COMP125: Programming with Python (Summer 2021)

Course Description
This course emphasizes computational thinking and programming using Python. Students are expected to gain a solid foundation in algorithmic thinking and structured programming, and perform basic, common computational tasks easily and efficiently.

The course examines the fundamentals of storage, input and output, control structures, functions, sequences and lists, file I/O, numerical computation, visualization, and object-oriented programming.

Instructor:
Buket Yüksel, buyuksel@ku.edu.tr

Course Textbook
Starting out with Python, 4th edition, by Tony Gaddis, Pearson Addison-Wesley

KU Credits: 3.00
ECTS Credits: 6.00

Course Learning Outcomes (CLOs)
• Gain a solid foundation in algorithmic thinking and structured programming.
• Perform basic, common computational tasks easily and efficiently.
• Examine fundamentals of data storage, input and output, control structures, functions, sequence and lists, file I/O, numerical computation, visualization and object-oriented programming.

Online Teaching/Learning
• Course will be taught online. Course communication will be through Blackboard, e-mail, online face-to-face meetings, online office hours, and Blackboard Discussion Board.

• **Lectures:** Online face-to-face lectures using Zoom. Zoom links will be available on Blackboard. Lectures will be automatically recorded by Panopto and recordings will be made available after the lecture.

• **Labs:** There will be a lab session every week. Labs will be dedicated to collaborative coding exercises. Students will be asked to submit a lab exercise every week.

Assessment Method
- Lecture Attendance (5%)
- Labs (10%): There will tentatively be 6 labs. You are expected to attend at least 4 lab sessions.
- Homework (20%): There will tentatively be 6 graded homework assignments.
- Quizzes (40%): There will tentatively be 6 quizzes. Lowest midterm grade will be dropped when calculating your midterm average.
- Final exam (25%): Comprehensive programming exam to be scheduled during the final week

There will not be make-ups for quizzes and homeworks.However, lowest grade will be removed for quiz, homeworks, and labs.

Tools and Infrastructure
We will use Anaconda, which comes with Python, popular Python packages, and development environments such as Spyder and Jupyter Notebook. You can download and install Anaconda from: https://www.anaconda.com/products/individual depending on your operating system (Windows, Linux, or MacOS).
Please download Anaconda and familiarize yourself with Python and Spyder as soon as possible.

Tentative Schedule
- Welcome and introduction
- Designing and developing a program
- Variables, expressions, control flow
- Loops
- Functions
- Strings and string operations
- Data structures: lists, dictionaries, sets, and tuples
- File I/O
- Data parsing
- Nested data structures
- Exceptions and exception handling
- Recursion
- Numpy: arrays, functions, linear algebra & engineering applications
- Matplotlib: plotting and visualization
- Object-oriented programming
- Inheritance

All students are expected to comply with the Koç University Student Code of Conduct (https://apdd.ku.edu.tr/en/academic-policies/student-code-of-conduct/).
Cheating will not be tolerated. All homework and exam submissions will be checked for similarity and plagiarism.

COMP 132 (01) ADVANCED PROGRAMMING

Fall 2021

1. Course Information

Instructor:	Öznur Özkasap, oozkasap@ku.edu.tr
KU Credits:	3.00
ECTS Credits:	6.00
Prerequisite(s):	Prerequisites: COMP 100 orCOMP. 131 or 130 consent of the instructor
Class Location & Meeting Times:	SOS B08 - Monday, Wednesday 17:30-18:40
PS (Yes/No):	No
DS (Yes/No):	No
Lab (Yes/No):	Yes
Language of Instruction:	English
Office Hours:	Monday 16:00-17:00 (or by appointment)

2. Course Description

Advanced programming techniques and large scale programming. Inheritance and Type Hierarchies. Polymorphism. Object-oriented Programming. Code reuse. Graphical User Interfaces. Advanced class and template libraries. Introduction to low-level languages. Pointers and references. Resource management: Dynamic storage allocation, memory management. Virtual functions.

3. Course Overview

Object oriented programming using Java. Data types, expressions, control statements, strings, arrays. Classes, objects, methods, overloading, variable scope, memory. Recursion. Inheritance, polymorphism, abstract classes, interfaces, nested classes, anonymous classes. Exception handling. Strings and regular expressions. File I/O. Generic collections. Generic classes and methods. Lambdas and streams. Event-driven programming. Multithreading.

4. Course Learning Outcomes (CLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	gain extensive knowledge and understanding of advanced object-oriented programming concepts for software development
2	apply object-oriented programming techniques such as inheritance, polymorphism, interfaces and generics
3	design and develop software for real-life problems using advanced programming concepts

5. Assessment Methods

Method	Description	Weight %
Laboratory	Programming Labs	30.00
Midterm Exam	Written	15.00
Quiz	In class: Blackboard based tests and Participation	15.00
Project	Programming Project	10.00
Final Exam	Programming	30.00

Total:	100.00

6. Instructional Material and Learning Resources

- Java How to Program, Edition: 11
  Author: Deitel
  Publisher: Pearson (Year: 2018)
  Material Type: Textbook
  Material Status: Required

- https://courses.ku.edu.tr/comp132
  Material Type: Website
  Material Status: Required

- Active Use of Course Page on Blackboard: https://ku.blackboard.com/

- KOLT Tutoring: http://kolt.ku.edu.tr/

7. Course Schedule

Meeting Times	Subject

8. Student Code of Conduct and Academic Grievance Procedure

Student Code of Conduct

Statement on Academic Honesty with Emphasis on Plagiarism

Academic Grievance Procedure

9. Course Policies

10. Other

Grading policy: (Adjustment possible due to pandemic conditions)

- Programming Laboratory:
  The Laboratory is an important part of the course and it is mandatory. 2x50 minutes lab sessions are continuous and is considered ONE LAB. Your lab work will be graded during the lab. There will be around 10 graded lab sessions. Only the health report or dean reports will be accepted as excuses. Maximum 2 labs can be excused. If you attend less than 1/2 of a LAB, it will not be graded. See the course web site for details.
  If your lab average is below 40 (out of 100) you will fail this class (letter grade of F) regardless of your final exam grade!
- Midterm Exam:
  The makeup will be given within 3-4 days for those who have valid excuse
- In Class Quizzes:
  These are short tests. No makeup. They are part of the class participation. No makeup.
- Term Project (programming):
  There will be one programming project in the second half of the course.
- Final examination:
  The final exam contains a test part, and a programming part. The test part is closed notes/slides/book exam. During the programming part, the course text book and the lectures slides are allowed. (Subject to change depending on the pandemic conditions).

Any duplication in any programming assignments or exams will be regarded as cheating and will

be prosecuted to the fullest extent allowed by university policy regarding academic dishonesty.

Writing programs is the only way to learn how to program, therefore the lab/homework assignments and programming part of the exams are very important learning tools and constitute a significant portion of your grade. The problems in lectures, labs, homeworks and exams would be similar in nature, thus lecture and lab attendance and the time you spend on homeworks and problems would have a large impact on your performance.

Text Book

We will closely follow the required textbook.

Tools, infrastructure:

We use Eclipse Integrated Development Environment (IDE) for Java (8 or newer) in the lecture and labs, and github classroom. It is strongly recommended that you install eclipse/Java on your personal computer. IT will help in case you need help with the installation. See instructions in the course web page for installing these tools. Familiarize yourself with them by going through the tutorials installed with the tool as soon as possible.

These IDEs and compilers have been installed on PCs in computer labs as well (accesible by login in vlab.ku.edu.tr) .

Schedule and Subjects (During the course, slight changes are possible)

- Introduction and overview of Java, Classes, Objects
- Control Statements, Expressions
- Methods - a deeper look: scope, overloading,call stack, parameter passing, recursion
- Arrays, Multidimensional Arrays, ArrayList
- Object Oriented Programming, Deeper look into Classes, Inheritance
- Polymorphism, Interfaces, Abstract Classes
- Exception Handling
- Strings, Regular Expressions
- Files, I/O Streams
- Generic Collections
- Functional Programming with Java - Lambdas and Streams
- Generic Classses
- Java GUI Programming - Event Driven Programming
- Multithreading, Concurrency

COMP 202 (01) VERİ YAPILARI VE ALGORİTMALAR

Fall 2022

1. Course Information

Instructor:	Deniz Yüret, dyuret@ku.edu.tr
KU Credits:	3.00
ECTS Credits:	6.00
Prerequisite(s):	Ön Koşul: (COMP. 106 veya INDR 201) ve (COMP. 131 veya COMP 130 veya COMP 132)
Class Location & Meeting Times:	SNA B172 - Monday, Wednesday 11:30-12:40
PS (Yes/No):	No
DS (Yes/No):	No
Lab (Yes/No):	No
Language of Instruction:	English
Office Hours:	TBA

2. Course Description

Basic data structures, algorithms, and their computational complexity. List, stack, queue, priority queue, map, tree, balanced tree, hash table, heap, skip list, trie, graph. Basic search, selection, sorting, and graph algorithms. Recursion.

3. Course Overview

1. To teach about fundamental data structures: lists, stacks, queues, trees, balanced binary search trees, priority queues, hash tables, graphs.
2. To introduce you to basic searching, sorting, and graph algorithms.
3. To provide a basic understanding of how and where different data structures are employed.
4. To enable you to implement different data structures.

4. Course Learning Outcomes (CLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	Determine appropriate data structures and algorithms to solve problems efficiently
2	Employ fundamental data structures in your algorithms
3	Implement yourself and use others' implementations of widely-employed data structures
4	Analyze time and space complexity of algorithms

5. Assessment Methods

Method	Description	Weight %
Participation	In class exercises and homework	20.00
Midterm Exam		40.00
Final Exam		40.00
	Total:	100.00

6. Instructional Material and Learning Resources

- Introduction to Algorithms, Edition: 3 (ISBN: 9780262033848)
  Author: Cormen, Thomas, et al.
  Publisher: MIT Press (Year: 2009)
  Material Type: Textbook
  Material Status: Required
  Additional Notes: https://mitpress.mit.edu/books/introduction-algorithms
- Active Use of Course Page on Blackboard: No Service Available
- KOLT Tutoring: No Service Available

7. Course Schedule

Meeting Times	Subject

8. Student Code of Conduct and Academic Grievance Procedure

Student Code of Conduct

Statement on Academic Honesty with Emphasis on Plagiarism

Academic Grievance Procedure

9. Course Policies

Students are encouraged to work together as long as NOTHING WRITTEN GETS EXCHANGED.In class participation and exercises are very important, in-class work will be collected.

10. Other

Please check the course website at http://courses.ku.edu.tr/comp202 for the course schedule and additional information. Please send class related emails to `comp202@ku.edu.tr`.

ENGR 421 (01) INTRODUCTION TO MACHINE LEARNING

Fall 2022

1. Course Information

Instructor:	Mehmet Gönen, mehmetgonen@ku.edu.tr
KU Credits:	3.00
ECTS Credits:	6.00
Prerequisite(s):	Prerequisite: MATH 107 and 203 and ENGR 200 AND COMP 110 or 125 or 131
Class Location & Meeting Times:	SNA A21 - Monday, Wednesday 10:00-11:10
PS (Yes/No):	No
DS (Yes/No):	No
Lab (Yes/No):	Yes
Language of Instruction:	English
Office Hours:	Monday 13:00-14:10 and Wednesday 11:30-12:40, face-to-face at ENG 118 or online at Google Meet (https://meet.google.com/tux-bkzg-ugi)

2. Course Description

A broad introduction to machine learning covering regression, classification, clustering, and dimensionality reduction methods; supervised and unsupervised models; linear and nonlinear models; parametric and nonparametric models; combinations of multiple models; comparisons of multiple models and model selection.

3. Course Overview

Machine learning uses interdisciplinary techniques such as statistics, linear algebra, optimization, and computer science to create automated systems that can process large volumes of data to make predictions or decisions without explicit human intervention. This course (a) introduces students to a broad range of machine learning algorithms to prepare them for research/industry applications, (b) shows them how to combine multiple algorithms to obtain better results, and (c) shows them how to assess the performance of the algorithms.

4. Course Learning Outcomes (CLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	comprehend the core differences in analyses enabled by regression, classification, clustering, and dimensionality reduction algorithms.
2	select the appropriate machine learning algorithms for real-life applications.
3	assess the model quality in terms of relevant performance/error metrics for each application.
4	apply machine learning algorithms to real-life problems and optimize the models learned.

5. Assessment Methods

Method	Description	Weight %
Homework	6 Homeworks (Lowest grade will be dropped)	20.00
Midterm Exam	2 Midterm Exams	40.00

Final Exam	Final Exam	40.00
	Total:	100.00

6. Instructional Material and Learning Resources

- Introduction to Machine Learning, Edition: 4th (ISBN: 978-0-262-358064)
  Author: Ethem Alpaydın
  Publisher: The MIT Press (Year: 2020)
  Material Type: Textbook
  Material Status: Required
  Additional Notes: https://mitpress.mit.edu/9780262358064/introduction-to-machine-learning/
- Active Use of Course Page on Blackboard: https://ku.blackboard.com/
- KOLT Tutoring: No Service Available

7. Course Schedule

Meeting Times	Subject
OCT 3	Introduction (Chapter 1)
OCT 4	NO LAB
OCT 5	Supervised Learning (Chapter 2)
OCT 10	Parametric Methods (Chapter 4)
OCT 11	LAB 01: Parametric Methods
OCT 12	Parametric Methods (Chapter 4)
OCT 17	Multivariate Methods (Chapter 5)
OCT 18	LAB 02: Parametric Methods
OCT 19	Linear Discrimination (Chapter 10)
OCT 24	Linear Discrimination (Chapter 10)
OCT 25	LAB 03: Linear Discrimination
OCT 26	Linear Discrimination (Chapter 10)
OCT 31	Multilayer Perceptrons (Chapter 11)
NOV 1	LAB 04: Linear Discrimination
NOV 2	Multilayer Perceptrons (Chapter 11)
NOV 7	Multilayer Perceptrons (Chapter 11)
NOV 8	LAB 05: Multilayer Perceptrons
NOV 9	Nonparametric Methods (Chapter 8)
NOV 14	NO LECTURE
NOV 15	NO LAB
NOV 16	NO LECTURE
NOV 21	Nonparametric Methods (Chapter 8)
NOV 22	LAB 06: Nonparametric Methods
NOV 23	Decision Trees (Chapter 9)
NOV 28	Decision Trees (Chapter 9)
NOV 29	LAB 07: Decision Trees
NOV 30	Kernel Machines (Chapter 14)

DEC 5	Kernel Machines (Chapter 14)
DEC 6	LAB 08: Kernel Machines
DEC 7	Kernel Machines (Chapter 14)
DEC 12	NO LECTURE
DEC 13	NO LAB
DEC 14	NO LECTURE
DEC 19	Dimensionality Reduction (Chapter 6)
DEC 20	LAB 09: Kernel Machines
DEC 21	Dimensionality Reduction (Chapter 6)
DEC 26	Clustering (Chapter 7)
DEC 27	LAB 10: Dimensionality Reduction
DEC 28	Clustering (Chapter 7)
JAN 2	Combining Multiple Learners (Chapter 18)
JAN 3	LAB 11: Clustering
JAN 4	Combining Multiple Learners (Chapter 18)
JAN 9	Design and Analysis of Machine Learning Experiments (Chapter 20)
JAN 10	LAB 12: Combining Multiple Learners
JAN 11	Design and Analysis of Machine Learning Experiments (Chapter 20)

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9. Course Policies

(i) Lecture sessions will be recorded and shared at Blackboard. (ii) If you miss one of the midterms with a valid excuse, your final grade will be counted as your missing grade.

10. Other

COMP 301 (01) PROGRAMMING LANGUAGE CONCEPTS

Spring 2024

1. Course Information

Instructor:	Tevfik Metin Sezgin, mtsezgin@ku.edu.tr
KU Credits:	3.00
ECTS Credits:	6.00
Prerequisite(s):	Prerequisite: COMP. 200 or COMP 201 and COMP 202
Class Location & Meeting Times:	
PS (Yes/No):	No
DS (Yes/No):	No
Lab (Yes/No):	Yes
Language of Instruction:	English
Office Hours:	Wed 15:00-16:00 or by appointment

2. Course Description

Programming languages concepts and paradigms. Functional programming. Abstraction, encapsulation, type systems, binding, parameter passing, run-time storage, memory, stack, heap, interpreters. Implementation strategies for interpreters. Data representation, sets, syntax, semantics, behavior specification and implementation.

3. Course Overview

Programming languages (i.e. C++, Java, Ada, Lisp, ML, Prolog), concepts and paradigms. Syntax, semantics. Abstraction, encapsulation, type systems, binding, run-time storage, sequencers, concurrency, control. Providing examples from functional, object-oriented and logic programming paradigms.

4. Course Learning Outcomes (CLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	Gain fluency in core programming concepts including data representation, procedural representation.
2	Understand grammars, environment models, parsing, evaluation, parameter passing.

5. Assessment Methods

Method	Description	Weight %
Quiz	10 quizzes	10.00
Project	Project	20.00
Midterm Exam	Midterm	25.00
Final Exam	Final	30.00
Participation	Participation	5.00
Laboratory	PS Sessions	10.00
	Total:	100.00

6. Instructional Material and Learning Resources

- Essentials of Programming Languages Third Edition
  Author: Friedman & Wand
  Material Type: Textbook
  Material Status: Recommended

- Structure and Interpretation of Computer Programs
  Author: Abelson , Sussman & Sussman
  Material Type: Textbook
  Material Status: Recommended

- Active Use of Course Page on Blackboard: https://ku.blackboard.com/

- KOLT Tutoring: http://kolt.ku.edu.tr/

7. Course Schedule

Meeting Times	Subject

8. Student Code of Conduct and Academic Grievance Procedure

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9. Course Policies

The course will use catalog grading scale.All percentages are subject to change within a margin of 5% during the semester. In addition, up to 5% additional bonus points may be added. Total number of quizzes, hence points per quiz will depend on the progress of the class as a whole, although you should expect about 10 quizzes.

10. Other

All KU academic policies including those on plagiarism, cheating, and online recording apply.

Software Engineering

DESCRIPTION

Review of methods and tools used in software development. Object-oriented design and open software architectures. Requirements analysis, design, implementation, testing, maintenance, and management. Engineering applications.
This course assumes that you are familiar with object-oriented programming using Java. If you feel you have weaknesses in this area, for instance, if you scored a C or below in Comp 132 or Comp202, the first few weeks of the course are a good time to brush up on your skills. The class will build upon knowledge of these fundamentals and will emphasize object-oriented analysis and design, and good programming discipline. A software development project to be carried out in groups forms the backbone of the course. We will see a software product through the project lifecycle, from analyzing customers' requirements to design, modeling, implementation, and testing. We will have design reviews for each major phase of your project. There will be regular meetings with each project group and a final presentation for your product at the end of the semester.

