

Math 1077WDE Sequence and Series (2021 Winter)

(Online using D2L, Zoom, and WebWork)

Instructor: [Dr. Wendy Huang](#)

Zoom Lectures:

MWF: 10:30 – 11:30 AM (ET)

Note: access zoom classrooms through D2L mycourselink.

Office Hour:

T: 8:30 – 10:30 AM (ET)

Contact your instructor:

- E-Mail: whuang1@lakeheadu.ca. Any time. When sending emails regarding the course, include course number, your name, and keywords in the subject line. For example, "Subject: Math 1077, Jen Smith, convergence series". (Otherwise, your message will not be opened.)
- Join zoom tutorial sessions: Tue. 8:30 – 10:30AM

Mathematics 1077 Sequences and Series

Exponents and logarithms and their algebra; geometric progressions; binomial coefficients and the binomial theorem; mathematical induction; sequences and their limits; the exponential and natural logarithm functions; infinite series; and tests for convergence of infinite series.

Credit Weight:0.5

Prerequisite(s):[Mathematics 1051](#)

Offering:0-0; 3-2

Notes: Students who have previous credit in Mathematics 1052 - Introductory Calculus I and Mathematics 1072 - Introductory Calculus II, can be given credit for [Mathematics 1077 - Sequences and Series](#) and [Mathematics 1078 - Elementary Calculus](#). Students who have previous credit in Mathematics 1052 but not Mathematics 1072 cannot be given credit for either Mathematics 1077 or [Mathematics 1078](#).

Course Classifications: Type C: Engineering, Mathematical and Natural Sciences

Textbook (optional):

Essentials of Technical mathematics with Calculus, 2nd Edition, by Richard S. Paul and M. Leonard Shaevel (Chapters 2, 15, 20)

Evaluation (Subject to Change):

8 WeBWork Assignments	30%
5 In-class Tests	70%

Schedule (Subject to Change):

	Date	Contents	Assignments
1a	Mon. Jan. 11	Positive Integer Exponents (Sec. 2.1)	Assignment 1 (Due: Jan. 20)
1b	Wed. Jan. 13	Zero and negative exponents, Scientific	

		notation (Sec. 2.2-3)	
1c	Fri. Jan. 15	Radical (Sec. 2.4)	
2a	Mon. Jan. 18	Rational exponents (Sec. 2.5)	Assignment 2
2b	Wed. Jan. 20	Review: Exponents (Chapter 2)	(Due: Jan. 27)
2c	Fri. Jan. 22	Exponential function (Sec. 15.1)	Assignment 3
3a	Mon. Jan. 25	In class Test (Chapter 2)	(Due: Feb. 3)
3b	Wed. Jan. 27	Logarithmic functions (Sec. 15.2)	
3c	Fri. Jan. 29	Properties of Logarithms (Sec. 15.3)	
4a	Mon. Feb. 1	Change of Base (Sec. 15.4)	Assignment 4
4b	Wed. Feb. 3	Exponential and Logarithmic Equations (Sec. 15.5)	(Due: Feb. 11)
4c	Fri. Feb. 5	Review: Exponential and Logarithmic (Chapter 15)	
5a	Mon. Feb. 8	Sequences and series (Sec. 20.1)	Assignment 5
5b	Wed. Feb. 10	In class Test 2 (Chapter 15)	(Due: Feb. 24)
5c	Fri. Feb. 12	Arithmetic and Geometric Progressions (Sec. 20.2-3)	
		Study Week	
6a	Fri. Feb. 26	Limit of Sequence (Sec. 20.4)	
6b	Mon. Mar. 1	Properties of Limits	Assignment 6
6c	Wed. Mar. 3	Sequences with Special Properties	(Due: Mar. 9)
7a	Fri. Mar. 5	Mathematical Induction	
7b	Mon. Mar. 8	More Examples	
	Wed. Mar. 10	In class Test 3 (Sequence)	
8a	Fri. Mar. 12	Infinite Geometric series (Sec. 20.5)	Assignment 7
8b	Mon. Mar. 15	Properties of Series	(Due: Mar. 23)
8c	Wed. Mar. 17	Binomial Theorem	
9a	Fri. Mar. 19	Comparison Test	
9b	Mon. Mar. 22	p-Series	
	Wed. Mar. 24	In class Test 4 (Special Series)	

10a	Fri. Mar. 26	Convergence test: Ratio Test	Assignment 8 (Due: April 5)
10b	Mon. Mar. 29	Convergence test: Root-test	
10c	Wed. Mar. 31	Alternating series test	
	Fri. April 2 - 5	Easter Weekend	
11a	Wed. April 7	Power Series	Assignment 9 (Due: April 14)
11b	Fri. April 9	Convergence interval of Power Series	
11c	Mon. April 12	Taylor Series	
12a	Wed. April 14	TBD	
12b	Fri. April 16	In class Test 5 (Tests for convergence)	