

BIT1101 Mathematics II

Fall 2020

Instructor: Dr. Jabir M. Abdulrahman
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Office Hours: Mondays : 1:00– 2:00 pm

Textbook: **Linear Algebra and its Applications, 3rd Edition by
Mohammad R. Sadeghi & Jabir Abulrahman (Available at Haven Books)**

Prerequisite: The prerequisite is BIT 1100

Lectures: Tues., and Thur.: 11:35 to 12:55

Classes start on Wed. Sept. 9, 2020 ,and **classes end** on Fri. Dec 11 ,2020

Tutorials: Fri . 1:35-2:25 pm starting Fri. Sept.18,2020.

Evaluation:

40% Tests (The best 2 tests out of 3 tests)
60% Final Exam

Tutorial Work There will be an hour tutorial each week. Except for the three test weeks, the tutorials will be devoted to problem solving.

Term Tests

There will be three 50-minute tests held in the tutorial hours on:

Oct. 2, Oct.23 , Nov.20.

There will be **no make-up tests**. Students are allowed to miss one test without penalty. In case when a student misses more than one test due to illness (supported by a doctor note) jury duty or extreme personal misfortune, the term mark may be pro-rated. It is each student's responsibility to collect the marked tests from the TA. The test papers are normally distributed in the tutorial session following the date of the test.

Final Examination:

There will be a 3-hour exam scheduled during the usual exam period(Dec.12-23) . It is the responsibility of each student to be available at the time of the final examination. In particular, no travel plans for the examination period in April should be made until the examination schedule is published.

Calculators:

Only **non-programmable, non-graphing calculators** for the tests and the final examination.

Announcements:

You are responsible for keeping up with information announced sent to your connect email account. The following **course schedule** is approximate, and may change subject to the progress of the class. The material covered on each test will be announced in class one week before the test.

BIT 1101 [0.5 credit]

Mathematics II for IMD

Tailored for students in the interactive Multi-media Design program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.

Includes: Experiential Learning Activity

Precludes additional credit for BIT

1001<<https://calendar.carleton.ca/search/?P=BIT%201001>>, BIT

1201<<https://calendar.carleton.ca/search/?P=BIT%201201>>, ECON

1401<<https://calendar.carleton.ca/search/?P=ECON%201401>>, ECON

1402<<https://calendar.carleton.ca/search/?P=ECON%201402>>, MATH

1104<<https://calendar.carleton.ca/search/?P=MATH%201104>>, MATH

1107<<https://calendar.carleton.ca/search/?P=MATH%201107>>, MATH

1119<<https://calendar.carleton.ca/search/?P=MATH%201119>>, MATH

1152<<https://calendar.carleton.ca/search/?P=MATH%201152>>.

Lectures three hours a week, tutorial and laboratory one hour a week.

Tentative Course Schedule

The following week by week schedule is subject to change depending on the progress of the course

	Dates			Topics
1	Sept 9 –11		1.1 ,1.2	Systems of Linear Equations Row Reduction and Echelon Forms
2	Sept14 – 18	First tutorial	1.3,2.1,2.2	.Solving Systems of Linear Equations, Matrix Operations, Inverse of a Matrix and Linear Systems
3	Sept 21 – 25		2.3,3.1	Matrix Operations, Inverse of a Matrix and Linear Systems
4	Sept28 – Oct 2	Test 1	3.2.3.3	Elementary Matrices(without LU-Factorization), Introduction to Determinants,
5	Oct 5– 9		3.4,4.1	Properties of Determinants, Cramer’s Rule, Adjoint of a Matrix. Vectors
6	Oct 12– 16		4.2,4.3,4.4	Vector Operations, Vector \spaces and ,Subspaces
7	Oct 19 – 23	Test 2	4.4	Spanning Sets
8	Oct 26 – 30	Fall break		Reading Week
9	Nov 2 – 6		4.5,4.6,4.7	Basis and Dimension, Rank. Coordinates
10	Nov 9-- 13		5.1,5.2	Linear Transformations,
11	Nov 16 – 20	Test 3	5.3,App B	Matrices of Linear Transformation, Complex Numbers
12	Nov 23 – 27		6.1, 6.2,6.3	Eigen Values and Eigen Vectors
13	Nov 30 – Dec 4		6.4,7.1	Complex Eigen Values and Eigenvectors, Inner Products
14	Dec 7– 11		7.2	Orthogonal Bases, Final Exam Review

Students with disabilities: Students with disabilities requiring academic accommodations in this course are encouraged to contact the Paul Menton Center for Students with Disabilities (500 University Center) to complete the necessary forms. After registering with the Center, make an appointment to meet with me in order to discuss your needs at least two weeks before the first in-class test or CUTV midterm exam. This will allow for sufficient time to process your request. Please note the following deadlines for submitting completed forms to the PMC for formally scheduled exam accommodations: TBA for fall and fall/winter term courses, and TBA for winter term courses."

Academic Accommodation: You may need special arrangements to meet your academic obligations during the term because of disability, pregnancy or religious obligations. You can visit the Equity Services web site to view the policies and to obtain more detailed information on academic accommodation at <http://carleton.ca/equity/accommo>
The university has a COVID-19 FAQ with questions related to academics. If you haven't done so, please review the information on the FAQ at <https://newsroom.carleton.ca/coronavirus-covid-19/faq/#GR2>

Academic Accommodation: You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows: **Pregnancy obligation:** write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the [Student Guide](#)

**Suggested practice problems From (“Linear Algebra and its Applications” by
Mohammad R. Sadeghi and Jabir M. Abulrahman. 3rd Edition).**

Chapter 1

1.1: 1-25

1.2: 1-15

1.3: 1-17,21-25,29-32

Chapter 2

2.1: 1-13 ,15,17

2.2: 1-13 ,15-19

2.3: 1-13

Chapter 3

3.1: 1-15

3.2: 1-13

3.3: 1-13

3.4: 1-15

Chapter 4

4.1: 1-7

4.2: 1-5

4.3: 1-9

4.4: 1-9 , 11,13-17, 19,21, 23-27

4.5: 1-17 , 19, 21

4.6: 1-11, 13-17,19,21

4.7: 1-5

Chapter 5

5.1:1-7,10,11,13,15

5.2: 4-7

5.3: 1-7,9-15

Chapter 6

6.1: 1-15 , 18- 21, 23-27

6.2: 1-5,7-11

6.3: 1-5

6.4: 1-6

Chapter 7

7.1: 1-21 , 25-35, 38-41

7.2: 1-7, 9-12, 14-20

7.3: 1-7