**INSTRUCTOR(S)/TA(s) RECORD**

|  |  |
| --- | --- |
| Name | Hakan TOR |
| Email | hakan.tor@agu.edu.tr |
| TA(s) name | none |
| Email | - |
| Office Hours | Please contact me via e-mail for office hours to arrange a meeting. |

**COURSE RECORD**

|  |  |
| --- | --- |
| Code | MATH 122 |
| Name | Introductory Mathematics II |
| Hour per week | 4 |
| Credit | 4 |
| ECTS | 6 |
| Level/Year | Undergraduate / 1st Year |
| Semester | Spring |
| Type | Required |
| Classroom | Zoom and Pearson’s MyLab |
| Prerequisites | MATH 121 |
| Special Conditions | You should have   1. A stable computer to follow the asynchronous videos on YouTube 2. Access to CANVAS |
| Webpage | For this course I will be using CANVAS Course Website. You will access the course syllabus, course materials including lecture notes, links to related websites, assignments, articles, etc from a shared folder of OneDrive. The link of this shared folder will be shared on CANVAS. You are responsible to check Canvas on a regular basis. Do not forget to check your e-mail address frequently so that you can follow the announcements on Canvas. |
| Content | Integration and techniques, multivariable calculus, method of least squares and double integral |
| Objectives | The aim of this course is   * To teach Mathematical issues required in business and economics * To discuss how to use these mathematical topics in real-life business and economic problems |
| Learning Outcomes | By the end of the semester the students will  LO1: realize the need for applications of mathematical methods to global challenges in business, economy and social sciences; and understand the features of their application to engineering problems;  LO2: practice mathematical symbolic and numerical skill;  LO3: learn how to apply the studied mathematical methods to real-life business and economic problems. |
| Teaching Methodology | In response to the developing situation with covid-19, our course will be designed as a hybrid course, where part of it will be delivered in an online (synchronous via Zoom and asynchronous via MyLab(Pearson)) manner and part of it will be delivered in a face-to-face context using Hyflex classrooms in campus. This is also a student-driven course. It is your responsibility to participate actively in class discussions. You are not graded on whether your comment, remark and suggestions are correct/ useful or incorrect/ unuseful. We will be using various tools for active learning to take place. |
| Reading List | Barnett Calculus for Bus, Econ, Life Sciences & Social Scie 14e |
| Recommended Readings | Will be posted to CANVAS, when needed |
| Recommended Websites | My lecture videos on YouTube. The link will be posted to CANVAS weakly. |

