General Information:

Name of Course: # MATHEMATICS 2.

Course Code: EPE076ANEM
Semester: 2nd
Number of Credits: 4
Allotment of Hours per Week: 1 lecture, 2 practices
Evaluation: Exam (with grade)
Prerequisites: -

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Introduction, Learning Outcomes
The lectures give some elements of important mathematical techniques that are used in an architect's practice.
Upon completion of this course the student should be able to: **interpret,** and **put into practice**

- **a.** Plotting the graph of simple functions of one variable
- **b.** Differentiating functions
- **c.** Finding the antiderivative; calculating definite integrals
- **d.** Calculating surfaces and volumes using integration
- **e.** Calculating the centre of mass using integration.

General Course Description and Main Content:
Brief Syllabus: This lecture and practical based course aims to give architect students a solid mathematical basis through covering the following topics:

- Graphs of elementary functions
- Domain of a function, continuity, limits
- Differentiation of elementary functions
- Rules of differentiation
- Integral of elementary functions
- Rules of integration
- Application of integration and differentiation (area, volume, centre of mass)
- Quadratic surfaces

Students learn the basics of mathematics enabling them to interpret and understand architectural sciences and through solving elementary tasks they deepen their basic theoretical knowledge in the field of architecture.

Methodology:
The presentations give an introduction to important mathematical techniques of exercise solving and the basic theory of differentiation and integration. Equal emphasis is given to learning new mathematics and to learning how to construct and write down correct mathematical arguments. During the course student learn to apply matrix computations parallel to visualisation of transformations.

Mathematics 2. **Course Syllabus**
Course Code: EPE076ANEM Time: L Friday 12:00-12:45
Semester: Spring 2018/2019 2. P Friday 13:15-14:45
Location: PTE MIK,L A-216, P A-216

Schedule:
Study period in 15 weeks: 4 February – 17 May, 2019

1. Plotting the graph of basic functions; transformations
2. Inverse of functions; more advanced polynomial and exponential functions
3. Limit of sequences; derivative of basic functions
4. Rules of differentiation
5. Plotting graphs of functions using differentiation
6. (15 March: national holiday)
7. Revision before test; Midterm Test in the practice class.
8. Integral of basic functions; integration by parts
9. Using chain rule at integration
10. Spring break
11. (Good Friday: national holiday)
12. Application of integration: area, volume, centre of mass
13. Multivariate functions; surfaces; partial derivatives; double integral
14. Revision; Final Test in the practice class
15. Possible retake for both tests.

Further exams are possible in the exam period that starts on 17 December, 2018.

Attendance:
Attending all classes is required. In case of absence from more than 30% of the total number of lessons will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence.

Evaluation + Grading
Grading will follow the course structure with the following weight:

1. Tests 100%
2. Proposed exam grade: over 65 % during the study and correction period.
3. Oral exam in the exam period. A minimum of 55% is required to pass the exam.

Grading scale

Numeric Grade:	5	4	3	2	1
Evaluation in points:	89%-100%	77%-88%	66%-76%	55%-65%	0-54%

Students with special needs:
Students with special physical needs and requiring special assistance must first register with the dean of the Students Office. All reasonable requests to provide an equal learning environment for all students is to be assured.

Required reading and other materials:

Handout provided during the course;
http://www.columbia.edu/itc/sipa/math/calc_rules_func_var.html
http://tutorial.math.lamar.edu/Classes/CalcIII/QuadricSurfaces.aspx

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