COURSE LEARNING OUTCOMES

- Develop an understanding of the key concerns and challenges of engineering a large software system.
- Develop an understanding of the issues of requirements, specifying, architecting, designing, and testing a software system in order to provide modularity, adaptability, and maintainability.
- Analyze, design, and develop software using object-oriented analysis and design, and design patterns.
- Develop teamwork management skills.

OTHER

Required textbook:

Applying UML and Patterns, Edition: 3E, Larman Pearson Education.

Head First Design Patterns, Freeman, Robson, Bates, Sierra O'Reilly.

Reading (recommended):

- Program Development in Java: Abstraction, Specification, Liskov and Guttag Addison-Wesley.
- Object-Oriented Software Engineering, Bruegge&Dutoit
- Java Concurrency: http://docs.oracle.com/javase/tutorial/essential/concurrency/
- Refactoring: Improving the Design of Existing Code, Fowler
- More material will be added as lectures covered relating to Git, Agile, Testing, Advanced Java topics, etc.

Grading Policies

Assessment: (Tentative, there could be up to -+5 changes).

- Class Participation %3 // %2 code review, %1 demo day.
- Midterms %15+15
- Group Project %67

Class Participation: Attendance will be taken. Some of the project discussions will be conducted in the class as well. You are expected to attend classes at least 70% to get full points. There will be no

makeup for missed attendances beyond that. 70% 3 points, 60% 2 points, 50% 1 point, less than 50% 0 points.

2 points bonus for in-class discussions (subject to the instructor's evaluation of class participation, useful participation in discussion forums...).

Participation in interactive discussions during the class/online meetings might be used also for student participation evaluation.

We will be using **Discussion Board** for anything related to the course. Subscribe to the discussion forums to be notified by email if someone posts or responds. **DO NOT send emails**, answering emails in a timely manner is not guaranteed.

Midterms: There will be two midterms. The midterms are closed-book exams and will be conducted face-to-face. There will be only one makeup exam during the last week of the semester for those who missed a midterm due to health reasons (the report is required). It will replace the missed ones. The format of the makeup exam will be given at least one week before the exam - not necessarily in the same format as the midterms.

Final: There is no final exam in this course. It is a project-based course.

Project organization and grading:

You are required to form project groups of size GROUP_SIZE. GROUP_SIZE is FIVE students (only a few of four or six class size is not multiple of five).

- If you are not part of a team by the third week of the semester, you will be put in a team randomly.
- Similarly, if you form a team of size less than GROUP_SIZE, you will get new members (chosen randomly).
- During the semester, if some of your team members drop the course, the remaining members are still responsible for the work, and no compensation will be given. Choose your team wisely.
- If the class size is not multiple of GROUP_SIZE, some groups might have +/-1 members (randomly assigned if no team volunteers).

Group members are expected to take part in every aspect of the project, and your grade for each phase will be based on your contribution to the group's work. **If you fail the group project (i.e. score less than 60 out of 100 points), you will fail the class regardless of your grades on the midterm.**

The project requires the students to work together in a team from the beginning to the end. You should plan on committing your time and effort to teamwork. Teams that do not work together but individually produce very poor results and score poorly! **Teamwork, teamwork, teamwork!** Keep this in mind. Make sure that you perform well in your team. The peer evaluations submitted by your peers will affect your project scores. The details of peer evaluation will be announced during the project.

- The weekly meetings will be graded based on group work and individual contributions. The objection to weekly meeting grades must be done within a week after the grade is announced. No objections will be considered after that.
- Teams or team members should report to the instructor as soon as possible if there are problems in the team that will affect teamwork.
- The health report should be more than one week to be counted as an excuse for the project's weekly participation. Maximum **TWO** meetings will be excused for health reports.

Weekly Project Meeting Schedule: We will have around 10 meetings. Each meeting will be conducted preferably online involving all the group members and the TA. The meeting time will be scheduled so that every group member and the TA can meet at the same time. We try to schedule the meetings towards the end of the week. The meeting time **does not have to be during lab hours**. If no time can be found that fits all, it has to be during lab time.

We will schedule online meetings/breakout rooms for each group and the TA.

Your project will have **intermediate milestones with corresponding deadlines**. Work submitted late will receive no credit. **This is a strict policy**. If you can't complete the work by the deadline, reduce the scope of the work you have to do. You have to submit a coherent set of documents and/or software by the deadline even if it fulfills only part of the requirements for the deadline.

Further details of project administration, schedule, and deadlines will be announced after the class roster is finalized.

Tool tutorials: Throughout the semester, you will need to use software engineering and project management tools such as UML modeling tools, version management tools (GIT), and testing tools such as JUnit. Links to material on these tools will be available on the course website. Please familiarize yourself with these tools as soon as possible.

Note: the grading weights for midterms and the project is **tentative**, and may change **slightly** depending on their relative difficulties.

Tentative Schedule

- Introduction to software engineering and iterative development.
- Requirements analysis and capture. Use cases, UML use-case diagrams. Non-functional requirements. Domain models and UML.
- Sequence diagrams. Operation contracts. UML class, object, and interaction diagrams.
- Architectural Design.
- Objects with responsibilities. GRASP design patterns.
- GRASP: Polymorphism, Pure Fabrication, Indirection, Protected Variation. GoF Design Patterns.
- GoF Design Patterns: Adapter, Factory, Singleton
- GoF Strategy, Composite, Facade, Observer.
- Concurrent/Multithreaded Programming in Java
- Concurrent/Multithreaded Programming in Java, Activity Diagrams, State Diagrams.
- Data abstraction, Type hierarchies, polymorphic abstraction, Specification.
- Specification, testing, and verification.Test-driven development, Unit testing, Refactoring.
- More on GoF patterns.
- Term Project discussions.
- Term Project demos.

COMP 304 (01) OPERATING SYSTEMS

Fall 2024

1. Course Information

Instructor:	Hakan Ayral, HAYRAL@KU.EDU.TR
KU Credits:	3.00
ECTS Credits:	6.00
Prerequisite(s):	Prerequisite: COMP 201 or consent of the instructor
Class Location & Meeting Times:	SOS B10 - Tuesday, Thursday 10:00-11:10
PS (Yes/No):	Yes
DS (Yes/No):	No
Lab (Yes/No):	No
Language of Instruction:	English
Office Hours:	TBA

2. Course Description

Introduction to operating systems concepts, process management, memory management, virtual memory, input-output and device management, file systems, job scheduling, threads, process synchronization, deadlocks, interrupt structures, case studies of operating systems.

3. Course Overview

An operating system is an essential part of any computer system. The purpose of this course is providing a clear understanding of the concepts that underlie operating systems. Fundamental concepts and algorithms that will be covered are based on those used in existing commercial operating systems. The aim is to present these topics in a general setting that is not tied to one particular operating system. Throughout the course, examples that pertain to the most popular operating systems such as Unix, Linux and Windows XP will be studied as well.

4. Course Learning Outcomes (CLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	Fundamental concepts in operating systems
2	Develop and understand concurrent programs and synchronization
3	Evaluate the efficiency aspect of using system resources and resource management
4	Understand relationships between operating system and computer architecture
5	Learn necessary concepts for memory management and file system management

5. Assessment Methods

Method	Description	Weight %
Project	Three Projects	45.00
Midterm Exam	Written Exam	20.00
Final Exam	Written Exam	25.00
Attendance	Participation and Attendance	10.00

Total:	100.00

6. Instructional Material and Learning Resources

- Operating System Concepts, Edition: 10 (ISBN: 1118129385)
  Author: A. Silberschatz, Galvin, Gagne
  Publisher: Wiley
  Material Type: Textbook
  Material Status: Required

- Linux Kernel Development, Edition: 3 (ISBN: 0672329468)
  Author: Robert Love
  Publisher: Addison-Wesley Professional
  Material Type: Textbook
  Material Status: Recommended

- Active Use of Course Page on Blackboard: https://ku.blackboard.com/
- KOLT Tutoring: http://kolt.ku.edu.tr/

7. Course Schedule

Meeting Times	Subject
WEEK 1	Introduction, operating systems concepts and strategies, operating system structure organization, multiprogramming, brief history of operating systems, system calls, user and kernel modes, system boot
WEEK 2-3	Process Management: Process concept, process creation and termination, Unix processes, process tree, operations on processes, inter-process communication, cooperating processes, producer-consumer shared- memory solution
WEEK 4	CPU Scheduling: concepts, criteria, CPU scheduling algorithms, algorithm evaluation and performance, real-time CPU scheduling, Linux CPU scheduler
WEEK 5-6	Process Synchronization: race conditions, critical section problem and their solutions, semaphores, monitors, locks, busy waiting vs blocking, deadlock and starvation classical problems, condition variables, synchronization examples
WEEK 7	Thread Management: threads, multithreading models, POSIX Threads API, case studies of operating systems
WEEK 8	Deadlocks: system model, characterization, deadlock prevention, deadlock avoidance, deadlock detection and recovery
WEEK 9	Memory Management: memory allocation, internal and external fragmentation, swapping, paging, page table structure, segmentation, operating system examples
WEEK 10	Virtual Memory: demand paging, page fault, page replacement algorithms, allocation of frames, thrashing, working set model, operating system examples
WEEK 11	I/O Systems: mass storage structure, disk scheduling, file systems, file system implementation, protection and security, case studies
WEEK 12	Distributed file systems, Google File System, Hadoop File System
WEEK 13	Distributed Systems and Networking: network operating systems, client/server model, multithreaded server models, Unix system calls for client/server communication
WEEK 14	Influential Operating Systems: Atlas, MULTICS, IBM OS/360, MS- DOS, Mach, Linux, Android

8. Student Code of Conduct and Academic Grievance Procedure

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Academic Grievance Procedure

9. Course Policies

All deadlines are final. Late homework and project submissions will receive 0 credit.Course Elements: There will be projects and homework related to concepts covered in class. Besides, there will be a midterm and a final exam. During class/PS hours, quizzes may be given, in order to help students better understand the material and follow the course attentively. Quizzes will not be graded.Final makeup exam and remedial exam will take place on the same day at the same time. A student can take either of them but not both. Midterm makeup exam is on the last week of the instructions at the PS hour. Midterm makeups are not cumulative.

10. Other

- Attendance and Policy: Attendance and participation will be graded. The students are required to attend classes on time. At the time of the lecture, attendance will randomly be taken in all face-to-face classes.
- Only students whose long-term online attendance requests have been approved by the University Executive Council (UEC) will be able to to attend live classes remotely synchronously (online). These students are defined on KUSIS and will be allowed access by IT only to their relevant courses.
- A student who does not need the approval of the UEC, however and who wants to attend the lesson online for a short time, will not be able to access the link even if it is suitable for his/her instructor. These students will not be able to participate in live lessons and will only have access to the recorded if the instructor approves lectures.
- The synchronous sessions are recorded (audiovisual recordings). The sole authority as regards the recording process belongs to Koç University. Koç University students can attend the synchronous sessions regardless of their course enrollment. The students are not required to keep their cameras on during class.
- The audiovisual recordings, presentations, readings, and any other works offered as the course materials aim to support remote and online learning. They are only for the personal use of the students enrolled in the relevant course. Further use of course materials other than the personal and educational purposes as defined in this disclaimer, such as making copies, reproductions, replications, submission, and sharing on different platforms including the digital ones or commercial usages are strictly prohibited and illegal.
- The persons violating the above-mentioned prohibitions can be subject to the administrative, civil, and criminal sanctions under the Law on Higher Education Nr. 2547, the By-Law on Disciplinary Matters of Higher Education Students, the Law on Intellectual Property Nr. 5846, the Criminal Law Nr. 5237, the Law on Obligations Nr. 6098, and any other relevant legislation.
- The academic expressions, views, and discussions in the course materials including the audio-visual recordings fall within the scope of the freedom of science and art."

COMP 305 (01) ALGORITHMS&COMPLEXITY

Fall 2023

1. Course Information

Instructor:	Deniz Yüret, dyuret@ku.edu.tr
KU Credits:	3.00
ECTS Credits:	6.00
Prerequisite(s):	COMP 202 and (ENGR 200 or ENGR 201 or MATH 211)
Class Location & Meeting Times:	SNA A52 - Tuesday, Thursday 16:00-17:10
PS (Yes/No):	Yes
DS (Yes/No):	No
Lab (Yes/No):	No
Language of Instruction:	English
Office Hours:	TBA

2. Course Description

Advanced topics in algorithms, and their computational complexity. Amortized complexity analysis. Randomized algorithms. Greedy algorithms. Dynamic programming. Linear programming. Advanced graph algorithms. Turing machines and models of computation. NP-completeness reductions.

3. Course Overview

This course assumes that students know how to analyze simple algorithms and data structures from having taken comp202. It introduces students to the design, correctness proofs and run time and space analyses of computer algorithms.

4. Course Learning Outcomes (CLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	Describe the divide-and-conquer, dynamic programming, greedy, and incremental improvement paradigms and explain when an algorithmic design situation calls for each. Recite algorithms that employ these paradigms. Synthesize algorithms in the appropriate paradigm and be able to analyze their performance. Argue their correctness using inductive proofs and invariants.
2	Explain what amortized running time is and what it is good for. Describe the different methods of amortized analysis (aggregate analysis, accounting, potential method). Perform amortized analysis.
3	Employ indicator random variables and linearity of expectation to perform the analyses. Recite analyses of algorithms that employ this method of analysis.
4	Compare between different data structures. Pick an appropriate data structure for a design situation. Be able to augment data structures to solve algorithmic problems.
5	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate. Synthesize new graph algorithms and algorithms that employ graph computations as key components, and analyze them.
6	Explain P vs NP vs NP-hard vs NP-complete. Know what an approximation algorithm is, and the benefit of using approximation algorithms. Be familiar with some approximation algorithms, including algorithms that are PTAS or FPTAS. Analyze the approximation factor of an algorithm.

5. Assessment Methods

Method	Description	Weight %
Participation	In class exercises and homework	20.00
Midterm Exam		40.00
Final Exam		40.00
	Total:	100.00

6. Instructional Material and Learning Resources

- Introduction to Algorithms, Edition: 4 (ISBN: 9780262046305)
  Author: Cormen, Thomas, et al.
  Publisher: MIT Press (Year: 2022)
  Material Type: Textbook
  Material Status: Required
  Additional Notes: https://mitpress.mit.edu/books/introduction-algorithms
- Active Use of Course Page on Blackboard: No Service Available
- KOLT Tutoring: No Service Available

7. Course Schedule

Meeting Times	Subject

8. Student Code of Conduct and Academic Grievance Procedure

Student Code of Conduct

Statement on Academic Honesty with Emphasis on Plagiarism

Academic Grievance Procedure

9. Course Policies

Students are encouraged to work together as long as NOTHING WRITTEN GETS EXCHANGED.In class participation and exercises are very important, in-class work will be collected.

10. Other

Please check the course website at http://courses.ku.edu.tr/comp305 for the course schedule and additional information. Please send class related emails to comp305@ku.edu.tr.

Vrije Universiteit Amsterdam - 2024-2025

Text Mining for AI

Course Code	XB_0085
Credits	6
Period	P5
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. I. Markov
Examiner	dr. I. Markov
Teaching Staff	dr. I. Markov, prof. dr. P.T.J.M. Vossen
Teaching method(s)	Lecture, Seminar

Course Objective

Knowledge and understanding: at the end of the course, students will be familiar with basic knowledge of some of the core aspects of Natural Language Processing, Linguistics and Text Mining: rule-based systems, machine learning, deep learning, text classification, sentiment extraction, entity recognition and topic modeling of texts.

Applying knowledge and understanding: students will be able to implement NLP processing systems and modules and evaluate these.

Making judgements: students will have a basic understanding of the ethical and societal implications of the developments in NLP.

Communication skills: students will be able to write a scientific reports about a specific research question in a group of students.

Learning skills: students will be trained in acquiring a set of complex NLP and text mining topics in a restricted period of time, come up with a research question and perform the necessary (empirical) research.

Basic concepts from Linguistics and foundational concepts from Natural Language Processing. Skills to use, apply and critically assess text mining techniques. Adapt and build text mining techniques to specific target domains and applications.

Course Content

Basic concepts from Linguistics and foundational concepts from Natural Language Processing. Skills to use, apply and critically assess text mining techniques. Adapt and build text mining techniques to specific target domains and applications.

Additional Information Teaching Methods

Theoretical lectures and working group sessions

Method of Assessment

Multiple choice exam on theory 60% and the group project report 40%. Both the multiple choice exam and the group project are eligible for resit.

Entry Requirements

Recommended background knowledge

Programming in Python, using Github

Vrije Universiteit Amsterdam - 2024-2025

Networks and Graphs

Course Code	X_401010
Credits	6
Period	P2
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. Y. Nazari MSc
Examiner	dr. Y. Nazari MSc
Teaching Staff	dr. Y. Nazari MSc, dr. A. Mehrabi
Teaching method(s)	Written partial exam, Seminar, Lecture

Course Objective

After taking this course, student will be able to formally reason about graphs and use them to solve fundamental computational tasks.

The course introduces basics of graph theory and graph algorithms. In particular, you will be able to:

- Mathematically analyze basic properties of graphs
- Apply graph algorithms in computational tasks such as shortest paths and spanning trees
- Analyze performance of such algorithmic tasks

Learning goals:

G1: Learning basic concepts in graph theory. (Knowledge and understanding)

G2: Learning and reasoning about graphs and their properties (Knowledge and understanding)

G3: Familiarity with standard graph algorithms (Knowledge and understanding)

G4: Analyze performance and correctness of different algorithms (Knowledge and understanding) (Making judgements)

G5: Applying fundamental graph algorithms for solving computational tasks (Applying knowledge and understanding)(Communication)

G6: Developing problem solving skills by using algorithmic techniques such as dynamic programming and greedy (Applying knowledge and understanding)

Course Content

Many real world problem involve interactions on a network, which is mathematically represented by "graphs". Graphs are fundamental objects appearing many computational tasks all across computer science (e.g. computer networks, data analysis, databases, machine learning, etc). This course focuses on graph theory, graph algorithms, and their applications. We reason about graphs mathematically and along the way develop further skills to formally analyze algorithms.

The topics include basic concepts and techniques in graph theory and graph algorithms:

- Intro to discrete math and review of proof techniques
- Graph theory concepts
- Directed graphs
- Important graph classes (bipartite graphs, Eulerian graphs, Hamiltonian graphs, random graphs)

- Connectivity
- Shortest path algorithms
- Minimum spanning tree algorithms
- Cuts and flows

Additional Information Teaching Methods

There are two main lectures (at VU campus) per week. Moreover, there is one exercise class per week. Attendance is not mandatory but bonus points will be given based on active participation in exercise classes.

