	Use varied representations of mathematical ideas to support and deepen students' mathematical understanding.
6	Embrace technology as an essential tool for teaching and learning mathematics.
7	Support a positive disposition toward mathematical processes and mathematical learning.
8	Possess a deep understanding of how students learn mathematics and of the pedagogical knowledge specific to mathematics teaching and learning.

Assessment:

Since this course is online, the dates noted are permanent. Read the textbook sections BEFORE you turn in assignments as indicated on the tentative schedule at the end of this syllabus. Always be prepared to explain your thinking in every assignment. The assignments described below are each designed to contribute in a different and significant way to your knowledge and experience relative to diagnosis and remediation of mathematics and to teaching secondary mathematics. It will be your responsibility to turn in all assignments on time. Late assignments will not be accepted. Submissions will all be done electronically through Canvas in **PDF format**.

1. Professionalism / Participation – 10% of Final Grade

Due: Ongoing evaluation by instructor throughout the semester

You are now well into your studies for your chosen career in teacher education. Important in the concept of professionalism is your concern with becoming the best teacher you can become. Your promptness, attention, cooperation, and active participation are necessary to facilitate this process. Attitude and responsibility are also important aspects of professionalism. It is your instructor's responsibility to challenge you to grow as a professional and to help you develop a professional disposition. However, you also have a responsibility to be responsive and participate fully in all

activities and assignments. Your grade will be determined based a holistic evaluation of your professionalism and participation.

2. 10 Enrichment Units – 20% of Final Grade

Due: Every Sunday by Midnight

20 points each

Each week you choose 1 of the 125 Enrichment Units in your textbook. You are free to choose any of the Enrichment Units to read and complete each week. This will allow you to explore topics that are interesting to you! Thus, by the end of the course, you will have explored ten different mathematical concepts that will hopefully be useful in your secondary teaching.

- You are to read the Enrichment Unit section that you choose that week and answer the PostAssessment questions at the end of the unit. Your answers can be handwritten or typed. The intention of these problems is to help you to deepen your own conceptual understanding of the mathematical concepts you may be teaching in the future. These will be submitted on Canvas in a PDF format.

3. Chapters 1 – 8 Reflections– 15% of Final Grade

Due: Every Sunday by Midnight

25 points each

There will be chapter reflections in this course. Reading the first eight chapters is vital for your success in this class and your own future classroom.

- For chapters 1 – 8, you will be required to do a reading reflection over those chapters. Your reflections must be submitted on Canvas in a PDF format. The form in which you complete your reflection can be chosen from the following three options:
 - a. Written Reflection – requires a 250-word typed reflection of the chapter
 - b. Mind Map – summarize main ideas in a mind mapping format that shows strong understanding of the chapter and several of the main ideas presented in the chapter
 - c. Agree & Disagree – Make a bulleted list of 10 points in the chapter you agree with and 5 points in the chapter you disagree with. Each bullet must be a complete sentence.

4. O&P Assignments – 20% of Final Grade

Due: Throughout the Semester on Canvas

25 points each

You will have three separate assignments to complete during your Observation & Participation time in the classroom you are assigned to this semester. These will be submitted on Canvas in a PDF format. Each of the three assignments will involve communication between yourself and your mentor teacher. Please ensure your mentor teacher that if they have questions about the assignments they can contact me at any time. A summary of each assignment is given below. More details about the assignments will be posted on Canvas.

- a. *Observation Reflection* – a general reflection will be made about various situations that took place in the mathematics classroom during one of your 8 hours of O&P.
- b. *Small Group Reflection* – a mathematical task analysis will be completed with a group of 2 – 3 children during one of your 8 hours of O&P and a reflection will be made on the thinking of the students you work with.
- c. *Teaching Reflection* – you will coordinate with your mentor teacher to teach a lesson to the whole class during one of your 8 hours of O&P and a reflection will be made on how the lesson turned out.
- d. *Completed O&P Time Sheet (Due: March 17th)* – Fill out the days and times you completed your hours. You and your mentor teacher sign must sign the bottom before uploading the completed time sheet.

