# CUAA SECONDARY EDUCATION - MATHEMATICS (ONLINE)

Mathematics is an aspect of our everyday lives and an important part of our culture. Applications of Mathematics are found in many disciplines today, including the physical sciences, biological sciences, business, economics, computer science and psychology. Concordia University offers two levels of teaching Mathematics: Middle Levels for grades 5 - 9, and Upper Levels for grades 7 - 12.

**Middle Levels Overview:** Concordia University Ann Arbor's Middle Levels teacher certification program equips teacher leaders with the skills and dispositions uniquely required to teach students in the middle grades. You'll learn how to design and use teaching methods in your specialty area that will make a meaningful impact in the classroom. Our program encourages the practical application of pedagogical skills through the use of clinical experiences in every course. You'll leave the program prepared and confident to engage middle level learners to reach their highest potential.

**Upper Levels Overview:** The Upper Levels grade band teacher certification focuses specifically on the skills and dispositions needed to teach middle and high school age students. In this program you will gain an understanding of the pedagogy specific to learners in this age group as well as comprehend alignment of curriculum for effective instruction. Students who choose this grade band are dynamic instructors of their content area who are fully supported to teach various subjects with the goal of increased student learning.

#### **Professional Sequence Learning Outcomes:**

- Plan, modify and apply evidence based instructional approaches that promote vocabulary growth.
- Implement texts that showcase a variety of viewpoints, genres, literary devices and audiences.
- Cultivate students' literary identities through motivational and engagement strategies.
- Learn to provide opportunities for active listening and collaborative classroom discussions.
- Possess the knowledge of a plethora of literary texts relevant to secondary learners to encourage reading for pleasure.
- Connect teaching and learning to social contexts that promote student growth of critical consciousness.

#### The School of Education Program Learning Outcomes:

- SL1. Faith Integration: Candidates display the Christian principles that are central to the university's mission.
- SL2. Caring Relationships: Candidates establish caring, supportive relationships with students, families and colleagues.
- **RP3. Disciplinary Knowledge:** Candidates demonstrate an in-depth knowledge of the skills and frameworks of their content areas appropriate to their certification.
- RP4. Pedagogy and Instruction: Candidates understand and implement best practices of instruction and deliver well-differentiated and well-aligned instruction that empowers students as learners.
- RP5. Communication: Candidates demonstrated effective communication skills to enhance teaching and learning.

- **RP6. Assessment:** Candidates use various types of assessment to evaluate student progress and to improve their instruction.
- **RP7. Classroom Environment**: Candidates assess and respond appropriately to the cultures of diverse classrooms, schools, and the community.
- LL8. Professionalism and Personal Growth: Candidates engage in continuous growth by consistently expanding their professional knowledge, skills and dispositions.

#### Math Learning Outcomes:

- Structure learning opportunities and use teaching practices to advance the learning of every student by providing access, support, and challenge.
- Address the multitude of factors that exist when planning for effective instruction with specific attention to individual students' learning needs.
- Implement effective mathematical pedagogical practices to develop students' meaningful learning of mathematics.
- Collaborate with others to engage students in mathematical thinking and experiences.
- Learn how students' mathematical ideas develop across levels of thinking and learning.
- Identify and strategically implement teaching strategies that engage students in mathematical concepts and processes.
- Support students in developing and maintaining positive mathematical identities.
- Provide access for every student to a high-quality mathematics curriculum.
- Promote systems that produce equitable mathematics learning experiences and outcomes for all students.
- Challenge the status quo of students' mathematical experiences and recognize the advocacy role of teaching.
- Possess deep and flexible knowledge of core mathematical concepts, procedures and practices.
- Describe how all people are capable of thinking mathematically and are able to solve sophisticated mathematical problems with effort.
- Read, analyze, interpret and enact research based curriculum and materials.
- Demonstrate proficiency in the tools and technology designed to support mathematical reasoning and sense making.

