

Math 201 - Fall 2017 (Lectures at 1 MWF & at 2MWF)**Instructor:** Professor Nazih Nahlus (Email: nahlus@aub.edu.lb)

Office Hours: MWF: 3— 4:15 in Bliss 322

Textbook: *Thomas' Calculus*, 13th Edition, by Thomas, Weir, and Hass.**Moodle:** I will use Moodle. My News Forum will be sent into your EMAIL Box

Title	Section	Assigned homework problems
Sequences	10.1	1, 5, 7, 10, 13, 16, 20, 21, 24, 28, 31, 32, 41-55, 65, 67, 78-82, 87, 88.
Infinite series	10.2	11,15,16,19, 23, 25, 28, 34, 36-40, 43, 44, 47- 68.
Integral test	10.3	6, 9, 10, 11, 16, 21, 22, 25- 28, 32-38, 43, 55, 56
Comparison tests	10.4	6-14,18, 25-32,34,42, 43,47, 56, 58, 60,63,65,67
Absolute convergence; Ratio and Root tests	10.5	8, 11, 18,14, 20, 22, 23, 25, 27-40.
Alternating series	10.6	8-10,14, 18, 21,22, 23, 26, 29,30,34, 36, 40, 43, 49-51.
Power series	10.7	4,8,10,14,18,20,22,25,29,31,33,34,36,39,41,42,53- 60.
Taylor series	10.8	3, 5, 11, 21, 23, 26, 29.
Error estimates	10.9	1, 5, 8-10,11-13,15, 18, 19, 20, 22, 23, 25, 28,35-50.
Binomial series	10.10	2, 3, 5, 12, 15-24, 53-55.

Exam 1 (25% of course grade) Saturday, September 30, 1:00 → 2:00 pm

Polar coordinates	11.3	1,3, 6,7, 9,11, 13, 15, 17, 19,21,23,25, 27, 28, 33-38, 63, 68
Graphing in polar coordinates	11.4	1, 3 ,5, 6, 21-24.
Cylinders and quadric surfaces	12.6	1-12
Functions of several variables	14.1	2, 6, 7, 8, 13-15, 22- 30.
Limits and continuity	14.2	3, 6, 17, 18, 27, 35, 36, 39, 41,44,46, 47,49 50,54- 58.
Partial derivatives	14.3	1, 7, 12, 17, 19, 21, 22, 25, 26, 30, 43, 49, 51,55.
The chain rule	14.4	1, 3, 4, 7, 8, 9, 25, 26, 27, 30, 31,32, 33, 35, 37.
Directional derivative	14.5	5, 7, 12, 16, 17, 20, 23, 26, 29, 31, 32,33.
Tangent planes	14.6	1, 3, 8, 9,12, 13, 17, 19-22.
Extreme values	14.7	1, 3, 7, 9, 12, 30, 31, 41, 49.

Exam 2 (25% of course grade) Saturday, October 28, 1:00 → 2:00 pm

Lagrange multipliers	14.8	1, 9, 11, 12, 17, 21, 23, 25,27.
Double integrals I	15.1	6, 7, 10, 11, 12, 15,16, 21, 22.
Double integrals II	15.2	9- 25, 33,35,37,39,41,43,45,47,49,51,83.
Area by double integration	15.3	1,3, 5, 7,9, 11,13,15,17, 19, 21.
Double integrals in polar	15.4	3,5,7,13,15,17,19,28,31,32,41.
Triple integrals	15.5	3, 5, 8, 9, 10, 13, 15, 17, 22, 25, 31, 33, 41, 43.
Moments and centers of mass	15.6	1,3, 5, 13.
Triple integrals in cylindrical and spherical	15.7	3, 5, 7, 9, 11,15, 17,21,23,27,29,31,34,37,43,50,61.
Substitutions in multiple integrals.	15.8	1, 3, 5, 7,9, 13,18,19, 20,21,23,24.
Line integrals (& Green's Theorem)	16.1	1-9, 11, 13, 15, 16, 17, 19, 21,23,25,26-28.

Final Exam comprehensive (50 % of course grade) TBA

----- **Math 201 is a very intensive course ! (Turbo speed!)**

1) Each 1 hour in Math 201 is equivalent to 3 hours of High school Math !

2) In fact, missing 1 lecture in Math 201 will create a lot a lot of confusion to you.

3) Math 201 is an interesting and demanding course requiring a strong High School background in Mathematics equivalent to Math 102. The best background is Bacc GS (General Science). So other students have to work much harder (OR take Math 102).

4) Study the big lecture very carefully.

It is far better to study daily --- to remember very well what has been said in class.

5) Solve most of the Syllabus suggested problems.

6) Go to your Weekly Recitation.

007) For Extra problems, solve some Previouses.

However, Quality supersedes Quantity!

Course learning outcomes for Math 201 :

At the end of the course, students will be able to:

- Define the sum of a series as a limit of a sequence
- Use tests to decide about the convergence of a series
- Use series to approximate functions
- Define differentiability for functions of several variables
- Find the derivative of a function in a given direction
- Maximize or minimize a function subject to a given constraint
- Define the integral of a function of several variables
- Use Fubini's theorem to evaluate double and triple integrals
- Apply double integrals (in cartesian & polar coordinates) to find areas & centers of "mass"
- Apply triple integrals (in cartesian, cylindrical and spherical coordinates) to find volumes & centers of mass
- Study substitutions in double & triple integrals.
- Line Integrals
- Green's Theorem (if time permits)

'AUB strives to make learning experiences as accessible as possible. If you anticipate or experience academic barriers due to a Disability (including mental health, chronic or temporary medical conditions), and in order to help establish reasonable accommodations and facilitate a smooth accommodations process, you are encouraged to contact the Accessible Education Office in West Hall 314'.