5. Three-Act Task – 20% of Final Grade

Act 1 Due: February 17th

Full Version Due: March 17th

100 points

You will design a three-act task that focuses on a secondary mathematics content area covered in this course. The task rubric and template will be given to you on Canvas, as well as more information about what a Three-Act Task consists of. You will be required to complete and submit Act 1 of your Three-Act Task by week 6 of the course, in order to receive feedback to complete the rest of the task effectively. The final version of the lesson plan task will be submitted on Canvas in a PDF format.

6. Literature Review – 15% of Final Grade

Topic Approved: By February 10th

Final Version Due: March 10th

100 points

Over a period of several weeks, you will locate 5-7 research articles to read on an elementary mathematics concept. Based on your readings, you will develop a 2-3 page literature review. Dr. Mukina must approve possible topics by the end of week 5 before you begin writing and researching. Your final paper must be free of grammatical and typographical errors along with using proper APA format. The final version of the literature review needs to be submitted on Canvas in a PDF format.

Assignments	Percentage of Final Grade
Professionalism / Participation	10%
10 Enrichment Units	20%
Chapter 1 – 8 Reflections	15%
O&P Assignments	20%
Three-Act Task	20%
Literature Review	15%

Grading Scale	
90 – 100 %	A
80 – 89 %	B
70 – 79 %	C
60 – 69 %	D
0 – 59 %	F

Course Attendance Policy:

As stated in the Chaminade University Catalog, students are expected to attend all classes for courses in which they are registered. Students must follow the attendance policy as stipulated in the syllabus of Education Division courses. Penalties for not meeting the attendance requirements may result in lowering of the grade, withdrawal from the course, or failing the course.

1. Excused Absences.

1.1. Since it is expected that students will participate in all class sessions, excused absences are only granted in exceptional situations where evidence is provided by the student to the instructor. Examples would include illness (with verification by a doctor) or the death of a close family member. Students should notify their instructors when a situation prevents them from attending class and make arrangements to complete missed assignments. *While notification of the instructor by a student that he/she will be absent is courteous, it does not necessarily mean the absence will be excused.*

1.2. In cases where excused absences constitute a significant portion of a course's meetings (e.g., more than 20% of on-ground course meetings, or a significant portion of online or hybrid courses), the instructor should refer the case to the Dean with a recommendation on how the case should be handled (e.g., withdrawal or incomplete).

2. Unexcused Absences. Chaminade University policy states that in cases where unexcused absences are equivalent to more than a week of classes the instructor has the option of lowering the grade. In the Education Division, we have added detailed guidelines to cover different types of courses and class schedules:

- 2.1. On-Ground courses: Missing more than 2 weeks of class (6 classes) will result in an automatic lowering of one letter grade after final grade is calculated.
- 2.2. Online courses and online portion of hybrid courses: The instructor will specify and enforce expectations for online participation and receipt of assignments appropriate to the design of the course. For online/hybrid courses failure to log in for one week is equivalent to an absence in a traditional on-ground course. Two weeks of not logging in constitutes grounds for removal of the student from the course.

3. Additional Notes.

- 3.1. If a student does not logon to an online or hybrid course for the first two weeks, the instructor should notify the Dean and the student will be withdrawn from the course.
- 3.2. Any student who stops attending an on-ground course or stops participating in an online course without officially withdrawing may receive a failing grade.

University Policies

Academic Honesty Statement: Violations of the Honor Code are serious. They harm other students, your professor, and the integrity of the University. Alleged violations will be referred to the Office of Judicial Affairs. If found guilty of plagiarism, a student might receive a range of penalties, including failure of an assignment, failure of an assignment and withholding of the final course grade until a paper is turned in on the topic of plagiarism, failure of the course, or suspension from the University.