**COURSE POLICIES**

|  |  |
| --- | --- |
| Late Submissions | All of the assignments are due at the scheduled dates and times. Please mark your calendar for all due dates and follow the announcements about the assignments. **Late assignments** **receive some penalty such as a 20% deduction for each day they are late.** |
| Communication | Please check your AGU e-mail for the announcements. All of the messages and announcements will be sent via CANVAS to your AGÜ e-mail addresses. Therefore, it is the responsibility of every student to read his/her official university email address and check the CANVAS regularly.  When contacting the instructor, please use your AGU account and include in the subject line the course code **Math112**. If this information is not included, your email may not be answered. |
| Attendance Policy | Students are expected to attend all asynchronous / synchronous times. It is your responsibility to come to class **on time**.  Students with medical reports, you need to submit the paperwork to your deanship of faculty in 5 days following the last day of the sick leave. (refer to: Section 26 at https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=36081&MevzuatTur=8&MevzuatTertip=5). Absence due to medical reasons cannot exceed 2 weeks.  **It is the responsibility of each student to keep track of how you are doing on class participation by checking with the instructor several times during the semester.**  For a detailed description of AGU attendance policy, please refer to the website at https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=36081&MevzuatTur=8&MevzuatTertip=5 section 25. |
| Academic Integrity | Students are obliged to refrain from acts that they know or, under the circumstances, have reason to believe, will impair the integrity of the university or others. Violations of academic integrity include, but are not limited to, cheating, plagiarism, unauthorized multiple submissions or copying and using somebody else’s paper/assignment.  Any of these violations will be investigated by the discipline committee and may cause expulsion of the student from the University. |
| Ethical Rules | * English should be used at all times to communicate with one another during the synchronous hours. * Please, respect the allotted times provided for breaks. * Distractive tools such as cell phones must be turned off and put away during the synchronous hours. * In synchronous hours, computers should not be used to surf on the web or conducting personal business. * Personal business should be done outside of the synchronous hours on your own time, where it does not interfere with the learning environment of your fellow students. * Please be prepared, having read, written, watched and studied the assigned lessons, articles, passages, or videos before the course sessions. * Please be ready to submit assignments on time * And most importantly please prepare to work cooperatively with other students.   *For the AGU Make-up policy, please refer to the website* <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=36081&MevzuatTur=8&MevzuatTertip=5>  *section 26.* |
| Cheating & Plagiarism | You are responsible for knowing the University policies on cheating and plagiarism. Not giving credit to a person for their intellectual work and passing it off as your own is stealing.  Specifically:   * Copying or allowing someone to copy your work on an exam, homework, or in class assignment is cheating. * Cutting and pasting material from the web or any other electronic source is plagiarism. * Copying and turning in the same assignment as someone else, from this class or from another class, is cheating. Unless explicitly told otherwise, you can discuss and problem- solve on homework together but the final product has to be your own – not just your own handwriting but your own way of explaining and organizing your ideas. * Making superficial changes (minor additions, deletions, word changes, tense changes, etc) to material obtained from another person, the web, a book, magazine, song, etc. and not citing the work, is plagiarism. The idea is the intellectual property, not the specific format in which it appears (e.g., you wouldn’t reword Einstein’s theory of relativity and imply that relativity was your own idea, would you?) * If you find material and it is exactly what you are trying to say, or you want to discuss someone’s idea, give the person credit and cite it appropriately. Don’t overuse citations and quotes: instructors want to know how you think and reason, not how someone else does. * If you have any questions or concerns about whether your behavior could be interpreted as plagiarism, please ask the assistants or instructors before you submit the work.   *For a detailed description of AGU policies, please refer to the website at* <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=36081&MevzuatTur=8&MevzuatTertip=5> |
| Flexibility | A tentative schedule for the entire semester is included in this syllabus. Although much thought and planning were put into the course schedule included in the syllabus, the schedule is tentative and subject to change as necessary to adapt to the specific needs of the class. Occasional departures from the schedule, such as additional readings, assignments, and activities, may be announced in class or via canvas during the semester. Therefore, it is each student’s responsibility to be in class, on time, and paying attention in order to keep up-to-date with whatever changes are made in the schedule. |
| Feedback | Your comments and suggestions are very important and will be taken into consideration during the course. Please do not hesitate to provide feedback about the course. You can give your feedback during the class, at office hours, or through e-mail. In addition, with the assistance of Teaching and Learning Center we will run mid-term and end of term feedbacks. |
| Text Book | Barnett Calculus for Bus, Econ, Life Sciences & Social Scie 14e |

**LEARNING ACTIVITIES**

|  |  |  |
| --- | --- | --- |
| **Activities** | **Number** | **Weight (%)** |
| Asynchronous Lectures | 14 | 30% |
| Face to Face Lectures | 14 | 30% |
| Exams | 3 | 25% |
| Homeworks | 14 | 15% |
| TOTAL | | 100% |

**ASSESSMENT**

|  |  |
| --- | --- |
| **Evaluation Criteria** | **Weight** (%) |
| Homeworks | 50% |
| Final Exam (Face to face) | 50% |
| Total | 100% |

For a detailed description of grading policy and scale, please refer to the website<https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=36081&MevzuatTur=8&MevzuatTertip=5> Section 27.

**Grading Scale:**

A 4,00 90-100 Pass

A- 3,67 87-89 Pass

B+ 3,33 83-86            Pass

B 3,00 80-82                Pass

B- 2,67  77-79                  Pass

C+ 2,33  73-76                  Pass

C 2,00  70-72                  Pass

C- 1,67  64-69                 Pass

D+ 1,33  56-63                 Pass

D 1,00 50-55                 Pass

F 0,00 0-49     Fail

**COURSE LOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Duration** (hour) | **Quantity** | **Work Load** (hour) |
| Asynchronous Lectures | 2 | 14 | 28 |
| Face to Face Lectures | 2 | 14 | 28 |
| Self – learning/work | 2 | 14 | 28 |
| Exams | 10 | 3 | 30 |
| Homeworks | 3 | 14 | 42 |
|  |  | **General Sum** | **156** |