Method of Assessment

The final grade is determined by two written exams: The midterm and the final exam. The midterm accounts for 40 percent and the final exam accounts for 60 percent of the grade. Active participation in interactive exercise sessions will result in a bonus of up to %5 of the total grade. In these sessions students will work in groups to solve problems.

Literature

Lecture slides will be provided and textbook is not required, however the following textbooks are recommended:

Graph Theory, by J. A. Bondy , U. S. R. Murty (Hardcover ISBN: 978-1-84628-969-9) [available online at VU library]

Introduction to Algorithms, Fourth Edition, by Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein (ISBN: 978-0262046305)

Additional Information Target Audience

Bachelor Computer Science (year 2)

Recommended background knowledge

Data Structures and Algorithms, Logic and Sets, Statistical methods.

Vrije Universiteit Amsterdam - 2024-2025

Computer Organization

Course Code	XB_40009
Credits	6
Period	P4
Course Level	100
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. T. De Matteis
Examiner	prof. dr. ir. A. Iosup
Teaching Staff	dr. T. De Matteis, prof. dr. ir. A. Iosup
Teaching method(s)	Written partial exam, Seminar, Lecture

Course Objective

1. Explain the basic concepts, historical objectives, and modern functions of digital computers. (Knowledge and understanding)

2. Describe the basic architecture and operation of digital computers. (Knowledge and understanding)

3. Use proficiently binary data representation, number representation, and arithmetic and data conversion. (Knowledge and understanding) (Applying knowledge and understanding)

4. Explain at a proficient level the architecture and operation of each of the main components of a digital computer: the basic processing unit, the hierarchical memory system, the I/O system, and the interconnectionsystem. (Knowledge and understanding) (Communication)

5. Explain at a basic level various system mechanisms for building faster single-node systems, such as pipelining and caching, and large-scale systems. (Knowledge and understanding) (Communication)

6. Demonstrate proficiency in implementing basic operations of digital computers in realistic scenarios. (Knowledge and understanding) (Applying knowledge and understanding) (Lifelong learning skills)

7. Analyze at a basic level the tradeoffs inherent to the design of digital computers, concerning among others performance (simple modeling), scalability (Amdahl's Law), availability, energy consumption, and cost. (Applying knowledge and understanding) (Making judgements) (Lifelong learning skills)

Course Content

Computers are everywhere, in industry, academia, governance, and many other activities that impact our society. But what are they? How do they work? Why do they currently work the way they do? How to analyze them and to improve their performance?

Matching the requirements of the IEEE/ACM CS Curriculum, topics for this course include: the architecture, the structure, the operation, and the interconnection of computer components into computer systems, including modern architectures, data representation, assembler programming, virtual machines, the structure of translators, compiling and loading, basic operating systems concepts (I/O, interrupt handling, process).

Additional Information Teaching Methods

Lectures 4h/week.

Tutorial (Instructie) 2h/week.

Practical work (Lab) 4h/week, from week 3.

Self-study in teams.

This course uses dr. Iosup's method for gamification.

Method of Assessment

(Mandatory) basic lab assignments. (Turn in to SAs)

(Mandatory) final exam, written, multiple-choice.

(Optional) in-class exercises, oral and written.

(Optional) mid-term exam, written, multiple-choice. The results of the mid-term exam count only if the final exam is also taken by the student,

and only if it increases the final grade of the student.

(Optional) self-study booklet and exam pack. (Turn in to TA)

(Optional) advanced lab assignments. (Turn in to SAs)

All partial results (including the lab, and the mid-term and final exams) are only valid during one academic year.

The end grade is the total number of points accumulated across all assessment possibilities scored divided by 1000.

It is possible to score a perfect 10 as the final grade.

The different course activities are graded as follows:

1) Exam, multiple-choice questions (max 7,500 points)

2) Self-study assignments, including exam preparation (max 2,000 points)

3) Lab assignments (max 4,000 points)

4) In-class activity (max 50 points per session)

5) Various bonus activities.

Students do not have to complete every course activity but are free to choose their own path of advancement.

There is only one resit opportunity for the exam.

Literature

Books (students can pick any):

- Carl Hamacher and Zvonko Vranesic, Computer Organization, 6th edition, McGraw-Hill Education, 2011. ISBN-13: 978-0073380650

- David A. Patterson and John L. Hennessy, Computer Organization and Design: The Hardware/Software Interface, 5th edition, Morgan Kaufmann, 2013. ISBN-13: 978-0124077263

Additional Study Materials:

- Course and Lab guides are also provided via Canvas.

Additional Information Target Audience

Bachelor Computer Science (year 1).
Bachelor Mathematics (year 3)

Custom Course Registration

The course includes two types of group activities: lab and self-study.

Group enrolment takes place in Canvas. In the past few years, students could choose to attend lab sessions on one of two separate days. Choices are made available at the start of the course.

Recommended background knowledge

Mathematics students should have taken at least one prior course in computer programming.

Vrije Universiteit Amsterdam - 2024-2025

Project Big Data

Course Code	X_400645
Credits	6
Period	P6
Course Level	300
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. A. Zocca
Examiner	dr. A. Zocca
Teaching Staff	dr. A. Zocca
Teaching method(s)	Study Group, Lecture

Course Objective

After completing this course, a student can:

- import, clean, transform, filter, and explore data in Python
- store and retrieve semi-structured data in and from various kinds of database
- create appropriate and well-formatted visualizations and tables
- fit statistical models and train basic machine learning models
- address a research question using a large dataset and report on their findings

Course Content

This course aims to integrate various aspects of modern data science and teach the fundamentals of working with big data. Topics include working with structured data; statistical data analysis; visualization of data; preparing data for processing; storing unstructured data; fitting statistical models; training basic machine learning models. Python is used throughout this hands-on project-based course.

Additional Information Teaching Methods

Lectures and tutorial sessions

Method of Assessment

Hand-in individual assignments plus a group project, which entails an oral presentation and a final written report. The weights will be specified on Canvas; the weighted average needs to be 5.5 or higher. There is no resit for this course.

Entry Requirements

Additional Information Target Audience

2BA

Recommended background knowledge

Programming experience in any language is necessary

COMP 306: Database Management Systems

Koç University, Fall 2023

Course Description

This is an undergraduate course on databases and database management systems (DBMSs). The course will cover conceptual and practical aspects of DBMSs, including database design, data models, query languages (especially SQL and relational algebra), database normalization and schema refinement, transaction management, scheduling, concurrency control, indexing, and recent trends in databases.

Instructor: M. Emre Gürsoy – www.memregursoy.com – emregursoy@ku.edu.tr

KU Credits: 3

Language of Instruction: English

Lecture Time & Location: MoWe 10:00-11:10 AM, location SOS B10

PS Sections: You should be enrolled in exactly one of the following PS sections:

- PS-A (Friday 2:30-3:40 PM, SNA A44)
- PS-B (Friday 10:00-11:10 AM, SNA B173)

Pre-requisites: COMP 202 (Data Structures and Algorithms). This pre-requisite will be enforced, i.e., I will not give consent to students who wish to take COMP 306 without having passed COMP 202 beforehand.

Course Textbook: No mandatory textbook, but the following books are helpful:

- "Fundamentals of Database Systems" by Elmasri and Navathe
- "Database Management Systems" by Ramakrishnan and Gehrke

Note that your primary learning resources should be course lectures and slides. There may be changes in notation or formalization from one textbook to another, or from one edition of a textbook to another. Also, we may not cover the entire set of topics in all chapters. Thus, students are responsible from the material that is taught in class, in the way that it is taught.

Teaching Assistants (TAs): TBA

Office Hours: Time TBA, location my office (SNA Z27). TAs will also hold office hours. All office hour information will be announced after the semester begins.

List of Topics

- Introduction
- Entity-relationship model (E-R model)
- Relational model
- E-R model to relational model conversion
- Relational algebra

- SQL (Structured Query Language)
- Functional dependencies, normal forms (1NF, 2NF, 3NF, BCNF) and normalization
- Transaction management, ACID properties, scheduling, serializability
- Concurrency control: locking, 2PL, deadlocks, multi-granularity locking
- Indexing (hash-based and tree-based indexing), B+ trees
- [Tentative] Query processing and optimization
- Introduction to NoSQL: key-value stores, graph databases, document-oriented databases, columnar databases

Grading (Tentative)

Midterm Exams	–	48%
Final Exam	–	30%
Homework Assignments	–	12%
Group Project	–	10%

Based on the circumstances, these percentages are subject to change (at most 5%) at the instructor's discretion.

Midterm Exams: We will have two midterms, each worth 24%, total 48%.

Final Exam: The final exam will be held during the finals' week. It will be worth 30% of the course grade.

Homework Assignments: There will be several homework assignments throughout the semester (expected: 4, max: 5). They will be announced and collected via Blackboard. Homework assignments must be completed **individually**, i.e., no collaboration.

Group Project: The group project will begin in the second half of the semester. Students will form groups (group size will be announced, but we expect ~4 students per group). Each group will pick one potential application area of DBMSs and develop a DBMS-powered application. The project **must** use a DBMS in its back end. The choice of front end is left to you, e.g., you may decide to have a web interface or a desktop app or mobile app depending on what is appropriate. The project should be designed and implemented in a way that makes good use of the concepts learned in this course.

The group project is mostly focused on applying DBMSs in practice. Throughout the project, you will: (1) design your application and database, (2) populate your database with real/realistic data, (3) integrate complex queries into your system, and (4) demonstrate your system as a working, professional prototype.

Some project ideas are below, more will be announced later. New and innovative ideas are welcome. You may discuss the suitability of your project idea with the instructor.

- Movie tracking and rating site (e.g., mini-IMDB)
- Supermarket management app (products, employees, customers, purchases, …)
- University management app (e.g., mini-KUSIS with students, courses, instructors, enrollment, …)
- Library management app (books, authors, customers, borrowing, …)
- E-commerce or online retail site (e.g., mini-Amazon)

Homework Policies

For late submission of homework assignments, we have the following policy:

- Up to 10 minutes late: -5% penalty
- 10 minutes to 1 hour late: -20% penalty
- More than 1 hour late: submission is not accepted

Assignments submitted more than 1 hour after the deadline will not be accepted unless the instructor's permission is obtained ahead of time with a valid excuse. Please do not ask for an extension close to a deadline or after a deadline that has passed. In order to be fair to students who submitted the assignment on time, such requests are almost always rejected.

In general, it is the student's responsibility to ensure that his/her homework submission is complete and includes all the files that the student was intending to submit. For hand-written submissions, it is again the student's responsibility to make sure that his/her handwriting is legible, and the scan/photo has sufficient quality so that the homework can be graded.

Academic Honesty Policy

Students may only collaborate in the Group Project. Remaining parts of the course must be completed individually. Violation of this rule constitutes academic dishonesty.

Academic dishonesty is a serious violation of the trust upon which an academic community depends. By taking this course, students acknowledge that they must fully comply with Koç University's Student Code of Conduct (https://apdd.ku.edu.tr/en/academic-policies/student-code-of-conduct/). Violations of Student Code of Conduct, including cheating and plagiarism, will be reported to the University Disciplinary Committee.

Cheating will not be tolerated! Cheating includes but is not limited to: working jointly with another student on an assignment/exam, sharing your assignment answers with others, looking at another student's assignment/exam, having someone else do an assignment/exam for you (paid or not), making copies of homework and exam questions, distributing homework and exam questions and answers to others.

[*IMPORTANT, READ ME*] Exam Policy

As of the beginning of the semester, all exams are planned to be conducted physically, in-person. Unless there is a university-wide rule which enforces online exams for all courses and all students, I will not offer an online exam to any individual student. There will be no exceptions to this rule. All students who are taking this course are assumed to have read and understood this rule.

Make-Up Policy

If a student misses a midterm or final exam with a valid excuse, he/she can apply for a make-up. For excuses to be valid, they must be accepted by Koç University and communicated with the instructor through official channels. Emergencies must be properly documented, and medical reports must be approved by Koç University Health Center. Do not send health reports directly to the instructor.

A single, joint make-up exam will be given at the end of the semester, which will cover all topics in the course. Regardless of which exam they missed, all students who are eligible for a make-up will take this exam. The grade they receive from the make-up will count in place of the exam they originally missed.

[*IMPORTANT, READ ME*] Attendance and Recording Policy

This policy is subject to change according to announcements made by YÖK and/or Koç University.

Lectures:

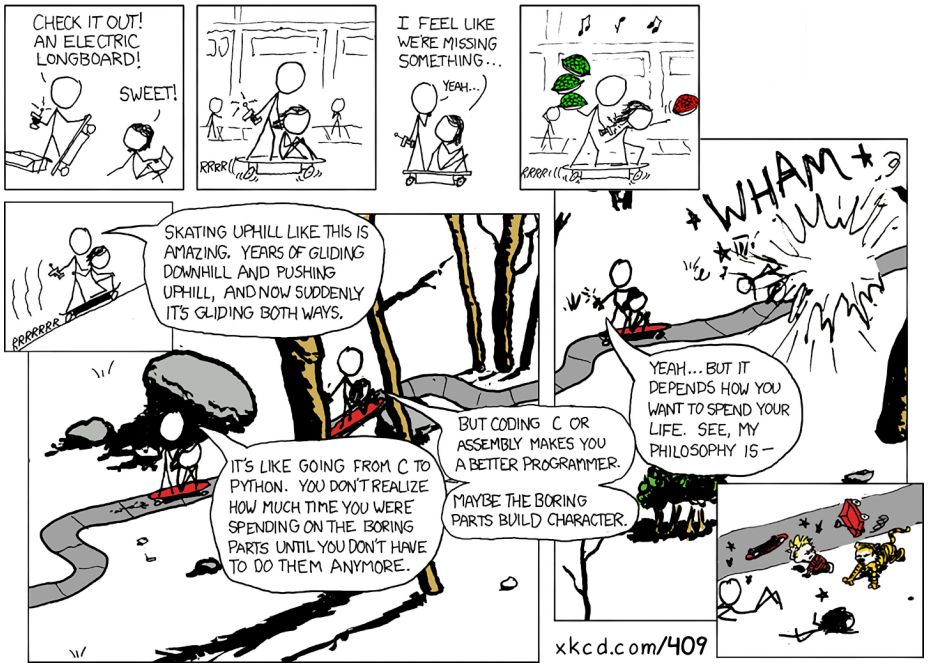
- Lectures will be held from the assigned classroom. In most lectures, slides and whiteboard will be used simultaneously.
- Zoom participation will be allowed. However, the amount of interaction and support offered to Zoom participants may be limited. I highly recommend not relying on Zoom as a regular lecture participation option.
- Lecture attendance will not be graded. Exception: During the semester, if less than 15-20% of the students are attending lectures, we may introduce grade penalties or rewards to incentivize attendance.
- Lecture recordings will be shared via Panopto. I highly recommend not relying on Panopto recordings instead of attending lectures.

PS sections:

- PS sections will be held from the assigned classrooms. PSs will involve solving exercises about lecture topics (e.g., solving past years' exam questions) or hands-on experience with DBMS tools.
- PS attendance will not be graded.
- PS recordings will not be shared, so you must participate in PSs to obtain the exercises and solutions.

COMP201 - Computer Systems & Programming, Spring 2022
Department of Computer Engineering, Koç University

Aykut Erdem • aerdem@ku.edu.tr • tel +90 (212) 338-1173
Lectures: Monday, Wednesday at 10:00-11:10 (SOS B07).
Labs: Friday at 16:00-17:40 (Lab A), 12:00-13:40 (Lab B) (ENG B19)



Electric Skateboard (Double Comic) · A web comic from xkcd, by Randall Munroe

COURSE DESCRIPTION

This course gives a solid understanding of the principles and abstractions used in computer systems and machine programs using C. Towards this aim, it covers a broad range of topics, providing students with an in-depth perspective and programming experience regarding the basic topics of C language and how programs are formed and executed at the microprocessor-level.

Upon the completion of COMP201, student will be able to

1. demonstrate proficiency in writing computer programs that require effective memory management,
2. gain a deep knowledge of the compilation flow and runtime behavior of C programs,
3. have a clear understanding of computer arithmetic in a modern computing system,
4. recognize the relationship between a computer program and its assembly translation, and
5. gain a general sense of working in a Unix environment as a power user, getting familiar with shell tools, version control systems, compilers, debuggers, profilers.

Prerequisites
The prerequisite for COMP201 is COMP 132. You should have a solid programming background to appreciate the technical aspects regarding the relation between C and Assembly programs.

Guiding Principles for Teaching and Learning in the Time of Covid-19
(adapted from the adjusted syllabus statement by Prof. Brandon Bayne, UNC Chapel Hill)

1. Nobody signed up for this.
    - Not for the sickness, not for the social distancing, not for the sudden end of our collective lives together on campus.
    - Not for an online class, not for teaching remotely, not for learning from home, not for mastering new technologies, not for varied access to learning materials.
2. The humane option is the best option.
    - We are going to prioritize supporting each other as humans,
    - We are going to prioritize simple solutions,
    - We are going to prioritize sharing resources and communicating clearly.
3. We will foster intellectual nourishment, social connection, and personal accommodation.
    - Synchronous lectures held online to learn together and combat isolation.
    - Additional asynchronous content for diverse access, time zones, and contexts.
    - Online meetings with the course staff at regular office hours.
4. We will remain flexible and adjust to the situation.
    - Nobody knows where this is going and what well need to adapt.
    - Everybody needs support and understanding in this unprecedented moment.

Webpage The webpage for COMP201 is at `https://aykuterdem.github.io/classes/comp201`.

Communication
The course webpage will be updated regularly throughout the semester with lecture notes, programming and reading assignments and important deadlines. All other communications will be carried out through Blackboard. Additionally, we will use Slack for more immediate communication and updates.

Reference Books

- Randal E. Bryant and David R. O'Hallaron, Computer Systems: A Programmer's Perspective, Third Edition, Pearson, 2016
- The C Programming Language, Kernighan and Ritchie
- Nick Parlante, Essential C, Stanford CS Library, 2003
- Nick Parlante, Julie Zelenski and others, Unix Programming Tools, Stanford CS Library, 2001
- Anish Athalye, Jon Gjengset and Jose Javier Gonzalez Ortiz, The Missing Semester of Your CS Education, MIT, 2020

Grading Policy
The grading for COMP201 will be based on

- 10 labs (your lowest 2 scores dropped, no make-up) (24%),
- 6 programming assignments (33%) (Assignment0 3%, the others 6% each),
- a midterm exam (21%), and
- a final exam (22%).

Lectures
The lectures will be delivered in a synchronous hybrid format via both in person lectures broadcast simultaneously over Zoom. These lectures will be recorded and be made available via Blackboard. The attendance will not be taken at the lectures, but the students are strongly encouraged to be actively participate in class discussions and interact with the instructor and the other students. You will be held responsible for all material presented at the lectures.