Code	Title		Hours
Undergrad	uate Core Requirements	s - Public Education	44
Undergrad	uate Core Requirements	s - Lutheran Teacher Diploma	47
Public Edu	cation Major		70
Public Edu	cation Elective Credits		6
Lutheran T	eacher Diploma Major		76
Total Credi	ts - Public Education		120
Total Credi Certificate	ts - Lutheran Teacher D	iploma or Christian Teacher	123

#### Core Curriculum - 44-47 credits

Concordia Common Core

Code	Title	Hours
Theology - Pu	ublic Education	
REL 1000	The Bible	3

REL 1100	Christian Faith	3
Theology - Luther Certificate (CTC)	an Teacher Diploma (LTD) or Christian Teacher	
REL 2010	Old Testament	3
REL 2020	New Testament	3
REL 2030	Biblical Theology	3
Liberal Arts Core		
CCE 1010	Christian Citizen	3
CCE 1020	Western Culture & Worldview	3
CCE 1030	Western Thought & Worldview	3
CCE 1040	Science & Humanity	3
Faith and Life Cou	Irse	3
ENV 1050	Introduction to Environmental Science	3
MATH 1280	College Algebra	3
GEOG 2200	Cultural Geography	3
HHP 1115	Fit and Well	2
ED 1102	Foundations of Education	3
Human Creativity	and Expression Course	3
ENG 2100	College Writing	3
Communication or Language Course 3		

### Curriculum - Middle Levels Grades 5 - 9

Code	Title	Hours
Professional Edu	cation Studies: Middle Levels (grades 5-9)	
EDU 1004	Teaching & Learning in Diverse Societies Secondary Clinical	1
ED 1275	Human Learning	3
EDU 1024	Human Growth and Development Secondary Clinical	1
EDU 5040	Technology Instruction for Educators	3
ED 1230	Nature of the Exceptional Child	3
EDU 5010	Designing Instruction	3
EDU 2004	Designing Instruction for Student Success Secondary Clinical	1
EDU 5020	Differentiated Instruction	3
EDU 2024	Differentiation for All Learners Secondary Clinica	al 1
ED 4340	The Art and Science of Assessment and Instruction	3
EDU 3004	Assessment and Evaluation for Educators Secondary Clinical	1
EDU 3050	Preparing for Student Teaching	1
EDU 6035	Instructional Methods for Middle Levels	3
EDU 4213	Methods for Teaching Middle Levels Clinical	1
EDU 6030	Literacy Instruction for Middle Levels	3
EDU 3213	Literacy for Teaching Middle Levels Clinical	1
EDU 4293	Student Teaching for Middle Levels	12
Total Hours		44
Code	Title	Hours

Code	nue	Hours
Required Mathem	atics Courses	
MATH 1280	College Algebra	
MATH 2010	Calculus I	4
MATH 2020	Calculus II	4

MATH 2050	Statistics I	3
MATH 2200	Discrete Math	3
MATH 3130	Math in the Middle School	3
MATH 3310	Geometry	3
MATH 4610	Probability & Statistics	3
ED 4374	Curriculum and Methods of Teaching Mathematics - Secondary	3
Total Hours		26
Code	Title H	ours
Lutheran (LCMS N	Nembers) Teacher Diploma Requirements.	
ED 2306	Teaching the Faith	3
REL 4000	Lutheran Confessions	3
Code	Title H	ours
Undergraduate Co	pre Requirements - Public Education	44
Undergraduate Co	ore Requirements - Lutheran Teacher Diploma	47
Public Education	Major	70
Public Education	Elective Credits	6
Lutheran Teacher	Diploma Major	76
Total Credits - Pu	blic Education	120
Total Credits - Lu	theran Teacher Diploma or Christian Teacher	123
Certificate		