**ECTS: 6** (Work Load/25-30) As an example the workload is 93hr. Top /25-30

**CONTRIBUTION TO PROGRAMME OUTCOMES\***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
| LO1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 |
| LO2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 |
| LO3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| LO4 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |

\* Contribution Level: 0: None, 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

**My YouTube Chanel**

**LINK:**

**SCHEDULE OF LECTURES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| **Slot1: 8:00-8:45** | **Math 122.01**  **(BA008)** |  |  |  |  |
| **Slot2: 9:00-9:45** | **Math 122.01**  **(BA008)** |  |  |  |  |
| **Slot3: 10:00-10:45** | **Math 151.03 (BA008)** |  |  |  |  |
| **Slot4: 11:00-11:45** | **Math 151.03 (BA008)** |  |  |  |  |
| **Slot5: 12:00-12:45** |  |  |  |  |  |
| **Slot6: 13:00-13:45** |  | **Math 112.01 (BA012)** |  |  |  |
| **Slot7: 14:00-14:45** |  | **Math 112.01 (BA012)** |  |  | **Math 151.03 (F0D11)** |
| **Slot8: 15:00-15:45** |  |  |  |  |  |
| **Slot9: 16:00-16:45** |  |  |  |  |  |
| **Slot10: 17:00-17:45** | **Math 112.01 (AS)** |  |  |  |  |
| **Slot11: 18:00-18:45** | **Math 112.01 (AS)** | **Math 151.03 (AS)** |  |  | **Math 122.01**  **(AS)** |
| **Slot12: 19:00-19:45** |  | **Math 151.03 (AS)** |  |  | **Math 122.01**  **(AS)** |

**WEEKLY SCHEDULE**

|  |  |  |
| --- | --- | --- |
| **W** | **Topic** | **Outcomes** |
| 1  Feb. 21-25 | * 1. Antiderivatives and Indefinite Integral  |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1 |
| 2  Feb. 28- March 4 | * 1. Integration by Substitution  |  |  | | --- | --- | | Activity: Zoom and In-Class Lectures |  | | LO2 |
| 3  March 7-11 | * 1. Differential Equations; Growth and Decay   Continuous Compound Interest (Revisited)   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO2, LO3 |
| 4  March 14 - 18 | * 1. The Definite Integral  |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1, LO2 |
| 5  March 21 - 25 | * 1. The Fundamental Theorem of Calculus      |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1, LO2 |
| 6  March. 28 -Apr. 1 | * 1. Area Between Curves   Applications: Income Distribution, Gini Index   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO2 |
| 7  Apr. 4 - 8 | 6.1 Integration by Parts  6.2 Other Integration Methods  Using a Table of Integrals, Substitution and Integral Tables, Reduction Formulas   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1, LO2 |
| 8  Apr. 11 - 15 | 6.3 Applications in Business and Economics  Probability Density Functions, Continuous Income Stream, Future Value of a Continuous Income Stream, Consumers’ and Producers’ Surplus   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO3 |
| 9  Apr. 18 - 22 | 6.4 Integration of Trigonometric Functions  Application   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1, LO2 |
| 10  Apr. 25-29 | 7.1 Functions of Several Variables  7.2 Partial Derivatives   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1, LO2 |
| 11  May 2–6 | Spring Break and Feast of Ramadan   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | |  |
| 12  May 9–13 | 7.3 Maxima and Minima  7.4 Maxima and Minima Using Lagrange Multipliers   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1, LO2, LO3 |
| 13  May 16–20 | 7.5 Method of Least Squares  Least Squares Approximation and Applications   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO1, LO2 |
| 14  May 23–27 | 7.6 Double Integrals over Rectangular Regions   |  |  | | --- | --- | | Activity: Asynchronous Lectures, Problem set |  | | LO2 |
| 15  May 30 - June. 3 | 7.7 Double Integrals over More General Regions  Review and Catch-up | LO2 |
|  | Activity: Asynchronous Lectures, Problem set |  |
| 17  June 6 - 15 | Final Exam Week |  |