Labs
This semester there will be **in total 10 labs**. While lectures will mostly introduce high-level concepts, these labs will supply practical sessions to familiarize you the Unix/Linux development tools and give you hand-on experiences in the context of course topics. **Each lab will have two graded parts.** The first one will be a simple practice problem which we ask you to complete and submit it until the end of the session. The second problem will be released later in the evening, and you are required to solve it in three days (until Monday night). Please don't forget that **late submissions are not allowed** in each assignment. Also note that **your lowest 2 scores will be dropped, hence there will be no make-up** for the lab sessions.

Assignments
There will be **1 warm-up and 5 programming assignments.** You are encouraged to discuss with your classmates about the given assignments, but these discussions should be carried out in an abstract way. **All work on assignments have to be done individually.** In short, turning in someone else's work, in whole or in part, as your own will be considered as *a violation of academic integrity*. Please note that the former condition also holds for the material found on the web as everything on the web has been written by someone else.

You may use up to 7 *grace days* (in total) over the course of the semester for the assignments. That is you can submit your solutions without any penalty if you have free grace days left. Any additional unapproved late submission will be punished (1 day late: 20% off, 2 days late: 40% off) and **no submission after 2 days will be accepted.**

Exams
There are a midterm exam and a final exam, which will include mostly open-ended fill-in-the-blanks or short answer type questions.

Good luck, and have fun!

Detailed Schedule

W	*Date*	*Topic*	*Notes*
1	2/14	Introduction, Course logistics, A tour of C programs	B&O 1
	2/16	Bits & Bytes, Representing and Operating on Integers	B&O 2.2-2.3
		Assg0 out: *Getting Started with Unix and C*	
	2/18	**Bootcamp:** Programming with C and Git basics	
2	2/21	Bits and Bitwise Operators	B&O 2.1
	2/23	Floating point	B&O 2.4
		Assg0 in, Assg1 out: Manipulating Bits	
	2/25	**Lab 1:** The Linux Shell	
3	2/28	Chars and Strings in C	K&R 1.9, 5.5, Appx B3
	3/2	More Strings, Pointers	K&R 1.6, 5.5, Essential C 3
	3/4	**Lab 2:** Bits, Ints and Floats, Vim	MIT MS Editors (Vim)
4	3/7	Arrays and Pointers	K&R 5.2-5.5, Essential C 6
	3/9	The Stack and The Heap	K&R 5.6-5.9, Essential C 6
		Assg1 in, Assg2 out: Strings in C	
	3/11	**Lab 3:** Strings in C and Valgrind	
5	3/14	Realloc, Memory Bugs	K&R 5.6-5.9, Essential C 6
	3/16	`void *`, Generics	K&R 5.6-5.9, Essential C 6
	3/18	**Lab 4:** Arrays, Pointers, and GDB	
6	3/21	Function Pointers	K&R 5.11
	3/23	`const`, Structures	K&R 6.1-6.7
		Assg2 in, Assg3 out: Heap Management	
	3/25	**Lab 5:** Structs	
7	3/28	Compiling C programs	Stanford Unix Programming Tools 1
	3/30	Intro to x86-64, Data Movement	B&O 3.1-3.4
	4/1	**Lab 6:** Working with multiple files, writing Makefiles	
8	4/4	Arithmetic and Logic Operations	B&O 3.5-3.6
	4/6	x86-64 Control Flow	B&O 3.6.1-3.6.2
		Assg3 in, Assg4 out: Defusing a Binary Bomb	
	4/8	**Lab 7:** Machine Programming with Assembly	
9	4/11	*Winter Break*	
10	4/18	More Control Flow	B&O 3.6.3-3.6.8
	4/20	x86-64 Procedures	B&O 3.7
	4/22	*No lab this week*	
		Midterm Exam	
11	4/25	Data and Stack Frames	B&O 3.8-3.9
	4/27	Security Vulnerabilities	B&O 3.10
		Assg4 in, Assg5 out: Buffer Overflow Bugs	
	4/29	**Lab 8:** Runtime Stack	

W	*Date*	*Topic*	*Notes*
12	5/2	*Ramadan Holiday*	
	5/4	*Ramadan Holiday*	
	5/6	*No labs this week*	
13	5/9	The Memory Hierarchy	B&O 6.1-6.3
	5/11	Cache Memories	B&O 6.4-6.7
	5/13	*No labs this week*	
14	5/16	More Cache Memories	B&O 6.4-6.7
	5/18	Optimization	B&O 5
	5/20	**Lab 9:** Memory organization	
15	5/23	Linking	B&O 7
	5/25	Managing The Heap	B&O 9.9-9.10
		Assg5 in	
	5/27	**Lab 10:** Code optimization	

COMP 491: Computer Engineering Design
Spring 2025

The objectives of this course are to transfer theoretical knowledge of computer engineering students into real-life project development, design, implementation, and management; to improve communication, teamwork, and presentation skills; and to discuss and consider ethics and intellectual property related issues. As learning outcomes, by the end of the semester, students will be able to

- define a real-life engineering problem,
- break-down project development process in a scheduled project proposal,
- design solutions for a real-life engineering problem,
- organize a cooperative effort for the management of the project,
- develop an implementation for a real-life engineering problem, and
- demonstrate a functional form of the final project outcome.

Assessment Components and Grading:

Engineering design project proposal + seminar attendance: 20%
Project progress and meeting attendance: 30%
Poster presentation and project demo: 25%
Final project report and demo: 25%
Modules (watch videos, take tests): otherwise fail

Course Site:

You can access the course-related material at https://learn.hub.ku.edu.tr/.

- Project proposal report, progress reports, poster, and final report/code submissions.
- Templates will be available (regularly check the announcements).
- Modules (videos and test) will be available on KUHub Learn.
- Discussion forum will be available. You can use it for project partner search and sending questions of general interest.

Academic Integrity and using AI Tools:

This course follows the Koç University Policy on Academic Integrity and the Rules and Regulations of the Higher Education Council. Violations of these rules in the project implementation or the reports will be punished subject to these policies.

Everybody should carefully read and understand the Koç University Policy Statement Regarding the Use of Artificial Intelligence Tools. Other uses will be considered as academic disintegrity and subject to disciplinary actions. https://kolt.ku.edu.tr/artificial-intelligence/

SEMESTER DETAILS:

Academic coordinator:	Çiğdem Gündüz Demir, cgunduz@ku.edu.tr Office hours: by appointment
TA:	TBA Office hours: by appointment
Course credits:	4 (ECTS: 8)
Prerequisites:	Comp 202 and Comp302, or consent.

ELEC 201 (01) SIGNALS AND SYSTEMS

Fall 2023

1. Course Information

Instructor:	Alper Demir, aldemir@ku.edu.tr
KU Credits:	4.00
ECTS Credits:	8.00
Prerequisite(s):	Prerequisite: MATH 107 & MATH 106
Class Location & Meeting Times:	SOS B10 - Monday, Wednesday 11:30-12:40
PS (Yes/No):	Yes
DS (Yes/No):	No
Lab (Yes/No):	No
Language of Instruction:	English
Office Hours:	By appointment.

2. Course Description

Introduction to discrete and continuous time signals and systems. Time-domain signal representations, impulse response of linear time-invariant (LTI) systems, and convolution. Frequency domain signal representations, frequency response of LTI systems, and Fourier analysis. Filtering of continuous and discrete time signals. Sampling and discrete time processing of analog signals. Laplace-transform domain analysis of continuous-time LTI systems. Exercises using MATLAB.

3. Course Overview

This course introduces mathematical techniques used in the design and analysis of signals and systems, in preparation for electrical engineering fields such as circuits, communications, control, and signal processing.

- Introduction to discrete and continuous time signals and systems.
- Time-domain signal representations, impulse response of linear time-invariant (LTI) systems, and convolution.
- Frequency domain signal representations, frequency response of LTI systems, and Fourier analysis.
- Filtering of continuous and discrete time signals.
- Sampling and discrete time processing of analog signals.
- Laplace-transform domain analysis of continuous-time LTI systems.

4. Course Learning Outcomes (CLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	Understand basic signals and system concepts, properties, constructs, transformations, operations; including time-shifting, time-reflection and time-scaling, linearity, time-invariance, causality, memorylessness, BIBO (bounded-input, bounded-out) stability, Kronecker Delta and Dirac Delta functions, impulse response and frequency response of linear time-invariant systems, convolution sum and convolution integral.
2	Understand and use continuous-time and discrete-time Fourier series and Fourier transform in signal and system analysis.
3	Understand, derive and use the sampling theorem, and understand aliasing.

4	Understand and perform discrete-time processing of continuous-time signals.
5	Understand the Laplace transform and the associated region-of-convergence concept, and use them in order to analyze linear time-invariant systems.

5. Assessment Methods

Method	Description	Weight %
Midterm Exam	Midterm	50.00
Final Exam	Final Exam	50.00
	Total:	100.00

6. Instructional Material and Learning Resources

- Signals and Systems, Edition: 2nd
  Author: Oppenheim, Alan V
  Publisher: Pearson Education (Year: 1997)
  Material Type: Textbook
  Material Status: Required
- Active Use of Course Page on Blackboard: https://ku.blackboard.com/
- KOLT Tutoring: http://kolt.ku.edu.tr/

7. Course Schedule

Meeting Times	Subject
1	Introduction to Signals
2	Introduction to Systems
3	Impulse and Impulse Response
4	Discrete-time LTI Systems and Convolution Sum
5	CT LTI Systems and Convolution Integral
6	More on Convolution Integral and CT LTI Systems
7	CT Complex Exponentials and CT Fourier Series
8	Properties of CT Fourier series
9	CT Fourier Series and LTI Systems
10	CT Fourier Transform
11	Properties of the CT Fourier Transform
12	More on CT Fourier Transform
13	Continuous-time Analog Filtering
14	DT Complex Exponentials and DT Fourier Series
15	DT Fourier Series, Properties and LTI Systems
16	DT Fourier Transform
17	Properties of DT Fourier Transform
18	More on DT Fourier Transform
19	Review of CT and DT Fourier Series and Fourier Transform
20	Sampling of CT Signals
21	Aliasing
22	DT Processing of CT Signals

23	More on Sampling and DT Processing of CT Signals
24	Laplace transform and Region of Convergence
25	Properties of Laplace transform and ROC
26	Inverse Laplace transform
27	Analysis of LTI Systems using Laplace Transform

8. Student Code of Conduct and Academic Grievance Procedure

Student Code of Conduct

Statement on Academic Honesty with Emphasis on Plagiarism

Academic Grievance Procedure

9. Course Policies

10. Other

Homeworks
Weekly homework assignments aim to help students practice the theory covered in class and expose them to more complex problems. Students must be prepared to spend six (6) hours per week to review the material covered during the lectures and work on the homework problems. Homework problems are for self-study, they are not graded.

Doğan Bilge, Mehmet Sarıdereli
Koç University

Spring 2021

MATH 106: Calculus

The main objective of Calculus is to learn the basics of the calculus of functions of one variable. The students will study functions and some related theorems, limits, differentiation, techniques of integration (including an introduction to the Riemann integral culminating with the Fundamental Theorem of Calculus), and in the last part of the course, sequences and series. They will also apply these ideas to a wide range of problems that include the equations that appear naturally in social sciences, related rates, curve sketching and optimization. The students should be able to interpret the concepts of Calculus algebraically, graphically, and verbally.

Homework problems will be posted on Blackboard frequently. While these will not be collected, you should take them seriously and are expected to solve these problems within the week they were issued (HW will not be collected). Your KOLT tutors will help you with your HW. (They will guide you, not send you the answers!). There will be regular problem sessions, centered on the homework.

Grading:
Two midterm exams: 30% each
Final exam: 40%

Exams: All the information regarding the exam dates will be announced via e-mail. Calculators will be required in all exams. You can use your books and notes during the exam, but you MUST keep all material, including all calculations, that you wrote and used during the exam. *I reserve the right to ask anybody anytime how they obtained answers that were submitted during the exam. "I forgot" is NOT acceptable.*

Platforms: Live lectures will be recorded and uploaded to Blackboard. All homework and any written material used in the lectures will also be uploaded to Blackboard. Any office hours, oral exams etc. will be conducted on Zoom by us. KOLT tutors use their own platform. They will inform you.

Make-up Policy: There is no makeup for exams in general; but in case of ***BELIEVABLE,* documented cases of illness and family emergencies**, a comprehensive make-up will be administered after the final for missed exams. Note that even if you miss a midterm exam, you will have to take the comprehensive make-up given after the final. (If you miss more than one exam, the grade you receive from the make-up will count for all missed exams). **Please note that the make-up will NOT be more difficult than the final. It will be fair, but you must have a good understanding of ALL the subjects to do well on the make-up!**

Textbook: ***Calculus: A Complete Course , 9th Ed. by Robert A. Adams, Christopher Essex.***

Tentative Topics:
1.2-5, 2.1-6, 2.8-10, 3.1-3, 3.5, 4.3-6, 4.8-10, 5.1-7, 6.1-2, 6.5, 7.1, 9.1-7

Rules governing academic conduct at Koç University (see the Fact Sheet) will be strictly enforced.

ACADEMIC HONESTY

Honesty and trust are important to all of us as individuals. Students and faculty adhere to the following principles of academic honesty at Koç University:

1. Individual accountability for all individual work, written or oral. Copying from others or providing answers or information, written or oral, to others is cheating.
2. Providing proper acknowledgement of original author. Copying from another student's paper or from another text without written acknowledgement is plagiarism.
3. Study or project group activity is effective and authorized teamwork. Unauthorized help from another person or having someone else write one's paper or assignment is collusion.

Cheating, plagiarism, and collusion are serious offenses resulting in an F as well as serious disciplinary action.

FACT SHEET for MATH 106, Spring 2021

Staff	Office	Office Hours	Phone
Instructors			
Mehmet Sarıdereli msaridereli@ku.edu.tr		Will be announced	
Doğan Bilge dobilge@ku.edu.tr		Will be announced	
Teaching Assistants: **TBA**			
KOLT Tutors: **TBA**			

KOÇ University, Department of Mathematics
Math 103: Fundamentals of Mathematics, Fall 2021

Instructor: Emre Alkan (office SCI 110, e-mail: ealkan@ku.edu.tr, phone: 1714)

Web Address: http://home.ku.edu.tr/~ealkan

Textbook: Mathematical Proofs, A Transition to Advanced Mathematics by G. Chartrand, A. D. Polimeni, P. Zhang, Second Edition, Pearson, 2008.

Contents: Principle of induction, relations, functions, comparison of sets, cardinality, equivalence relations, order relations, axiom of choice, Zorn's lemma, construction of real numbers by sections, mathematical proof theory, formal systems, meta theorems.

Homework: Practice problems will be assigned related to the material covered in lectures. Some of them will be discussed in the problem session.

Grading policy: Two midterm exams each contributing 30% to your course grade. Final exam contributes 40% to your course.

Attendance: All students are required to attend all lectures.

Passing Grade: At least 40 out of 100.

Make up policy: Final exam grade will be substituted for the missed midterm exams with a valid excuse. There will be a make up for the final exam in case you miss the final exam with a valid excuse. To be eligible for the remedial exam, you should take the final exam.

Academic Honesty: Academic dishonesty, including cheating on exams, is serious offense and will not be tolerated. University policies regarding this matter will be strictly enforced. Please read the section on academic dishonesty in the university catalog.

Lecture Policy: Either do not bring your cell phone to the lectures or turn it off before the lecture starts. You should always wear a mask during lectures. No exceptions!

MATH 104 DISCRETE MATHEMATICS

KOÇ UNIVERSITY SPRING 2022

INSTRUCTOR:

Selda Küçükçifçi
Lecture: M-W 13:00-14:10 CASE B13
Office hours: by appointment (please email in advance so that we can arrange a suitable time)
e-mail: skucukcifci@ku.edu.tr

COURSE ASSISTANT:

Celal Umut Yaran
PSA: F 11:30-12:40
Office hours: TBA
e-mail: cyaran13@ku.edu.tr

TEXTBOOK: Discrete Mathematics Elementary and Beyond by L. Lovasz, J. Pelikan, K. Vesztergombi.

CONTENT OF THE COURSE: Counting problems; Combinatorial Tools; Binomial Coefficients and Pascal's Triangle; Fibonacci Numbers; Integers, Divisors and Primes; Graphs; Trees; Cycles; Matchings in Graphs.

PROBLEM SESSIONS: Suggested problems will be posted on KU Blackboard of the course. While these will not be collected, you should take them seriously and solve them. These problems will be solved in the problem sessions by the teaching assistant.

EVALUATION: Your progress will be evaluated according to your performance in a midterm exam, 3 quizzes and a final exam. Their contribution to your total grade will be as follows: the midterm exam 30%, quizzes 30% and the final exam 40%. Quizzes will be given during the lecture period; in the second half of the lectures between 13:40-14:10. The dates of the quizzes are:

Quiz 1 March 9th
Quiz 2 April 27th
Quiz 3 May 18th

The date and time of the midterm and final exams will be determined by the Registrar Office. All the information regarding to the quizzes and the exams will be announced on the KU Blackboard of the course.

MAKE-UP EXAMS: There will be **only 1 common make-up exam** for a missed exam (midterm or final) with an official excuse (health report, etc.) which will take place at the end of the semester, after the final exams at one of the days announced in the academic calendar as make-up days. It will include all the material covered throughout the semester.

ACADEMIC HONESTY: Students are expected to maintain their academic integrity. Academic dishonesty in any form will not be tolerated and punished as described in the "Student of Conduct" section of the Koç University catalog.

Student Code of Conduct
Statement on Academic Honesty with Emphasis on Plagiarism
Academic Grievance Procedure

MATH 398 – Teaching Courses

Course Description: Provides hands-on experience to students in teaching courses in mathematics. Reinforces students' understanding of basic concepts and allows them to communicate and apply their knowledge of the subject matter.

General Information: MATH 398 is a 3 unit class taught in Fall, Spring and Summer semesters by college of sciences faculty members and instructors. Enrollment to these classes is limited and requires the consent of an instructor. At the beginning of each semester students should fill out an application form in order to enroll in these classes. In this application form students should have the instructor's approval and should also specify the course for which teaching assistantship duties will be served. A syllabus that shows the grading criteria should also be included with the application form. The application is subject to the approval by college of sciences faculty management council before enrollment in these classes is finalized.

Minimum responsibilities expected from students are:

- **Staff Meetings:** Student TAs should attend staff meetings that are typically lasting between 60-90 minutes. This is a time for general announcements, assignment explanations from the lecturers, and for the individual courses to discuss the upcoming section handout and grading issues. For classes with multiple parallel sections, at least one instructor will attend the weekly staff meetings.

- **Contact Hours:** Student TAs should spend minimum weekly contact time of 2x75 min with the students.

- Course syllabus should explicitly state the S/U grading criteria.