### Core Curriculum - 44-47 credits

Concordia Common Core

Code	Title	Hours
Theology - Public	Education	
REL 1000	The Bible	3
REL 1100	Christian Faith	3
Theology - Luther Certificate (CTC)	an Teacher Diploma (LTD) or Christian Teacher	
REL 2010	Old Testament	3
REL 2020	New Testament	3
REL 2030	Biblical Theology	3
Liberal Arts Core		
CCE 1010	Christian Citizen	3
CCE 1020	Western Culture & Worldview	3
CCE 1030	Western Thought & Worldview	3
CCE 1040	Science & Humanity	3
Faith and Life Cou	Irse	3
ENV 1050	Introduction to Environmental Science	3
MATH 1280	College Algebra	3
GEOG 2200	Cultural Geography	3
HHP 1115	Fit and Well	2
ED 1102	Foundations of Education	3
Human Creativity	and Expression Course	3
ENG 2100	College Writing	3
Communication o	r Language Course	3

### Curriculum - Upper Levels Grades 7 - 12

Code	Title	Hours
Professional Edu	cation Studies: Upper Levels (grades 7-12)	
EDU 1004	Teaching & Learning in Diverse Societies Secondary Clinical	1
ED 1275	Human Learning	3
EDU 1024	Human Growth and Development Secondary Clinical	1
EDU 5040	Technology Instruction for Educators	3
ED 1230	Nature of the Exceptional Child	3
EDU 5010	Designing Instruction	3
EDU 2004	Designing Instruction for Student Success Secondary Clinical	1
EDU 5020	Differentiated Instruction	3
EDU 2024	Differentiation for All Learners Secondary Clinical	1
ED 4340	The Art and Science of Assessment and Instruction	3
EDU 3004	Assessment and Evaluation for Educators Secondary Clinical	1
EDU 3050	Preparing for Student Teaching	1
EDU 6045	Instructional Methods for Upper Levels	3
EDU 4224	Methods for Teaching Upper Levels Clinical	1
EDU 6040	Literacy Instruction for Upper Levels	3
EDU 3224	Literacy for Teaching Upper Levels Clinical	1
EDU 4294	Student Teaching for Upper Levels	12
Total Hours		44
Code	Title	Hours
Required Mathem	atics Courses	
MATH 1280	College Algebra	
MATH 2010	Calculus I	4
MATH 2020	Calculus II	4
MATH 2050	Statistics I	3
MATH 2200	Discrete Math	3
MATH 3130	Math in the Middle School	3
MATH 3310	Geometry	3
MATH 4610	Probability & Statistics	3
ED 4374	Curriculum and Methods of Teaching Mathematic	cs 3

MATH 4610	Probability & Statistics	3
ED 4374	Curriculum and Methods of Teaching Mathemati	ics 3
	- Secondary	
Total Hours		26
Code	Title	Hours
Lutheran (LCMS M	1embers) Teacher Diploma Requirements.	

Eutheran (ECMS Members) reacher Dipionia Requirements.			
ED 2306	Teaching the Faith	3	
REL 4000	Lutheran Confessions	3	

### Plan - Middle Levels Grades 5-9

Course	Title	Hours
Semester 1		
ED 1102	Foundations of Education	3
EDU 1004	Teaching & Learning in Diverse Societies Secondary Clinical	1
REL 1000	The Bible	3
CCE 1020	Western Culture & Worldview	3