Violations of Academic Integrity: Violations of the principle include, but are not limited to:

- Cheating: Intentionally using or attempting to use unauthorized materials, information, notes, study aids, or other devices in any academic exercise.
- Fabrication and Falsification: Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of inventing or counterfeiting information for use in any academic exercise.
- Multiple Submissions: The submission of substantial portions of the same academic work for credit (including oral reports) more than once without authorization.
- Plagiarism: Intentionally or knowingly presenting the work of another as one's own (i.e., without proper acknowledgment of the source).
- Abuse of Academic Materials: Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource materials.

Complicity in Academic Dishonesty: Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

Plagiarism includes, but is not limited to:

- Copying or borrowing liberally from someone else's work without his/her knowledge or permission; or with his/her knowledge or permission and turning it in as your own work.
- Copying of someone else's exam or paper.
- Allowing someone to turn in your work as his or her own.
- Not providing adequate references for cited work.
- Copying and pasting large quotes or passages without properly citing them.

Title IX Compliance: Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. Should you want to speak to a confidential source you may contact the following:

- Chaminade Counseling Center: 808-735-4845
- Any priest serving as a sacramental confessor or any ordained religious leader serving in the sacred confidence role.

Disability Access:

The University is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students who need accommodations must be registered with Student Disability Services. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the Counseling Center by the end of week three of the class, in order for the instructor to plan accordingly. Failure to provide written documentation will prevent your instructor from making the necessary accommodations. Please refer any questions to the Dean of Students.

Course Outline (Winter 2019)

*The professor reserves the right to make adjustments to this outline to better accommodate student needs.

Week # / Day # Date	Class Description	Assignments Due Each Sunday by Midnight
Week 1 January 7 th – 13 th	Book: <i>Chapter 1: The Challenge of Teaching</i> Pages 1 – 14	January 13 th - Chapter 1 Reflection on Canvas in PDF - Enrichment Unit #1 Due
Week 2 January 14 th – 20 th	Book: <i>Chapter 2: Long-Range and Short-Range Planning</i> Pages 15 – 74	January 20 th - Chapter 2 Reflection on Canvas in PDF - Enrichment Unit #2 Due
Week 3 January 21 st – 27 th	Book: <i>Chapter 3: Teaching More Effective Lessons</i> Pages 75 – 143	January 27 th - Chapter 3 Reflection on Canvas in PDF - Enrichment Unit #3 Due
Week 4 Jan. 28 th – Feb. 3 rd	Book: <i>Chapter 4: The Role of Problem Solving</i> Pages 144 – 179	February 3 rd - Chapter 4 Reflection on Canvas in PDF - Enrichment Unit #4 Due
Week 5 February 4 th – 10 th	Book: <i>Chapter 5: Using Technology to Enhance Mathematics Instruction</i> Pages 180 – 225	February 10 th - Chapter 5 Reflection on Canvas in PDF - Enrichment Unit #5 Due - Literature Review Topic Submitted to be Approved - O&P Observation Reflection
Week 6 February 11 th – 17 th	Book: <i>Chapter 6: Assessment</i> Pages 226 – 261	February 17 th - Chapter 6 Reflection on Canvas in PDF - Enrichment Unit #6 Due - Act One of Three Act Task Due for Feedback

Week 7 February 18 th – 24 th	Book: <i>Chapter 7: Enriching Mathematics Instruction</i> Pages 262 – 291	February 24 th - Chapter 7 Reflection on Canvas in PDF - Enrichment Unit #7 Due - O&P Small Group Reflection
Week 8 Feb. 25 th – Mar. 3 rd	Book: <i>Chapter 8: Extracurricular Activities in Mathematics</i> Pages 292 – 308	March 3 rd - Chapter 8 Reflection on Canvas in PDF - Enrichment Unit #8 Due
Week 9 March 4 th – 10 th		March 10 th - Enrichment Unit #9 Due - Literature Review
Week 10 March 11 th – 17 th		March 17 th - Enrichment Unit #10 Due - Full Version of Three-Act Task - O&P Teaching Reflection & Completed Time Sheet