Math 401 Syllabus

February 22, 2025

Instructor: Sinan Ünver
Office: SCI 115
email: sunver@ku.edu.tr

TA: Kaan Çim (kcim18@ku.edu.tr) Kaan will hold office hours on Monday and Thursday at 14:00-15:30 in SCI 156. **You need to send an email to Kaan by 23:30 the day before the office hour, indicating which problem(s) from the book that you want to discuss.**

Textbook: Complex Analysis, Eberhard Freitag, Rolf Busam, 2nd edition

Grading: % 50 Midterm+ %50 Final + % 10 Participation Bonus (this bonus is **not** for attendance but participation, i.e. asking or answering questions, making remarks etc. in class)

Material to be covered:

- Convergence of sequences and series in $\mathbb{C}$
- Complex derivatives, Cauchy-Riemann equations
- Line integrals, Cauchy Integral Theorem
- Sequences and series of analytic functions
- Mapping properties of analytic functions
- Singularities of analytic functions
- Laurent decomposition
- Residue theorem and applications
- Riemann mapping theorem
- Homological and homotopical version of Cauchy integral theorem

SYLLABUS FOR MATH 413

Instructor: Sinan Ünver
Office: SCI 115
email: sunver@ku.edu.tr

Textbook: Probability essentials-J. Jacod, P. Protter. 2nd edition

References: Probability Theory and Examples (Fourth Edition)- R. Durrett (for clear and precise proofs of certain results)

Probability with Martingales- D. Williams (for alternative proofs and material)

A Probability Path-Sidney I. Resnick (for applications to mathematical finance)

An introduction to Probability Theory and Its Applications-W. Feller (for applications and intuition)

Theory of Probability and Random Processes-Leonid B. Koralov, Yakov G. Sinai (for the most ambitious student who may want to further pursue these topics)

Grading: % 25 MT1, % 25 MT2 and % 50 Final

Material to be covered:

- Basic measure theory, axioms of probability
- Conditional probability, independence
- Probabilities and random variables on a countable space
- Construction of a probability measure
- Random variables
- Integration with respect to a probability measure
- Independence of random variables
- Probability distributions on $\mathbb{R}^n$
- Characteristic functions
- Properties of characteristic functions: uniqueness theorem
- Sums of independent random variables,
- Convergence of random variables: almost sure convergence, convergence in probability, convergence in L^p, and the implications between these
- Weak convergence (convergence in law of random variables), and characterization of this. Levy's continuity theorem
- Strong law of large numbers
- Central limit theorem
- Conditional expectation (with the main idea for the construction)
- Martingales, stopping time, Doob's optional sampling theorem
- Submartingales, supermartingales, Doob decomposition
- Doob's first martingale inequality, Doob's upcrossing inequality
- Martingale convergence theorem
- Applications to finance: admissable strategies, arbitrage, viable markets, complete markets, fundamental theorems of mathematical finance, option pricing.

Vrije Universiteit Amsterdam - 2024-2025

Mathematical Analysis

Course Code	XB_0009
Credits	6
Period	P4+5
Course Level	100
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	G. Benedetti
Examiner	G. Benedetti
Teaching Staff	G. Benedetti
Teaching method(s)	Written partial exam, Seminar, Lecture

Course Objective

After this course, the student can

- put a rigorous foundation to the completeness of real numbers via the notion of supremum of a set;
- phrase the concept of sequential and functional limits in the challenge-response framework and use it to prove the fundamental convergence theorems of **R** and to compute concrete limits;
- apply the theory of convergence to series of real numbers and to the Banach contraction theorem on the real line;
- determine if a subset of R is closed or open and construct new open and closed sets starting from known ones;
- classify real functions according to their regularity (continuous, differentiable, Riemann-integrable), and employ their fundamental theorems in examples;
- compute the pointwise and uniform limit of sequences and series of functions and determine when the limit process preserves the regularity;
- generalize the convergence and topological properties acquired in the first part of the course from **R** to metric spaces and in particular to the space of continuous function on an interval;
- formulate an abstract mathematical argument in a rigorous way paying attention to the role of the hypotheses and to possible examples and counterexamples;

Course Content

This course treats the rigorous mathematical theory behind single-variable Calculus:

completeness of **R**, limits, continuity, differentiability, integrability, and the mutual relation between these concepts. The mathematical theory is presented in such a way that everything can later be generalised to the context of metric spaces. The space C^0[a,b] of real-valued continuous functions on an interval [a,b] will appear as the main example of such metric spaces for which the theory can be applied to solve differential equations via the Banach contraction principle.

Topics:

1. Suprema, infima and completeness of real numbers;
2. Limit of real sequences;
3. The Bolzano-Weierstrass Theorem and the Cauchy Criterion;
4. Applications of convergence to infinite series and to the Banach contraction principle;
5. Basic topology of **R**
6. Functional limits and (uniform) continuity;
7. Differentiable functions: linear approximation and the Mean Value Theorems;
8. The Riemann integral: construction, properties and the Fundamental Theorem of Calculus
9. Pointwise and uniform convergence of sequences of functions
10. Metric spaces: basic topology, completeness and the Banach contraction principle
11. Application to the space C^0[a,b] with the uniform distance: the Picard-Lindelöf Theorem on differential equations.

Additional Information Teaching Methods

Lectures, study sessions and tutorials (2+1+2 hours per week). You will hand in a homework assignment every other week. We expect you to dedicate in total about 10 hours per week to this course.

Method of Assessment

Your final grade is built up as follows:
A written midterm exam [40%];
A written final exam [50%];
Five written assignments [10%] (the best four count).

To pass the course your total score must be no less then 55%.

If you don't fulfil this requirement, then you can take the resit. In this case, your grade will be

A) either [10%] written assignments + [90%] resit
B) or [100%] resit, depending which of the two options results in a higher grade.

It is also possible to use the grade of the assignments of the past year. Write to the lecturer, if you want to use this option.

Entry Requirements

-

Literature

For the majority of the course we study Stephen Abbott, Understanding Analysis, Springer, 2015, Second edition, ISBN 978-1-4939-5026-3.

For the last part on metric spaces, the content is based on excerpts from Chapter 1 and Chapter 5.1,5.3 of Erwin Kreyszig, Introductory Functional Analysis with Applications, John Wiley and Sons, 1978, ISBN 0-471-50731-8.

Concise notes of the lecturer will be provided to keep track of the exact material discussed during the course.

Additional Information Target Audience

Bachelor Mathematics Year 1

Recommended background knowledge

The following background is necessary for this course:

1. Basic Concepts in Mathematics (or another course on general mathematical language, notation, and concepts, including proof by induction and elementary combinatorics).
2. Single Variable Calculus

Vrije Universiteit Amsterdam - 2024-2025

Mathematical Modelling of Dynamical Systems

Course Code	XB_0007
Credits	6
Period	P6
Course Level	100
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. C. Bick
Examiner	dr. C. Bick
Teaching Staff	dr. F. Mokhtari, dr. C. Bick
Teaching method(s)	Lecture, Seminar

Course Objective

1. The student can build a mathematical model for a concrete problem.
2. She can perform (literature) research in order to find appropriate parameters that make the model realistic.
3. She can recognize the mathematical challenges of the model, has learned how to analyse the model, and how to translate her mathematical findings back to the concrete context.
4. She has learned how to work on a project together with another student.
5. She can use the LaTeX beamer package, and knows how to present parts of the project, in English and both orally and in writing, to a non-expert audience.
6. She has gained new insights in the manifold application of mathematical tools (ordinary differential equations) to real-world problems.

Course Content

This course is part of the modelling line of the bachelor's programme in mathematics, and builds on the course Introduction to Mathematical Modelling. The course focuses on the application of mathematics (to be precise: ordinary differential equations) to concrete practical problems. It involves literature research, and the presentation of mathematical results. The goal is to build a mathematical model and analyse different aspects of it. The mathematical solutions are interpreted in a concrete context. English presention and writing skills are trained intensively.

Additional Information Teaching Methods

The students work in groups of 2 or 3 students on a modelling project under guidance of the teacher. They are taught how to present their work in English, and they give oral and written presentations on their work.

Method of Assessment

Open problems to be solved in groups (50% of the final grade) and oral presentations, both individually and with the group (25% + 25%).

Entry Requirements

Literature

Project instructions will be provided through Canvas.

Additional Information Target Audience

Bachelor Mathematics Year 1

Custom Course Registration

Group enrollment via Canvas

Recommended background knowledge

Necessary background: Introduction to Mathematical Modelling, Single Variable Calculus, and Linear Algebra.

MATH 302 - ELEMENTS OF FUNCTIONAL ANALYSIS, SPRING 25

Intructor:
Hasan Inci

Course Description:
Normed and Banach spaces; linear operators; duality; inner product and Hilbert spaces; Riesz representation theorem; Hahn-Banach theorem; uniform boundedness principle; open mapping theorem; strong, weak and weak* convergence.

Textbook:
Introductory Functional Analysis with Applications, Erwin Kreyszig.

Homework and assignments:
There will be homework problems and assignments on a regular basis. You will receive bonus points on the assignments.

Evaluation:
Midterm Exam (40%), Final Exam (60%)

Grading scale:
50 - D
63 - C
76 - B
90 - A

SYLLABUS

Math 203 Calculus II (Multivariable Calculus)

Instructors

Section-1 Hasan inci, hinci@ku.edu.tr
Section-2 ilker Kocyigit, ikocyigit@ku.edu.tr
Office Hours: T.B.A.

TA

T.B.A.

Class times

Section-1 MoWe 1:00PM - 2:10PM **(SNA159)**
Section-2 MoWe 10:00AM - 11:10AM (**STDZ16)**

PS Session

Th 7:00PM - 8:10PM

Textbook

(Required) Calculus, A Complete Course,
by R. A. Adams and C. Essex, 9 th edition.

Prerequisites

MATH 106 or consent of the instructor

Course Objective

To give the student a working knowledge of fundamentals of vector operations together with differentiation and integration of multivariable functions.

Course Content

Vector operations, dot product, cross product, equations of lines and planes in 3-space, vector functions, parametrization of curves, arclength, continuity of functions, partial derivative, chain rule, gradient vector, directional derivative, extreme values, method of Lagrange multipliers for optimization, integration of multivariable functions, double and triple integrals, change of variables, polar, cylindrical and spherical coordinates, vector fields, conservative fields, line integral, surface integral, orientation on a surface, flux integral, divergence and curl, Green's theorem in the plane, Stokes and Divergence theorems in 3-space.

Grades

You will be held responsible for all information that is discussed during lectures, PS and in any uploaded materials (if there are any). The components of the final letter grade are

- %40 Midterm Exam
- %60 Final Exam
- In addition, there might be some extra credits for the tasks that will be explained in lectures.

Times and coverage of the exams will be announced later. The Final Exam is cumulative.

Attendance

Students are required to attend all the lectures and problem sessions.

Policy for Make-Up Exams

There will be no make-up exam for the midterm exams. If a student misses the midterm exam and has a valid medical report or an excuse accepted by the Dean's office, his or her score in the final exam will be substituted for the grade of the exam(s) that is (are) missed. Otherwise, a zero will be entered as the grade for the corresponding exam(s). Under the same conditions, a make-up exam will be given to those who miss the final exam.

Academic Honesty

Students and faculty adhere to the principles of academic honesty at Koc University. Read all sections of Student Code of Conduct including academic dishonesty such as cheating, plagiarism and their consequences. For exampe, if a student is caught cheating in an exam, (s)he will be punished according to the YÖK regulations. These consist of one or two semesters of prohibition from attending the university.

Syllabus for Math 204 – Spring 2022

Instructor: Tolga Etgü, SCI 267

Textbook: (required) W. E. Boyce, R. C. DiPrima, D.B. Meade, *Elementary Differential Equations and Boundary Value Problems*, Global Edition

Topics to be covered: Chapters 1-3, 5-7

Evaluation: There will be (probably around 6, possibly more of them in total) quizzes that will be given during PS time throughout the semester. Students' progress will be evaluated according to their performance in the quizzes (80%) and a comprehensive final exam (20%) in case they choose to take the final exam. Students have the option not to take the final exam. To use this option, the student must send an email to their instructor at least 24 hours before the final exam so that their total grade is determined only by their quiz performance (100%).

The letter grades will be assigned according to Koç University Suggested Grading Scale:

Grade Range	Suggested Letter Grade
90 – 100	A+, A
87 – 89	A-
83 – 86	B+
80 – 82	B
77 – 79	B-
73 – 76	C+
70 – 72	C
67 – 69	C-
64 – 66	D+
60 – 63	D
0 – 59	F

The Make-Up Policy: There will be no make-up quizzes, the 2 lowest quiz scores of each student will be dropped instead. If a student intends to take the final exam, misses it, and has a documented valid excuse accepted by the Dean's office, a make-up exam will be given at noon on the first day of the make-up period (June 11 according to the Academic Calendar).

Koç University, FALL 2023

Math 205: *Abstract Algebra*

Dr. Özlem Ejder, ozejder@ku.edu.tr**, SNA 163**

Exams and Grading: Your grade at the end of the semester will be assessed based on two midterm exams, and a final exam according to the formula:

Midterm Exam 1: %30 + Midterm Exam 2: %30 + Final Exam: %40.

I will use "**grading on a curve**" to assign the ***letter grades*** at the end of the semester.

Attendance:

I highly recommend that you show up for every lecture, although *attendance will NOT be taken during the lectures or the problem sessions.*

Problem Sessions:

The problem sessions meet once every week on Wednesdays from 5:30 to 6:40pm in SCIZ32. During these problem sessions, your TA will show you the solutions of some of the exercise problems in the book. You are also welcome to ask your own questions to discuss with TA and your classmates.

Textbook :

A first Course in Abstract Algebra, 7^{th} edition
by John B. Fraleigh. You may use the e-book if you can find/buy it.

Course Content:

1)Groups; examples and properties, subgroups
2) Cosets, Langrange's theorem,
3)Normal Subgroups, Quotient Groups
4)Homomorphisms/Isomorphisms, Kernel and Image of a Map
5)First Isomorphism Theorem, Cyclic Groups
6) Symmetric Group, Cayley's theorem
7)Simple Groups
8)Finitely Generated Abelian Groups
9) Group Actions,
10) Sylow Theorems,
11) Rings, Fields,
12) Polynomial Rings,
13) Factorization of Polynomials.

Make-up Policy:
If you miss the midterm exam or the final exam, then you are eligible to take the make-up exam under the following conditions:

(1) You must let me know by email before the exam (preferably on the day of the exam) that you will not be able to take the exam for medical reasons. In that case, you should email me a doctor's report within 3 days.

(2) If you start an exam, you cannot ask for a make-up.

*If you miss both the midterm and the final exams, you will take have to take two separate make-up exams.

Exam Content: You will be assigned both computational and proof-based problems.

Office Hours: Tuesday-Thursdays after class or by appointment.

Math 305 (Fall 2022) - Numerical Analysis Syllabus

Description
It may not be possible to express solutions of various mathematical problems in analytical terms. But that does not refrain us from finding numerical solutions, approximate yet highly accurate solutions satisfying prescribed error. For instance such is the case with finding the roots of a function, or the eigenvalues of a matrix, integrating an integrable function, solving many nonlinear ordinary differential equations. The course touches on such subjects. It introduces fundamental tools in numerical analysis with detail and rigor.

Instructor
Emre Mengi
Science (SCI) 113
Office Hours : Wednesday 10:30 - 12:00
e-mail : emengi@ku.edu.tr

Teaching Assistant
Science (SCI) 266
Tamey Cansın Ekşi
e-mail : teksi20@ku.edu.tr

Lecture Hours
Monday & Wednesday 8:30 - 9:40 at SNA 158
All lectures will be held in class. I intend to make the recorded videos of the lectures available on blackboard as long as it facilitates learning.

Blackboard
All of the course material will be posted on, and announcements will be made through blackboard. There will not be a separate course webpage.

Textbook
An Introduction to Numerical Analysis by Endre Suli and David Mayers

An electronic copy can be accessed through library's webpage, in particular from the following website:
http://0-search.ebscohost.com.libunix.ku.edu.tr/login.aspx?direct=true&scope=site&db=nlebk&AN=125081

Supplementary Books
– Numerical Methods, Anne Greenbaum and Timothy Chartier
– A First Course in Numerical Methods, Uri Ascher and Chen Greif

Purposes
– Numerical solutions of nonlinear equations and systems of nonlinear equations
– Direct and numerically stable solutions of linear systems
– Numerical computation of eigenvalues
– Functional approximation theory; approximations in the 2- and ∞-norms
– Polynomial interpolation
– Calculating integrals numerically
– Approximating solutions of ordinary differential equations

Grading

Total Score = %40 (Homeworks) + %30 (Midterm) + %30 (Final) + %5 (Attendance, Bonus)

The final score will also replace the midterm score if it is higher than the midterm.

Homeworks
There will be 4-6 homeworks assigned throughout the semester. In each of the homeworks, majority of the problems will be conceptual, but there will also be computational problems. You will be using Matlab for solving computational problems. For each homework, you will have about two weeks to complete it.

Attendance
Attendance will be taken in every lecture excluding the first week. If you were present in more than %50 of the lectures in which attendance is taken, you will be eligible for a bonus worth up to 5 points that will be added to your total score out of 100. Your bonus score will be proportional to your attendance. For instance, if you attend %60 of the lectures, you will receive $0.6 \cdot 5 = 3$ bonus points.

Note that your physical attendance to the lectures is expected. If you are not going to be able to attend the lectures physically for a legitimate reason for a long period of time, you should let me know at the beginning of the semester. In the case of a short absence because of an illness or an excuse approved by the Dean's office, you could get in touch with me with approved documents.

Problem Sessions
Friday 10:00 - 11:10 at CASE B24

Problem sessions will meet typically once every two weeks. The homework problems, and other practice problems will be solved in the problem sessions. The first problem session will take place in the second week; in particular, there will be no problem session in the first week of the semester.

Make-up Policy
There will be a make-up exam at the end of the final period. This exam will serve as a make-up exam for the midterm or the final, whichever you cannot take for a legitimate reason approved either by the medical center or the Dean's office. To be eligible for the make-up exam, a medical report by the medical center or an approved excuse request by the Dean's offiffice must be sent to me by e-mail.

Important Enrollment Dates

- October 3, Monday : First Day of Classes
- October 3 - 14 : Add-Drop Period
- November 14 - 18 : Winter Break (the dates are tentative)
- December 30, Friday : Last Day to Withdraw from a Course
- January 13, Friday : Last Day of Classes
- January 16 - January 25 : Final Period

Course Calendar
This calendar is tentative. The precise duration on various topics are likely to change. The numbers inside the parentheses at the end of each line refer to the sections of the textbook.