MATH 1280	College Algebra	3
	Hours	13
Semester 2		
ED 1275	Human Learning	3
EDU 1024	Human Growth and Development Secondary Clinical	1
MATH 2050	Statistics I	3
HUMAN CREATIVITY		3
CCE 1040	Science & Humanity	3
	Hours	13
Semester 3		
ED 1230	Nature of the Exceptional Child	3
CCE 1010	Christian Citizen	3
MATH 3310	Geometry	3
CCE 1030	Western Thought & Worldview	3
ENG 2100	College Writing	3
	Hours	15
Semester 4		
MATH 2010	Calculus I	4
MATH 3130	Math in the Middle School	3
EDU 5020	Differentiated Instruction	3
EDU 2024	Differentiation for All Learners Secondary Clinical	1
GEOG 2200	Cultural Geography	3
	Hours	14
Semester 5		
MATH 2200	Discrete Math	3
MATH 2020	Calculus II	4
REL 1100	Christian Faith	3
EDU 5010	Designing Instruction	3
EDU 2004	Designing Instruction for Student Success Secondary	1
	Clinical	
HHP 1115	Fit and Well	2
	Hours	16
Semester 6		
ENV 1050	Introduction to Environmental Science	3
ED 4340	The Art and Science of Assessment and Instruction	3
EDU 3004	Assessment and Evaluation for Educators Secondary	1
	Clinical	
FAITH & LIFE		3
COMMUNICATION & LAI	NGUAGE	3
	Hours	13
Semester 7		
EDU 3050	Preparing for Student Teaching	1
EDU 6030	Literacy Instruction for Middle Levels	3
EDU 3213	Literacy for Teaching Middle Levels Clinical	1
MATH 4610	Probability & Statistics	3
EDU 6035	Instructional Methods for Middle Levels	3
EDU 4213	Methods for Teaching Middle Levels Clinical	1
ED 4374	Curriculum and Methods of Teaching Mathematics - Secondary	3
	Hours	15
Semester 8		
EDU 5040	Technology Instruction for Educators	3
EDU 4293	Student Teaching for Middle Levels	12
ELECTIVES		6
	Hours	21
	Total Hours	120

Course options and schedule are subject to change.

## Plan - Upper Levels Grades 7-12

Course	Title	Hours
Semester 1		
ED 1102	Foundations of Education	3
EDU 1004	Teaching & Learning in Diverse Societies Secondary Clinical	1
REL 1000	The Bible	3
CCE 1020	Western Culture & Worldview	3
MATH 1280	College Algebra	3
	Hours	13
Semester 2		
ED 1275	Human Learning	3
EDU 1024	Human Growth and Development Secondary Clinical	1
HUMAN CREATIVITY	. ,	3
MATH 2050	Statistics I	3
CCE 1040	Science & Humanity	3
	Hours	13
Semester 3		
ED 1230	Nature of the Exceptional Child	3
CCE 1010	Christian Citizen	3
MATH 3310	Geometry	3
CCE 1030	Western Thought & Worldview	3
ENG 2100	College Writing	3
	Hours	15
Semester 4		
MATH 2010	Calculus I	4
MATH 3130	Math in the Middle School	3
EDU 5020	Differentiated Instruction	3
EDU 2024	Differentiation for All Learners Secondary Clinical	1
GEOG 2200	Cultural Geography	3
	Hours	14
Semester 5		
MATH 2200	Discrete Math	3
MATH 2020	Calculus II	4
REL 1100	Christian Faith	3
EDU 5010	Designing Instruction	3
EDU 2004	Designing Instruction for Student Success Secondary Clinical	1
HHP 1115	Fit and Well	2
	Hours	16
Semester 6		
ENV 1050	Introduction to Environmental Science	3
ED 4340	The Art and Science of Assessment and Instruction	3
EDU 3004	Assessment and Evaluation for Educators Secondary Clinical	1
FAITH & LIFE		3
COMMUNICATION & LANG	UAGE	3
	Hours	13
Semester 7		
EDU 3050	Preparing for Student Teaching	1
EDU 6040	Literacy Instruction for Upper Levels	3
EDU 3224	Literacy for Teaching Upper Levels Clinical	1
MATH 4610	Probability & Statistics	3
EDU 6045	Instructional Methods for Upper Levels	3
EDU 4224	Methods for Teaching Upper Levels Clinical	1
ED 4373	Curriculum and Methods of Teaching Social Studies -	3
	Secondary	
Semester 8	Hours	15
EDU 4294	Student Teaching for Upper Levels	12
EDU 5040	Technology Instruction for Educators	3

ELECTIVES		6
	Hours	21
	Total Hours	120

Course options and schedule are subject to change.