

Note:

Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should not be used to purchase course materials.

COURSE SYLLABUS

EDUC 530

TEACHING MATHEMATICS

COURSE DESCRIPTION

An in depth study of the theory and processes of teaching mathematics to students in preschool through eighth grade, the course includes the instructional process in the area of numeration, operations and computations, geometry and logic. Candidates will participate in hands-on, modeled instruction, will construct and demonstrate models and teaching tools, and will complete a research project.

RATIONALE

Mastery of the skills of mathematics is crucial to the education of school-age children. Because of the developmental nature of mathematics, the elementary and middle school years are most critical in the development of this proficiency with positive affective elements. Professional educators who serve at this level must be proficient in the necessary skills, implement appropriate instructional processes, and present a positive attitude toward the field of mathematics.

I. PREREQUISITE

For information regarding prerequisites for this course, please refer to the [Academic Course Catalog](#).

II. REQUIRED RESOURCE PURCHASE

Click on the following link to view the required resource(s) for the term in which you are registered: <http://bookstore.mbsdirect.net/liberty.htm>

III. ADDITIONAL MATERIALS FOR LEARNING

- A. Computer with basic audio/video output equipment
- B. Internet access (broadband recommended)
- C. Blackboard [recommended browsers](#)
- D. Microsoft Office

IV. MEASURABLE LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

- A. Given a diagnostic instrument for mathematics proficiency, compute and solve arithmetic problems appropriate for elementary and middle school.

- B. Given mathematics tools, apply metacognitive principles to the process of teaching mathematics to an elementary student or middle school student.
- C. Given current research data, analyze current practices in the teaching of mathematics and prescribe the alterations needed to correct the gaps and duplications contained therein.
- D. In an essay format, compare and contrast the methods of instruction observed in the classroom setting with the metacognitive approach to mathematics instruction.
- E. In an essay format, evaluate the approach to mathematics proposed by a self-selected text series.
- F. Using mathematics teaching tools, describe the application of the tool in the instructional setting.
- G. In terms of mathematics instruction, compare the metacognitive processes necessary for learning by a primary student, an intermediate student, and a middle school student.
- H. Discuss how mathematics relates to the biblical worldview perspective.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

- A. Textbook readings and presentations
- B. Course Requirements Checklist
After reading the Course Syllabus and [Student Expectations](#), the student will complete the related checklist found in Module/Week 1.
- C. Discussion Board Forums (5)
Discussion boards are collaborative learning experiences. Therefore, the student will post a response to the discussion question in the appropriate Discussion Board Forum. The thread must be 300 words. The student will then post a 150-word reply to 2 other classmates' threads. Weekly readings must be cited in the initial post and in at least 1 reply. (MLO: B, C, F, H).
- D. Math Attitudes Survey
The student will take a 14-question survey that will assist the instructor in assessing the students' attitudes toward mathematics. There are no right or wrong answers. There is also no time limit.
- E. Quizzes (8)
The student will complete one quiz each week over the chapters that are assigned per the course schedule over the Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2016). *Elementary and middle school mathematics* (9th ed.). Upper Saddle River, NJ: Pearson. ISBN: 9780134046952. (MLO: A, B, C, F)
Each quiz will contain 10 questions and will have a 60 minute time limit. Quizzes will be open-book and open-note. Each quiz may be taken up to 2 times.
- F. Field Experience Requirements

The completion of at least 10 hours of field experience in a classroom setting for math instruction is a required component of this course. Consequently, the student will submit 2 field experience assignments via [LiveText](#): 1) the Field Experience Log and 2) the Field Experience Report. (Students who cannot complete the Field Experience may choose to complete the Alternate Field Experience assignment.) (MLO: B, C, D, F, H)

G. Instructional Planning, Performance, and Reflection (IPPR) (2)

The student will create and implement lesson plans for 2 instructional tools. One tool should be selected or created for each lesson. The student will choose one or more mathematics standards that are grade appropriate for the class where he or she is observing. These assignments will be submitted via [LiveText](#). (MLO: A, B, C, D, E, F, H)

H. Online Field Trip

The student will explore various websites and note important facts gleaned from each “online field trip.” He or she will write a 2–3-sentence summary of each website. The student will also choose his or her favorite 5 websites and write at least 1 page on how he or she plans to use them in his or her future career. (MLO: B, C, E, F, G).