– Week 1 (Oct 3): Solution of equations by iterations (1.1 - 1.8)
– Weeks 2-3 (Oct 10): Solution of systems of linear equations (2.1 - 2.6, 2.7, 2.9)
– Week 4 (Oct 24): Symmetric and banded matrices (3.1 - 3.3)
– Week 5 (Oct 31): Simultaneous nonlinear equations (4.1 - 4.4)
– Weeks 6-7 (Nov 7): Eigenvalues, eigenvectors of a symmetric matrix (5.1 - 5.10)
– Week 8-9 (Nov 28): Polynomial interpolation (6.1 - 6.5)
– Week 10 (Dec 12): Numerical integration, Newton-Cotes quadrature (7.1 - 7.7)
– Week 11 (Dec 19): Polynomial approximation in the ∞-norm (8.1 - 8.5)
– Week 12 (Dec 26): Approximation in the 2-norm (9.1 - 9.4)
– Week 13 (Jan 2): Numerical integration, Gaussian quadrature (10.1 - 10.6)
– Week 14 (Jan 9): Review
– Optional topic (If time permits): Initial value problems for ODEs (12.1 - 12.5)

Math 320 (Fall 2021) - Linear Algebra
Syllabus

Description
This is a second course on linear algebra. Vector spaces and linear maps will be introduced in abstract terms, and studied in detail. Substantial effort will be put on more advanced topics such as inner product spaces, self-adjoint and normal operators, singular value decomposition, Jordan form.

Topics to be Covered
Vector Spaces, Subspaces, Sums and Direct Sums of Subspaces (Chapter 1); Finite Dimensional Real and Complex Vector Spaces (Chapter 2); Linear Maps, Duality (Chapter 3); Eigenvalues (Chapter 5); Inner Product Spaces (Chapter 6); Linear Operators between Inner Product Spaces, Self-Adjoint and Normal Operators, Positive Operators, Singular Value Decomposition (Chapter 7); Generalized Eigenvectors, Minimal Polynomials, Jordan Form (Chapter 8); Trace and Determinant (Chapter 10, *if time permits*).

Instructor
Emre Mengi
Science (SCI) 113
Office Hours : Tuesday 17:10 - 18:10
`e-mail : emengi@ku.edu.tr`

Teaching Assistant
Tolga Temiz
Office Hours : Monday 10:00 - 11:00
`e-mail : ttemiz16@ku.edu.tr`

Lecture Hours
Tuesday & Thursday 14:30 - 15:40 at CASE Z08

Course Webpage
`http://home.ku.edu.tr/~emengi/teaching/math320/math320.html`
Not available yet. Will be available before the first day of the semester.
Note that most of the course material will be posted on blackboard.

Textbook
Linear Algebra Done Right by Sheldon Axler (Third Edition)

A copy of the textbook will be available in the library.

Supplementary Book
Linear Algebra and its Applications by Peter D. Lax (Second Edition)

Grading

$$\text{Total Score} \quad = \quad \%30 \text{ (Homeworks)} + \%30 \text{ (Midterm)} + \%40 \text{ (Final)}$$

Homeworks
There will be 3-5 homeworks assigned throughout the semester. For each homework, you will have about two weeks to complete it. Your homework score is the average of these assigned homeworks.

Problem Sessions
Monday 19:00 - 20:10 at CASE 124

Problem sessions will be held weekly. Suggested problems announced earlier will be solved during the problem sessions.

Important Enrollment Dates

- September 27, Monday : First Day of Classes
- September 27 - October 8 : Add-Drop Period
- October 29, Friday : Foundation of Turkish Republic
- November 15 - November 19 : Winter Break
- January 7th, Friday : Last Day of Classes
- January 10 - January 19 : Final Period

Course Calendar
This calendar is tentative. The precise duration on various topics are likely to change. The numbers inside the parentheses refer to the sections of the textbook.

– Week 1 (Sep 27): Vector Spaces, Subspaces, Sums of Subspaces (1A, 1B, 1C)
– Week 2 (Oct 4): Span, Linear Independence, Basis, Dimension (2A, 2B, 2C)
– Week 3 (Oct 11): Vector Spaces of Linear Maps, Null Spaces and Ranges (3A, 3B)
– Week 4 (Oct 18): Matrix Representation, Invertible Linear Maps, Isomorphism (3C, 3D)
– Week 5 (Oct 25): Products and Quotients of Vector Spaces, Duality (3E, 3F)
– Week 6 (Nov 1): Invariant Subspaces, Eigenvalues, Eigenvectors (5A, 5B, 5C)
– Weeks 7-8 (Nov 8): Inner Product Spaces (6A, 6B, 6C)
– Week 9 (Nov 29): Self-Adjoint and Normal Operators, The Spectral Theorem (7A, 7B)
– Week 10 (Dec 6): Positive Operators, Singular Value Decomposition (7C, 7D)
– Week 11 (Dec 13): Generalized Eigenvectors, Decomposition of an Operator (8A, 8B)
– Week 12 (Dec 20): Characteristic and Minimal Polynomials, Jordan Form (8C, 8D))
– Week 13 (Dec 27): Trace, Determinant (10A, 10B)
– Week 14 (Jan 3): Determinant, Review (10B)

MATH 208 - ADVANCED CALCULUS, SPRING 24

Intructor:
Hasan Inci

Course Description:
Completeness axiom for real numbers; convergent sequences; compactness; continuous functions; differentiation; linear and topological structure of Euclidean spaces; limit, compactness and connectedness in a Euclidean space; continuity and differentiation of functions of several variables; inverse and implicit function theorems.

Textbook:
Advanced Calculus by Patrick M. Fitzpatrick

Homework:
There will be weekly homework problems.

Evaluation:
Midterm Exam (40%) & Final Exam (60 %)

Grading scale:
50 - D
63 - C
76 - B
90 - A

Math 107 - Introduction to Linear Algebra (Spring 2021)

Course Description
Vectors; matrices and systems of linear equations; vector spaces; linear transformations; orthogonality; algebra of complex numbers; eigenvalue problems

Course Overview
This is a first undergraduate course in linear algebra. The course starts with concrete topics such as systems of linear equations with which a typical student should already have some familiarity at elementary level. Abstract concepts such as a vector space, a linear transformation acting on the vector spaces are first introduced in connection with these concrete grounds. Second part introduces topics such as vector spaces, isomorphism, transformations in abstract terms and in a general setting. The course concludes with eigenvalue problems, and the notions of an inner product and orthogonality.

Textbook
Linear Algebra and its Applications (5th Edition)
by David C. Lay, Stephen R. Lay and Judi J. McDonald
The textbook will be available through the bookstore.

Sections
Section 1 (Emre Mengi), Tue&Thr 14:30 - 15:45
Section 2 (Emre Mengi), Tue&Thr 13:00 - 14:15
Section 3 (Doğan Bilge), Tue&Thr 17:30 - 18:45
Section 4 (Fethi Mübin Ramazanoğlu), Mon&Wed 08:30 - 09:45
Section 5 (Fethi Mübin Ramazanoğlu), Mon&Wed 14:30 - 15:45

Instructors

	Section	**Office Hours**
Fethi Mübin Ramazanoğlu (framazanoglu@ku.edu.tr)	4,5	Mon 10:00-11:00
Doğan Bilge (dobilge@ku.edu.tr)	3	To be announced
Emre Mengi (emengi@ku.edu.tr)	1,2	Thr 16:15-17:45

Teaching Assistants
Arda Tiftikçi (atiftikci18@ku.edu.tr), Kerem Başol (kbasol19@ku.edu.tr — Office Hour: Thr 09:00-10:30), Muhammed Burak Kızıl (mkizil19@ku.edu.tr), Mustafa Ahmet Aydın (maydin19@ku.edu.tr), Umur Berkay Karakaş (ukarakas18@ku.edu.tr), Muhammad Nadeem (mnadeem20@ku.edu.tr), Tolga Temiz (ttemiz16@ku.edu.tr), Waqar Ahmed (wahmed20@ku.edu.tr)

Course Webpage
`http://home.ku.edu.tr/~math107`
You can access the past exams and weekly suggested problems from the course webpage.
The course material will be made available through blackboard.

Grading
Your grade at the end of the semester will be assessed based on two midterms and a final, in particular based on the following grading scheme.

- %30 (Midterm 1) + %30 (Midterm 2) + %40 (Final)

Please keep in mind that there will be a curve in the end when assessing your letter grade.

Problem Sessions
The problem sessions meet once every week. Their purpose is to provide you the opportunity to practice with your TAs and classmates, as well as to bring questions/topics that you are having difficulty with. Some of the questions solved in the problem sessions with minor modifications may appear in the midterms and in the final.

Problem session times and the TAs teaching them are as follows.

PS A (Arda Tiftikçi), Fri 16:00 - 16:50
PS B (Muhammed Burak Kızıl), Fri 15:00 - 15:50
PS C (Umur Berkay Karakaş), Fri 10:00 - 10:50
PS D (Mustafa Ahmet Aydın), Fri 09:00 - 09:50

KOLT Tutors
Yiğithan Gediz (ygediz20@ku.edu.tr)

Make-up Exams
A student can be eligible for a make-up exam only if she/he provides proper medical reports approved by the health center at Koç University or an excuse form.

The final exam will be used as the make-up exam for the midterm exams. If a student misses the final exam for a legitimate reason, a separate make-up exam will be held after the final period.

Important Dates and Holidays

- February 15, Monday — First Day of Classes
- February 15-19 — Add-Drop Period
- April 5-12 — Spring Break
- April 23, Friday — National Sovereignty and Children's Day
- May 13-15 — Ramadan Feast (Holiday)
- May 16, Sunday — Last Day for Withdrawal from a Course
- May 28, Friday — Last Day of Classes
- May 31 - June 11 — Final Examination Period

Course Calendar
This calendar is only tentative, and subject to changes. The numbers in parentheses refer to the sections from the textbook by Lay, Lay and McDonald.

Week 1 (Feb 15 - 19)
Systems of Linear Equations, Row Reduction and Echelon Forms (1.1-1.2)

Week 2 (Feb 22 - 26)
Vector Equations, Matrix Equation $A\mathbf{x} = \mathbf{b}$, Solution Sets of Linear Systems (1.3-1.5)

Week 3 (Mar 1 - 5)
Linear Independence in $\mathbb{R}^n$, Introduction to Linear Transformations (1.7-1.8)

Week 4 (Mar 8 - 12)
Matrix of a Linear Transformation, Matrix Operations (1.9, 2.1)

Week 5 (Mar 15 - 19)
Inverse of a Matrix, Characterizations of Invertible Matrices, Vector Spaces and Subspaces (2.2-2.3, 4.1)

Week 6 (Mar 22 - 26)
Null Spaces, Column Spaces, Linear Transformations on Vector Spaces, Linear Independence, Basis (4.2-4.3)

Week 7 (Mar 29 - Apr 3)
Coordinate Systems, Isomorphism, Dimension of a Vector Space (4.4-4.5)

Week 8 (Apr 12 - 16)
Rank, Change of Bases (4.6-4.7)

Week 9 (Apr 19 - 23)
Introduction to Determinants, Properties of Determinants, Cramer's Rule (3.1-3.3)

Week 10 (Apr 26 - 30)
Eigenvalues and Eigenvectors, Characteristic Equation (5.1-5.2)

Week 11 (May 3 - 7)
Diagonalization, Eigenvectors and Linear Transformations, Complex Eigenvalues (5.3-5.5)

Week 12 (May 10 - 14)
Inner Product, Length, Orthogonality, Orthogonal Sets (6.1-6.2)

Week 13 (May 17 - 21)
Orthogonal Projections, Gram-Schmidt Process, Least-Squares Problem (6.3-6.5)

Week 14 (May 24 - 28)
Inner Product Spaces, Symmetric Eigenvalue Problem, Quadratic Forms (6.7, 7.1-7.2)

Purposes and Learning Outcomes
We expect a student to be equipped with the following skills at a successful completion of the course.

– Think in abstract and general terms, for instance polynomials can also be orthogonal just like ordinary vectors
– Determine whether the solution to a linear system is unique or not
– Solve a linear system by row-reduction
– A good knowledge of basic concepts about matrices such as column space, null space, rank, rank-nullity theorem
– Perform basic operations on matrices such as the calculation of the matrix inverse
– Knowledge of characterizations of invertible matrices
– The student should be able to express a determinant as a cofactor expansion
– Knowledge of the properties of the determinant operation
– A good understanding of a vector space and related notions such as a basis, linear independence, span, coordinates relative to a basis, isomorphism
– Knowledge of what a transformation is, the properties that makes a transformation a linear transformation, and notions related to linear transformation such as their kernel, range as well as their properties
– Identification of a matrix representation of a linear transformation
– Ability to represent a change of coordinates as a linear transformation and in terms of a matrix
– Knowledge of the definitions of an eigenvalue, eigenvector and eigenspace
– Ability to determine whether a matrix is diagonalizable
– Knowledge of the properties of eigenvalues and eigenvectors of symmetric matrices
– Knowledge of the definition of an inner product, orthogonality and orthogonal projection
– Ability to find an orthonormal basis for a vector space with an inner product
– Knowledge of the definition of the least-squares problem and its motivation
– Ability to express the solution of a least-squares problem as the solution of a linear system

Engr200 Spring 2022 Tentative Syllabus

- **Lectures:**
  - Tuesday/Thursday 13:00-14:10, SNA A21.
    Instructor: Sinem Çöleri, scoleri@ku.edu.tr
    Office hours: Tuesday/Thursday 10:00-11:00. Please send an email to get an appointment.
- **Problem Sessions:**
  - Thursday 19:00-20:10, ENG 114.
    Teaching assistants: TBA

- **Pre-requisites**: MATH 106 or consent of the instructor.

- **Course website:** https://ku.blackboard.com/
  The webpage includes information about the course, instructors, TAs, lecture notes, video recordings, announcements, problem assignment.
- **Required textbook:** Introduction to Probability by D. P. Bertsekas and J. N. Tsitsiklis. Massachusetts: Athena Scientific. 2002.
  - MIT website for the course based on the textbook: https://ocw.mit.edu/resources/res-6-012-introduction-to-probability-spring-2018
- **Grading:**
  - Midterm 1: 30%
  - Midterm 2: 30%
  - Final: 40%
  - Bonus participation: 10%,
- **Homework and PS:** Homework questions will be posted in Blackboard every Friday. Some homework questions will be solved during the PS together with some extra examples to gain you more practical skills.
- **Make-up exam policy:** A make-up exam will be given during final exam period to students who cannot take the exam due to an excuse deemed legitimate by the instructor. This exam will be cumulative, so that its questions can be from any of the topics covered during the semester.
- **Academic honesty:** Honesty and trust are important to all of us as individuals. Students and faculty adhere to the following principles of academic honesty at Koc University:
  - Individual accountability for all individual work, written or oral. Copying from others or providing answers or information, written or oral, to others is cheating.
  - Providing proper acknowledgement of original author. Copying from another student's paper or from another text without written acknowledgement is plagiarism.
  - Study or project group activity is effective and authorized teamwork. Unauthorized help from another person or having someone else write one's paper or assignment is collusion.

  Cheating, plagiarism, and collusion are serious offenses resulting in an F grade and disciplinary action.

- **Participation:** Attendance will be recorded randomly throughout the semester.

- **Tentative schedule:**

Introduction Probabilistic Models (1.1,1.2)	Cumulative Distribution Functions (3.2) Normal Random Variables (3.3)

Conditional Probability (1.3) Total Probability Theorem and Bayes' Rule (1.4) Independence (1.5) Counting (1.6, 1.7) Probability Mass Functions (2.1,2.2) Functions of Random Variables (2.3) Mean, Variance, and Moments (2.4) Joint PMFs (2.5) Conditioning (2.6) Independence of Random Variables (2.7) Continuous Random Variables and PDFs (3.1)	Conditioning on an Event (3.4) Multiple Random Variables (3.5) Continuous Bayes' Rule (3.6) Derived Distributions (4.1) Covariance and Correlation (4.2) Conditional Expectation and Variance Revisited (4.3) Sum of a Random Number of Independent Random Variables (4.5) The Weak Law of Large Numbers (5.2) Central Limit Theorem (5.4) Random Processes Markov Chains (7.1,7.2,7.3)

ELEC 205 Digital System Design Spring 2024

Ertuğrul Başar
College of Engineering
Koç University, Istanbul, Turkey
ebasar@ku.edu.tr

Week 1

ELEC 205: Digital System Design

Lecture Instructor	Ertuğrul Başar
Office Hours	After lectures
Office Location	SNA Z32
Email	ebasar@ku.edu.tr

TA Name	Email
Yarkın Gevez	elec205-group@ku.edu.tr
Tufail Ahmad	elec205-group@ku.edu.tr
Ertuğ Pıhtılı	elec205-group@ku.edu.tr

elec205-group@ku.edu.tr: For all general questions in ELEC 205 regarding homeworks, PS sessions, exam grades etc.

		Class	Class Title	Enrolled	Days & Times	Room	Class Dates
		ELEC 205-02 (1681)	DIGITAL SYSTEM DESIGN (Lecture)	0	MoWe 10:00AM - 11:10AM	SNAB152	Feb 12, 2024-May 24, 2024
		ELEC 205-PSA (1682)	DIGITAL SYSTEM DESIGN (Problem Session)	0	Fr 8:30AM - 9:40AM	ENGZ50	Feb 12, 2024-May 24, 2024

ELEC 205

Course Objectives:

- ELEC 205 is a course targeting electrical and computer engineering students to **build the fundamental digital design concepts**.
- In this course we will study
  - Combinational logic circuit design techniques, sequential logic circuits, registers and counters, memory, and state machines.
- As of Fall 2022, ELEC 204 Digital Design course has been split into two new courses: **ELEC 205 Digital System Design** and **ELEC 305 Digital System Design Laboratory**.
- ELEC 205 is replacing required area course ELEC 204 for ELEC and COMP students. On the other hand, ELEC 305 will be offered as an area elective course starting from Spring 2023 semester.

"Computers are incredibly fast, accurate and stupid.
Human beings are incredibly slow, inaccurate and brilliant.
Together they are powerful beyond imagination." Albert Einstein

ELEC 205

Teaching Methods & Rules

- In-class teaching and homework assignments (logic circuit simulations) will go in parallel throughout the semester.
- Zoom video recordings will not be released! No online attendance option.
- Due to the limited capacity of SNA B152, consent requests will not be accepted after the class enrollment becomes 70.
- Two branches of ELEC 205 will go in parallel with the same midterm/final exams and grading methodology.

- Textbook: M.M. Mano and M. D. Ciletti, *Digital Design with an Introduction to the Verilog HDL, VHDL, and SystemVerilog*, 6th Edition, Pearson.
- Reference Book: Thomas L. Floyd, *Digital Fundamentals*, 11th Edition, Pearson.

ELEC 205: Assessment

Type	Description	Final Grade %
Attendance	Students attended more than 70% of live lectures.	**5**
Homeworks	Four computer simulation assignments (Logisim) will be given. *The best three assignments will be graded.*	**15**
Midterm Exam	There will be a single face-to-face midterm exam covering relevant topics.	**35**
Final Exam	Assessment of students' knowledge and comprehension on the digital design concepts. Covers all semester topics.	**45**
Total		**100**

Make-up policy:

- The midterm make-up exam will be given *within 10 days* after the midterm exam.
- Final make-up and final remedial exams will be held on the same date scheduled by the Registrar and Student Affairs Directorate at the end of the semester during the period defined by the academic calendar.
- Make-up exams will be only given with a valid reason (health report, etc., reaching the instructors through KUSIS or Health Center).

Honor Code for Homeworks

You will be expected to state and sign the following Honor Code for all homeworks.

"I hereby certify that I have completed this homework on my own without any help from anyone else.

I understand that the only sources of authorized information in this open-book exam are

(i) the course textbook, and

(ii) the lecture notes self-taken or distributed by the instructor at Blackboard for this class.

I have not used, accessed, received or distributed any information from/to any other unauthorized source in taking this exam.

The effort in the exam/homework thus belongs completely to me."

Course Targets

- What is Digital and Why Digital?
- Number Representations in Binary Forms
- Basic Digital System Components: Gates
- Simple Digital Systems: Combinational Systems (No Memory!)
- Complex Digital Systems: Sequential Systems (With Memory!)

Course Plan

Week	Topics
Week 1	Course Regulations; Introductory Concepts, Digital and Analog Quantities, Binary Digits, Logic Levels, Digital Waveforms, Basic Logic Functions, Binary Numbers, Number-base Conversions
Week 2	Octal/Hex. Numbers, Complements, Signed Binary Numbers, Binary Codes, Binary Storage and Registers + **PS 1**
Week 3	Boolean Algebra and Logic Gates, Basic Theorems and Properties of Boolean Algebra, Boolean Functions
Week 4	Canonical and Standard Forms, Digital Logic Gates, Integrated Circuits + **PS 2**
Week 5*	The Map Method, Product of Sums Simplifications, Don't-Care Conditions
Week 6	NAND & NOR Implementations, XOR Func. + **PS 3**
Week 7	Combinational Circuits, Analysis and Design Procedures Binary Adder-Subtractor, Decimal Adder,
Week 8	Decoders, Encoders, Multiplexers, + **PS 4** + **MIDTERM EXAM**
	Bayram & Spring Break (April 8-12, April 15-19)
Week 9	Sequential Circuits, Latches, Flip-Flops
Week 10*	Analysis of Clocked Sequential Circuits, State Reduction and Assignment, Design Procedures + **PS 5**
Week 11	Registers, Shift Registers, Ripple Counters, Synchronous Counters + **PS 6**
Week 12*	Memory and Programmable Logic, RAM/ROM, Programmable Logic Array, Programmable Array Logic
Week 13	Design at the Register Transfer Level, Algorithmic State Machines and Design Examples

PHYS 101: General Physics 1 **KOÇ UNIVERSITY** **Fall Semester 2024**

College of Sciences

First classes: Monday, Oct.07	**Instructor**	**Office**	**Tel**	**Office hour**
Sect.1 **TuTh 10:00-11:10**	**Umran İnan**	SNA 153	1215	MTWThF 12:30-14:30
Sect.2 **TuTh 11:30-12:40**	**Neşe Aral**	SCI 129		Tu 16:00-18:00
Sect.3 **TuTh 14:30-15:40**	**Neşe Aral**	SCI 129		Tu 16:00-18:00
Sect.4 **MoWe 16:00-17:10**	**Serap Aksu Ramazanoğlu**	SCI Z48	1568	Mo 13:00-15:00
Sect.5 **MoWe 10:00-11:10**	**Serap Aksu Ramazanoğlu**	SCI Z48	1568	Mo 13:00-15:00
Coordinator: Problem Sessions, Exams	**Nazmi Yılmaz**	SCI 136	1726	Mo 14:00-15:00
Teaching Assistants	**TBA**			

Course Web Site: https://learn.hub.ku.edu.tr/

PLEASE CHECK COURSE WEB SITE FOR ANY CHANGES AND UPDATES THROUGHOUT THE SEMESTER.

HOMEWORKS WILL BE ACCESSIBLE IN MASTERINGPHYSICS PORTAL THROUGH COURSE WEBSITE

Past years' quiz, exam, ps problem examples: GeneralphysicsFiles

Course textbook (required): University Physics by Young and Freedman, vol.1 15th Ed. Addison-Wesley (2019). Available at the Main Campus Bookstore (Students' Center).
Supplementary textbook (not required): Fundamentals of Physics by David Halliday, Robert Resnick and Jearl Walker, (Wiley, current edition).

SEMESTER SCHEDULE (TENTATIVE)

Week		**Subject (Chapter in book)**	**Week**		**Subject (Chapter in Book)**
1	Oct. 07	Units and Vectors (Ch.1)	8	Nov. 25	Momentum and Impulse (Ch.8)
2	Oct. 14	Kinematics in 1D (Ch.2)	9	Dec. 02	Rotation and Rigid Bodies (Ch.9)
3	Oct. 21	Kinematics in 2D and 3D (Ch.3)		**TBA**	**Midterm Exam II (Ch.1 - Ch.9)**
4	Oct. 28	Newton's Laws (Ch.4)	10	Dec. 09	Dynamics of Rotation (Ch.10)
5	Nov. 04	Applying Newton's Laws (Ch.5)	11	Dec. 16	Dynamics of Rotation (Ch.10)
	TBA	**Midterm Exam I (Ch.1 - Ch.5)**	12	Dec. 23	Periodic Motion (Ch.14)
6	Nov. 11	Work and Kinetic Energy (Ch.6)	13	Dec. 30	Periodic Motion (Ch.14)
7	Nov. 18	Potential Energy, Energy Cons.(Ch.7)	14	Jan. 06	Gravitation (Ch.13)
				Jan. 13-24	**Final Exam (All-Inclusive)**

Grading: : Midterm1: 25%, Midterm2: 25%, Final: 25%, Homework:10%, Attendance: 15%.

IMPORTANT: All students taking this course must register at Masteringphysics portal through the https://learn.hub.ku.edu.tr/ e-learning platform with their personal student access code that is supplied with the course textbook. The registration is mandatory to access any assignment (homework, exam, quiz etc.) that is provided and graded through the portal.

Attendance: Students must attend the lectures in-person. Attendance records will be taken through https://learn.hub.ku.edu.tr/, and with verification using a hardcopy name-last name sheet circulated during class. Inconsistencies between online and physical attendance records may result in substantial reductions of the overall attendance grade. j

Make-up Policy: Students with an excuse officially approved by KU Administration are eligible to take an all-inclusive make-up exam for the midterm and final exam(s) missed. The make-up exam dates are scheduled and announced by the Registrar's Office. Homeworks do not have any make-up.

Remedial Exam is not given in this course.

The Freshman Physics Staff at Koç University

Koç University

Statement on Academic Honesty

with Emphasis on Plagiarism

Koç University expects all its students to perform course-related activities in accordance with the rules set forth in the Student Code of Conduct (https://apdd.ku.edu.tr/en/academic-policies/student-code-of-conduct/). Actions considered as academic dishonesty at Koç University include but are not limited to cheating, plagiarism, collusion, and impersonating. This statement's goal is to draw attention to cheating and plagiarism related actions deemed unacceptable within the context of Student Code of Conduct:

All individual assignments must be completed by the student himself/herself, and all team assignments must be completed by the members of the team, without the aid of other individuals. If a team member does not contribute to the written documents or participate in the activities of the team, his/her name should not appear on the work submitted for evaluation.

Plagiarism is defined as 'borrowing or using someone else's written statements or ideas without giving written acknowledgement to the author'. Students are encouraged to conduct research beyond the course material, but they must not use any documents prepared by current or previous students, or notes prepared by instructors at Koç University or other universities without properly citing the source. Furthermore, students are expected to adhere to the Classroom Code of Conduct (https://apdd.ku.edu.tr/en/classroom-code-of-conduct/) and to refrain from all forms of unacceptable behavior during lectures. Failure to adhere to expected behavior may result in disciplinary action.

There are two kinds of plagiarism: Intentional and accidental. Intentional plagiarism (Example: Using a classmate's homework as one's own because the student does not want to spend time working on that homework) is considered intellectual theft, and there is no need to emphasize the wrongfulness of this act. Accidental plagiarism, on the other hand, may be considered as a 'more acceptable' form of plagiarism by some students, which is certainly not how it is perceived by the University administration and faculty. The student is responsible from properly citing a source if he/she is making use of another person's work. For an example on accidental plagiarism, please refer to the document titled "An Example on Accidental Plagiarism".

If you are unsure whether the action you will take would be a violation of Koç University's Student Code of Conduct, please consult with your instructor before taking that action.

An Example on Accidental Plagiarism

This example is taken from a document prepared by the City University of New York.

The following text is taken from Elaine Tyler May's '*Myths and Realities of the American Family*':

"Because women's wages often continue to reflect the fiction that men earn the family wage, single mothers rarely earn enough to support themselves and their children adequately. And because work is still organized around the assumption that mothers stay home with children, even though few mothers can afford to do so, child-care facilities in the United States remain woefully inadequate."

Below, there is an excerpt from a student's homework, who made use of May's original text:

"As Elaine Tyler May points out, "women's wages often continue to reflect the fiction that men earn the family wage" (588). Thus many single mothers cannot support themselves and their children adequately. Furthermore, since work is based on the assumption that mothers stay home with children, facilities for day care in this country are still "woefully inadequate." (May 589)".

You may think that there is no plagiarism here since the student is citing the original author. However, this is an instance of accidental plagiarism. Although the student cites May and uses quotation marks occasionally, the rest of the sentences, more specifically the following section: "Thus many single mothers cannot support themselves and their children adequately. Furthermore, since work is based on the assumption that mothers stay home with children, facilities for day care in this country are still "woefully inadequate." (May 589)" almost exactly duplicates May's original language. So, in order to avoid plagiarism, the student either had to use quotation marks for the rest of the sentences as well, or he/she had to paraphrase May's ideas by using not only his/her own words, but his/her own original ideas as well. You should keep in mind that accidental plagiarism often occurs when the student does not really understand the original text but still tries to make use of it. Understanding the original text and understanding why you agree or disagree with the ideas proposed in that text is crucial both for avoiding plagiarism and for your intellectual development.

Reference(s):

Avoiding and Detecting Plagiarism: A Guide for Graduate Students and Faculty. The Graduate Center. City University of New York, 2012. Web. < Microsoft Word - Avoiding and Detecting Plagiarism 2005 rev 2012 jkdc.docx (cuny.edu) >

PHYS 102: General Physics 2 **KOÇ UNIVERSITY** **Spring Semester 2025**

College of Sciences

First classes: February 17	**Instructor**	**Office**	**Tel**	**Office hour**
Sec.1: TuTh 08:30-09:40 SOS B10	**Alkan Kabakçıoğlu**	Sci 104	1830	email for appointment
Sec.2: MoWe 16:00-17:10 SNA A52	**Menderes Işkın**	Sci 116	1604	email for appointment
Sec.3: MoWe 13:00-14:10 SOS B08	**Fethi Mübin Ramazanoğlu**	Sci 215	1357	email for appointment
Sec.4: MoWe 11:30-12:40 SOS B10	**Livio Nicola Carenza**	Sci 121	1514	email for appointment
Sec.5: TuTh 16:00-17:10 SNA A21	**Alkan Kabakçıoğlu**	Sci 104	1830	email for appointment
Course Coordinator	**Nazmi Yılmaz**	Sci 136	1726	email for appointment
Teaching Assistants	**TBA**			

Course Web Site: https://learn.hub.ku.edu.tr/ ,

PLEASE CHECK COURSE WEB SITE FOR ANY CHANGES AND UPDATES THROUGHOUT THE SEMESTER.

HOMEWORKS WILL BE ACCESSIBLE IN MASTERINGPHYSICS PORTAL THROUGH COURSE WEBSITE

Past years' exams and selected problems: Generalphysics2Files.

Course textbook (required): University Physics by Young and Freedman, vol.1 15th Ed. Addison-Wesley (2019). Available at the bookstore.

Week	**(Date)**	**Subject**	**(Chapter in book)**	**Week**	**(Date)**	**Subject**	**(Chapter in Book)**
1-2	(Feb.17-28)	Electric Charge and Electric Field	(Ch.21)	8	(Apr.07-11)	Direct-Current Circuits	(Ch.26)
2-3	(Feb.24-Mar.07)	Gauss' Law	(Ch.22)	9-10	(Apr.14-25)	Magnetic Field&Magnetic Forces	(Ch.27)
3-4	(Mar.3-14)	Electric Potential	(Ch.23)	10-11	(Apr.21-May02)	Sources of Magnetic Field	(Ch.28)
4-5	(Mar.10-21)	Capacitance and Dielectrics	(Ch.24)	**TBA**		**Midterm II (Ch.21-Ch.28)**	
TBA		**Midterm I (Ch21- Ch.24)**		12-13	(May.05-16)	Electromagnetic Induction	(Ch.29)
6	(Mar.24-28)	Current,Resistance,EMF	(Ch.25)	13-14	(May.12-23)	Inductance	(Ch.30)
7	(Mar.31-Apr.04)	**Spring Break**		15	(May.26-30)	Electromagnetic Waves	(Ch.32)
					(Jun. 10-20)	**Final Exam (All-inclusive)**	

Grading: Midterm1: 29% , Midterm2: 29% , Final: 29% , Attendance: 13% .

IMPORTANT: Each exam will include at least one problem from previous years' exams, selected problems, or homework problems. Previous years' exams and selected problems are available in the Generalphysics2Files.

Problem Sessions (PS): While problem sessions are optional, it is highly recommended that you enroll in a PS section and attend regularly to enhance your understanding of the material.

Masteringphysics: All students taking this course can register at Masteringphysics portal through the https://learn.hub.ku.edu.tr/ e-learning platform with their personal student access code that is supplied with the course textbook. Registration is necessary to access any content that is provided through the portal.

Attendance Policy: Students are required to attend all lectures in person. Attendance will be recorded through a physical sign-in sheet circulated during class.

Make-up Policy: Students with an excuse officially approved by KU Administration are eligible to take an all-inclusive make-up exam for the midterm and final exam(s) missed. The make-up exam dates are scheduled and announced by the Registrar's Office.

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The Freshman Physics Staff at Koç University

Koç University

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Reference(s):

Avoiding and Detecting Plagiarism: A Guide for Graduate Students and Faculty. The Graduate Center. City University of New York, 2012. Web. <http://www.gc.cuny.edu/CUNY_GC/media/CUNY-Graduate-Center/PDF/Publications/AvoidingPlagiarism.pdf>

HUMS 105

Faith and Power: Exploring the Middle Ages
Instructor: Dr. Deniz Sever Georgousakis
E-mail: dgeorgousakis@ku.edu.tr
Classroom: Online

Course Description
In this course, students will explore key issues in the cultural history of Europe and Eurasia from the 4th century CE to the end of 14th century: a time period known as the Middle Ages. Within this wide geographic and time span, we will examine closely two interrelated themes: **faith** and **power**. The aim is to discuss how specific developments in religion and power structures of societies produced major medieval civilizations and their characteristic cultures. At the same time, the course will question their mutual relationships and connections as well as the role those medieval societies played in the development of modern societies and cultures. Throughout the semester, students will be learning how to approach various types of primary sources including written documents, artworks, architecture, and monuments. One of the learning goals is to address those different sources and engage in basic methods of analysis of society, religion and art of medieval cultures. The course will focus on the Byzantine world and Medieval Europe, the rise and spreading of Islamic civilizations until the 15th century.

Course Resources
There is no prescribed book for this course, but the readings will be available on the Blackboard. Weekly readings are indispensable resources to prepare the exams and quizzes. Most importantly, they will allow us to have good discussions in-class and you are expected to read them during the whole semester. The slides and power points to the lectures are also available on the Blackboard. Use them to complement your lecture notes when you review for the exams.

Attendance: Online attendance is not obligatory during the class time. The course videos will be uploaded to Blackboard. However, if you participate in the class (answering questions, giving your opinion etc.) this will be reflected to your grade at the end of the semester.

Course evaluation:
The evaluation of the course material will consist of the following sections:
1. Presentation in class
During the semester you will be asked to give a 5-minute power point presentation. Starting from the Week 4, we will have 4 or 5 presentations per class. By presenting a specific case study, you will get the chance to further your knowledge gained in class through the independent research. Due to online teaching, you will be expected to record your presentation beforehand and send it to me before the class time.
2. Assignments: Since there is no obligatory attendance, in order to assess your interest and attention I will ask you to do 5 short assignments during the course of the semester. These might

be questions about a video that I will show or a lecture given by a guest speaker. Everything will be available on Blackboard.

3. Quiz 1 and Quiz 2

The course material discussed in class as well as the information offered in the selected readings will be evaluated by means of 2 quizzes in the middle of the semester and at the end of the semester. The format will be multiple choice and short answers and we will use Blackboard as a platform. More information will be provided closer to the exam date.

The grade distribution will be as follows:

- Assignments: 10%
- Presentation in class: 20%
- Quiz 1: 30%
- Quiz 2: 40%

For all these (presentations, assignments, exams etc), I will be sending the class emails as prompts. You should read all the emails carefully!!!

Grading Scale

A (90+), A- (87+), B+ (83+), B (80+), B- (77+), C+ (73+), C (70+), C- (67+), D+ (64+), D (60+), F (0-59).

Academic Conduct

Plagiarism and any other form of cheating will not be tolerated and will be automatically subject to disciplinary action. For details on what constitutes cheating and plagiarism please read Koç University's Student Code of Conduct: http://vpaa.ku.edu.tr/academic/student-code-of-conduct

Except in case of a serious medical or personal reason and providing written documentation, the exam date cannot be changed and late submissions will decrease your grade.

Generally, students are expected to abide by the code of conduct specified in Rules and Regulations: http://dos.ku.edu.tr/regulations and Classroom Code of Conduct: http://vpaa.ku.edu.tr/academic/classroom-code-of-conduct

The syllabus is subject to change, so make sure you stay informed.

Absences from class will negatively impact your performance and as a result, your course evaluation. In case of justified absence, it is your responsibility to find out what you missed in class, by going on Blackboard, where all the visual material presented in class is uploaded, and announcements and assignments posted, and by asking other students for lecture notes.