I. ELE Task 4

The student will be required to evaluate and reflect on the two IPPR lessons which were designed and taught. In addition, the student will reflect on what a third lesson might look like. See [LiveText](#) for instructions. (MLO: C, D, E, F).

VI. COURSE GRADING AND POLICIES

A. Points

Course Requirements Checklist	10
Discussion Board Forums (5 at 42 pts ea)	210
Quizzes (8 at 30 pts ea)	240
Field Experience Requirements	
Field Experience Plan	25
Field Experience Report	105
IPPR (2 at 110 pts ea)	220
Online Field Trip	100
ELE Task 4	100
Total	1010

B. Scale

A = 940–1010 A- = 920–939 B+ = 900–919 B = 860–899 B- = 840–859
 C+ = 820–839 C = 780–819 C- = 760–779 D+ = 740–759 D = 700–739
 D- = 680–699 F = 0–679

C. LiveText Submission Policy

All LiveText assignments must be submitted to Blackboard and LiveText in order for the candidate to receive credit. **LiveText Submission Exception:** Candidates pursuing the following programs: M.Ed. in Higher Education, Ed.S. in Higher Education Administration, the Ph.D. in Education, and the Ph.D. in Higher

Education Administration, are not required to submit this assignment in LiveText, but must submit this assignment in Blackboard.

D. Limits of Confidentiality

Students are encouraged to share prayer requests and life concerns with the professor in this class. Not only will the professor pray for and care for students, but can guide students to appropriate University resources if desired.

However, in the event of a student's disclosure, either verbally or in writing, of threat of serious or foreseeable harm to self or others, abuse or neglect of a minor, elderly or disabled person, victim or witness of a crime or sexual misconduct, or current involvement in criminal activity, the faculty, staff, administrator, or supervisor will take immediate action. This action may include, but is not limited to, immediate notification of appropriate state law enforcement or social services personnel, emergency contacts, notification of the appropriate program chair or online dean, or notification to other appropriate University officials. All reported information is treated with discretion and respect, and kept as private as possible.

E. Disability Assistance

Students with a documented disability may contact Liberty University Online's Office of Disability Accommodation Support (ODAS) at LUOODAS@liberty.edu to make arrangements for academic accommodations. Further information can be found at www.liberty.edu/disabilitysupport.

If you have a complaint related to disability discrimination or an accommodation that was not provided, you may contact ODAS or the Office of Equity and Compliance by phone at (434) 592-4999 or by email at equityandcompliance@liberty.edu. Click to see a full copy of Liberty's [Discrimination, Harassment, and Sexual Misconduct Policy](#) or the [Student Disability Grievance Policy and Procedures](#).

COURSE SCHEDULE

EDUC 530

Textbooks: Loop, *Revealing Arithmetic: Math Concepts from a Biblical Worldview* (2010).
Van de Walle et al., *Elementary and Middle School Mathematics* (10th ed., 2019).

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Loop: pgs. viii–xii Van de Walle et al.: chs. 1–2 3 presentations	Course Requirements Checklist Advising Guide Acknowledgement Class Introductions DB Forum 1 Math Attitudes Survey Field Experience Plan Quiz 1	10 0 0 42 0 25 30
2	Loop: Appendix D, pgs. 180–191 Van de Walle et al.: chs. 3–5 3 presentations	DB Forum 2 Quiz 2	42 30
3	Loop: pgs. 1–8 Van de Walle et al.: chs. 6–8 2 presentations Online Fields Trip websites	DB Forum 3 Online Field Trip Quiz 3	42 100 30
4	Loop: pgs. 14–46 Van de Walle et al.: chs. 9–11 3 presentations	IPPR 1 Quiz 4	110 30
5	Van de Walle et al.: chs. 12–14 1 presentation	DB Forum 4 Quiz 5	42 30
6	Loop: pgs. 79–129 Van de Walle et al.: chs. 15–17 3 presentations	IPPR 2 Quiz 6	110 30
7	Loop: pgs. 113–137 Van de Walle et al.: chs. 18–20 3 presentations	DB Forum 5 Quiz 7	42 30
8	Loop: pgs. 138–140 Van de Walle et al.: chs. 21–23 1 presentation	ELE Task 4 Field Experience Report Quiz 8	100 105 30
TOTAL			1010

DB = Discussion Board

NOTE: Each course module/week begins on Monday morning at 12:00 a.m. (ET) and ends on Sunday night at 11:59 p.m. (ET). The final module/week ends at 11:59 p.m. (ET) on **Friday**.