2024-2025 Academic Year, FALL Term

GERM301 -CSSH: GERMAN III: INTERMEDIATE

COURSE SYLLABUS

Instructor	**: Öğr. Gör. Dr. Özlem AGVAN**
Office Hours	**:** Please Contact with e-mail.
Course Duration	**:** 14 Week with 2 course hours (70 min.; each week)
E-Mail	**:** oagvan@ku.edu.tr
Course Material	**:** Studio 21- Das Deutschbuch A2.1, Cornelsen Verlag

I. COURSE OVERVIEW

To participate in this course, students must have taken GERM 201 and GERM 202 at Koç-University or completed A1 level at another institution.

This course is designed for A2.1 students. The primary aim of the course is to develop speaking, listening, writing and reading skills. During the course, students will learn how to use German language effectively.

II. TEACHING METHOD AND MATERIAL

This course follows a communicative approach in language learning and teaching which involves partner- and group work in class. Learning will be accomplished by using the target language in tasks and class activities. The acquisition of a correct pronunciation will be emphasized in each lecture.

- Studio 21 A2: Teilband 1 (Kurs- und Übungsbuch mit DVD-ROM) Funk, Hermann ISBN 9783065205900 Cornelsen.
- Other material and handouts will be dealt with and uploaded to Blackboard after each course.

III. GENERAL COURSE OBJECTIVES

By the end of the course, students will be able to

- talk about languages
- give reasons
- talk about their own learning biography
- talk about family and family celebrations
- invite someone
- tell his/her opinion
- talk about a journey

- read timetables
- plan and book a trip
- express opposites: but
- express alternatives: or
- talk about hobbies and interests
- respond positively / negatively or surprised to a situation
- talk about media
- write brief, personal messages (SMS, e-mail)
- reclaim something
- read a menu
- order something in a restaurant
- talk about acquaintances and contacts.

❖ **OVERALL STRUCTURE OF THE COURSE AND REQUIREMENTS**

- To reach the course aims, students are expected to come to class prepared and on time, doing necessary readings and assignments in advance. Active participation in class activities and discussions is of much importance.
- Students are responsible for following the announcements made in the classroom and Course's Blackboard platform.
- The class materials and announcements are shared on Blackboard. In case of any emergency/problem, students are required to contact their instructors via **KOÇ University e-mail.**

III. ASSESSMENT AND GRADING

The following table lists all assignments and their values. You must complete all the required assignments in order for you to receive full credit for the course.

Attendance **(10 pts.)** **Midterm** **(25 pts.)** **Speaking Assignment** **(25 pts.)** **Final** **(40 pts.)**	**Assessment (out of 100)** In-term Activities 60 % (Attendance 10+ Midterm 25+ Speaking Assignment II 25) Final 40 %	**Grading Scale**[1] **A+** 100 **C+** 73-76 **A** 90-99 **C** 70-72 **A-** 87-89 **C-** 67-69 **B+** 83-86 **D+** 64-66 **B** 80-82 **D** 60-63 **B-** 77-79 **F** 59

*** Audit students need a minimum of 60 points (essay + audio homework) and don't have to take the midterm and final in order to pass the course.

[1] https://cssh.ku.edu.tr/en/about/faculty-resources/grading-scale/

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1 WEEK (07-11 October)	-Introduction of the system (lessons, office hours etc.) -Introduction of the Course Outline **<u>Willkommen in A2</u>** -Wiederholung Grammatik A1 - Klassenkameraden kennenlernen und sich selbst vorstellen können Interview mit dem Partner führen können sich verabreden und Termine vereinbaren -Wortschatz von A1 auffrischen. -A1 Grammatik wiederholen. -Text über Landeskunde lesen und die inhaltlich eingebauten Fehler herrausfinden	Studio 21 A2: Teilband 1
2 WEEK (14-18 October)	**<u>Einheit 1: Leben und lernen in Europa</u>** GRAMMATIK Nebensätze mit weil; Komparation mit wie und als; Superlativ: am höchsten, am weichsten. -Wörter zum Thema Biografien. -Gespräche über Sprachen und Biografien verstehen -Über Sprachen und Migration sprechen	Studio 21 A2: Teilband 1
3 WEEK (21-25 October)	**<u>Einheit 1: Leben und lernen in Europa</u>** -Gründe nennen Nebensätze mit weil verstehen und benutzen. Texte über meine eigene Biografie schreiben. -Wörter zum Thema Sprachen und Lernen Komparation mit als und wie verstehen und benutzen den Superlativ verstehen und benutzen; deutsche Wörter erkennen. -Städte und Länder vergleichen den Superlativ verstehen und benutzen Wortakzente im Vergleich erkennen und benutzen.	Studio 21 A2: Teilband 1

4 WEEK (28-01 November) **28.10/29.10 No courses	**Einheit 2: Familiengeschichten** - GRAMMATIK Possesivartikel im Dativ; Adjektive im Dativ; Nebensätze mit dass; Genitiv-s	Studio 21 A2: Teilband 1
5 WEEK (04 - 08 November)	**Einheit 2: Familiengeschichten** -Gespräche über Familie und Verwandtschaft verstehen. -Texte über Familie und Verwandtschaft verstehen. -Über Familie sprechen über Fotos sprechen. -Fotos und Personen beschreiben.	Studio 21 A2: Teilband 1
6 WEEK (11- 15 November)	**Einheit 3: Unterwegs** GRAMMATIK Modalverb sollen -eine Reise planen und buchen. Fahrpläne lesen. -Reisen planen. -die s-Laute: [z], [s] und [ts]. - eine Zugfahrt organisieren. -das Modalverb sollen verstehen und benutzen. Alternativen mit oder ausdrücken. - Wörter zum Thema Verkehr. -Vermutungen äußern Gegensätze mit aber ausdrücken	Studio 21 A2: Teilband 1
7 WEEK (18 - 22 November)	**Midterm (%25) Week**	
8 WEEK (25 - 29 November)	**Einheit 4: Freizeit und Hobbys** GRAMMATIK Reflexivpronomen: sich ausruhen; Zeitadverbien: zuerst, dann, danach; Verben mit Präpositionen: sich ärgern über; Indefinita: niemand, wenige, viele, alle.	Studio 21 A2: Teilband 1
9 WEEK (02 - 06 December)	**Einheit 4: Freizeit und Hobbys** - Texte über Hobbys und Interessen verstehen. -Wörter zum Thema Hobby und Interessen.Gespräche über Hobbys und Interessen verstehen. -Über Hobbys und Interessen sprechen.Texte über meine Freizeit schreiben. -Reflexionspronomen z. B. sich ausruhen verstehen und benutzen die Zeitadverbien: zuerst, dann, danach verstehen und benutzen.	Studio 21 A2: Teilband 1

	Verben mit Präpositionen z. B. sich ärgern über verstehen und benutzen.	
10 WEEK (09 - 13 December)	**Einheit 5: Medien im Alltag** GRAMMATIK Indirekte Fragen im Nebensatz: ob-Sätze / indirekte W-Fragen; Adjektive ohne Artikel: Nominativ und Akkusativ	Studio 21 A2: Teilband 1
11 WEEK (16 - 20 December)	**Einheit 5: Medien im Alltag** -Über Medien sprechen. -Gespräche zum Thema Medien verstehen. -Wörter zum Thema Medien. -Texte zum Thema Medien verstehen. -Kurze Mitteilungen schreiben. -Eine Grafik verstehen und auswerten. - Wörter zum Thema Computer und Internet.	Studio 21 A2: Teilband 1
12 WEEK (23 – 27 December)	**Einheit 6: Ausgehen, Leute treffen** GRAMMATIK Personalpronomen im Dativ: mit dir, mit ihm; Relativsatz Relativpronomen im Nominativ und Akkusativ -	Studio 21 A2: Teilband 1
13 WEEK (30 December – 03 January) 01.01.2025 No courses	**Einheit 6: Ausgehen, Leute treffen** -Gespräche über Kennenlernen und Freizeit verstehen. -Sagen, worauf ich in der Freizeit Lust habe. -Wörter zum Thema Ausgehen. - eine Speisekarte lesen. etwas im Restaurant bestellen. Wörter zum Thema Restaurant. - Relativsätze und Relativpronomen im Nominativ und Akkusativ verstehen und benutzen. -	Studio 21 A2: Teilband 1
14 WEEK (06 - 10 January)	**Speaking Assignment (%25)**	
(13 - 24 January)	****End-of-Term Exam (%40)**	Date & Time of the Exam will be announced by the Students' Office
(25 - 26 January)	**Make-up exams**	Date & Time of the Exam will be announced by the Students' Office

29.01.2025	**Deadline- Handing in of Grades**	

Assessments Methods

Attendance (%10): Courses meet two times each week. Excused absences include family emergencies, illness or medical complications that are proven by a doctor's signature with the specific date of the absence noted.

Note that attendance is calculated as a strict percentage of the number of times you were in class – in other words, every unexcused absence in class counts against your overall semester grade for participation. If you have %90-100 attendance, you receive 100 for attendance.

Midterm (%25): The Midterm will be hold at seventh week. The date will be shared via e-mail and added to KU-Lernhub announcements 15 days before the exam date.

The assignment includes 1/2/3 Units. Contents: Reading, Grammar, Language Elements and Writing.

Speaking Assignment (%25): The Speaking Assignment will be hold at last week. Each student will be given an appointment at courses hours. The date and timeline will be shared via e-mail and added to KU-Lernhub announcements 15 days before the assignment.

Sample assignment questions will be shared before the assignment. Check next page to find the rubric for Speaking Assignment.

End-of-Term Exam (%40) : The Finalexam will be hold between 13 and 24 January 2025.The date and time of the Exam will be announced by the Students' Office. The date will be shared via e-mail and added to KU-Lernhub announcements 15 days before the exam date.

The assignment includes 1/2/3/4/5/6 Units. Contents: Reading, Grammar, Language Elements and Writing.

GER 301- A2.1. Speaking Rubric

RUBRIC	**COMMUNICATIVE ABILITY**	**FLUENCY**	**RANGE AND ACCURACY OF GRAMMAR**	**RANGE AND ACCURACYOF VOCABULARY**	**PRONUNCIATION**
GOOD (%85-100)	Comprehends ***most*** parts of the task. Understands questions with ***few*** repetitions. Responses are ***mostly*** appropriate – ***longer sentences.***	Pauses and hesitations ***do nothinder*** communication. Answers are ***natural***. Speaks at a ***comfortable, natural pace.***	A ***wide*** range of structures used ***mostly correctly***. ***A few*** grammatical errors withboth ***basic and complex structures without causing communication breakdowns.***	A ***wide range*** of vocabulary used ***correctly***.	***Clear*** pronunciation of sounds/words ***most of the time.*** ***Correct*** sentence inflection is used.
NEEDS IMPROVEMENT (%60- 84)	Comprehends ***some*** parts of thetask. Needs ***some*** repetition. ***Some*** responses are appropriate – ***short sentences***	***A lot of*** pauses andhesitations. ***Mostly*** repeats ***memorized*** chunks. Uses ***Turkish / English*** to keep up. Speech is ***very slow***.	Grammatical errors lead to ***some minor difficulties or onemajor communication breakdown***. ***Limited*** range of structuresused with errors.	***Some*** range of vocabularyused ***incorrectly*** from ***timeto time.***	***Some*** communication problems due to ***unclear*** pronunciation of sounds and/or words. ***Some*** problems in sentence inflection. ***Difficult to hear*** student ***at times.***
POOR (% 59-0)	***Does not*** comprehend task at all. Requires frequent repetition. ***Cannot respond***/ does not respond appropriately –***only at word/phraselevel.***	***Too many long*** pauses. Repeats ***memorized*** chunkswithout understanding. Answers in ***Turkish / English***. Speech is so slow that there are ***major communication breakdowns.***	Grammatical errors ***severelyhinder*** communication. ***No / little range*** of structuresused with ***lots of*** errors.	***Lack*** of vocabulary ***hinders communication***.	***Major*** problems with pronunciation of sounds/words that lead to ***problems in understanding.*** ***Difficult to hear*** student.

GER301- A2.1.- Writing Rubric

RUBRIC	TASK ARCHIEVEMENT	LANGUAGE (GRAMMAR AND VOCABULARY)	ORGANIZATION
GOOD (%85-100)	Considerable variety of ideas, all content points elaborated, independent treatment of topic, relevant to assigned topic, valid ideas organized clearly.	Wide range of appropriate vocabulary and structures, ambitious attempts at complex language. Accurate word choice; confident handling of appropriate language chunks, hardly any errors.	Provides a complete answer that is relevant and meaningful. Text is accurately well organized and coherent, using a range of language chunks taught at these levels. Appropriate ways to communicate and straightforward ideas are used correctly.
NEEDS IMPROVEMENT (%60- 84)	Some valid ideas, some content points elaborated, somewhat choppy but main ideas standout.	Adequate range of language chunks and vocabulary. Well-formed sentences; generally accurate expression; a number of errors may be present but they do not impede communication.	Some information is missing or not always relevant and meaningful. Text is connected and coherent, using basic language chunks. Generally, the ideas to communicate are used without impeding communication. While errors are noticeable, meaning can still be determined.
POOR (% 59-0)	Insufficient treatment of topic, no content point elaborated, non-fluent, ideas often confused or disconnected, lacks logical sequencing.	Limited range of vocabulary. Inadequate use of language chunks, grammar. Spelling errors may obscure communication at times Narrow, inadequate range of language chunks and vocabulary, Illegible writing. A considerable number of errors which impede communication.	The answer is incomplete and/or not relevant and meaningful. Text is incoherent, total absence of language chunks, rather incomprehensible and with a number of organizational errors which seriously impede communication.

Öğr. Gör. Dr. Özlem AGVAN

ETHC 105: Ethics and Everyday Life
Spring 2021

Course Instructor: Elis Şimşon
E-mail: esimson@ku.edu.tr
Office Hours: By appointment.

Course Description:

How do we experience freedom, justice, responsibility, duty, rights, happiness, and virtue in everyday life? What is good and what is evil? What does it mean to lead a good life? How do we pass moral judgments on certain people or situations? What are the reasons or justifications behind those judgments? How do we reason ethically? Why do we need to learn or improve the skills of ethical reasoning?

The course aims to address these questions. We will analyze the various ways of ethical reasoning already taking place in our everyday interactions. By studying some of the most important normative ethical theories we will improve our ethical reasoning skills, and we will be able to challenge weak or wrong reasoning habits. To create productive connections between theory and our everyday life, this course encourages open discussions in which we will use our theoretical readings (Plato, Aristotle, Mill, Kant, Sartre, Arendt, Nietzsche, etc.) to shed light on some of the ethical problems we are confronted with in our daily lives.

Course Material:

All required readings will be available on Blackboard. Lecture slides will be uploaded to Blackboard after each lecture.

Course Requirements:

Final Essay	**40 pts**
Response Papers	**40 pts**
Quizzes	**20 pts**

Lectures:

As you know, according to the new regulations with regards to remote education, all classes are expected to be conducted synchronously using Zoom. All Zoom lectures will be recorded where all recordings will be uploaded to Panopto and be accessible from Blackboard course pages automatically.

However, I still encourage you to participate in the lectures. Since we have a lot of texts to cover, which may be difficult for you to tackle with on your own, it is for your own benefit to participate the online classes, listen carefully to the lectures and ask your questions or point at the things that confuse you immediately.

Essay:

The purpose of the essay is to give you an opportunity to reflect and engage with the ethical questions raised in the lectures. You are expected to present your own process of ethical reasoning. Essays should be around 1000 words. All essays will be submitted through **turnitin.** No late submission is allowed unless these conditions are met: 1) you have a medical reason officially and appropriately documented, and 2) you inform me about your reason **before the due date** and you have my written approval of your excuse.

Discussion Sessions:

Being able to formulate ethical arguments is one of the fundamentals of this course. The discussion sessions are the occasions for you to exercise how to reason ethically, express your opinions and argue for them. Critical thinking requires dialogue, and for dialogue we need a plurality of opinions. Therefore, I ask for your collaboration during these discussion sessions in creating a democratic environment based on respect for the opinions that are voiced. The topic of each discussion session, and the text that is assigned for that topic are indicated on the syllabus. In these sessions we will work on some specific questions and texts. The dates and the topics are already indicated on the schedule below.

Response Papers:

Before each discussion session, I am going to post a question about the text assigned for the discussion session. You have to read the text carefully and answer the question **before** the DS. Your answer should be around 300 words and submitted through Turnitin.
Late submissions are not allowed.

Quizzes:

The quizzes will be either a) on the text that is assigned for the day, tailored for the purpose to check whether you come to class having done the required reading, or b) on an issue we discuss during the week, encouraging you to engage in your own reflection process and form your own opinions about that issue, or c) on that day's lecture to check if you have listened to it carefully.
Each quiz will be 5 points. We will have 5 quizzes during the semesters, but I will omit the one with the lowest grade. There will be no makeup for the quizzes you miss.
I will announce the dates in advance as we follow our schedule.

Policies:

***** A syllabus is a written contract between you and me. If you don't drop the class, it means that you have read the syllabus and accepted the terms provided in this document.

1) I would like to remind you that it is your responsibility to check your emails and to keep track of the syllabus, Blackboard and the deadlines. If I have already sent out a

written message or posted an assignment, or if it is already indicated on the syllabus, then "I didn't know" as an excuse will be irrelevant.

2) Each of the written work you need to do for this course will be submitted through **Turnitin.** As you know, Turnitin generates a similarity report that immediately shows the percentage of the plagiarism committed. So please resist the temptation to copy from the Internet or the secondary sources. Keep in mind that no act of plagiarism will be tolerated. University's policy on academic honesty is available here: https://apdd.ku.edu.tr/en/academic-policies/student-code-of-conduct/ It is *your* responsibility to fully understand what plagiarism is. Please be reminded that "I was not aware this was plagiarism" is never a valid excuse. Even after reading the policy you're still unsure about plagiarism, please ask me.

3) All students have the opportunity to attempt the same work load and their final grade reflects the academic merit of the work they produce. Students cannot achieve grades in any other way. Meaning: please do not ask for extra credit work at the end of the semester, I will not respond.

***** Important Note**

It is my hope that we engage with these texts honestly and faithfully, that we are fair as well as critical, and that we learn to go beyond opinion and into argument. These are the skills not only of a good philosopher, but a fair-minded and articulate critical thinker, and will serve you well wherever you are.

Please keep in mind that I will be happy to help you if you experience any difficulty in understanding the content, writing your response papers, participating in class or preparing for your exams. If you need to talk to me about these issues or anything related with the course, feel free to contact me directly for an appointment.

Grading Scale:

A 90+	B- 77+	D+ 64+
A- 87+	C+ 73+	D 60+
B+ 83+	C 70+	F 59 – 0
B 80+	C- 67+	

TENTATIVE COURSE SCHEDULE

Feb 15	Introduction: Going over the syllabus discussing why we study ethics
Feb 17	What is Ethical Reasoning?
Feb 22	Ethical Relativism / Ethical Objectivism
Feb 24	Ethical Egoism / Altruism
Mar 1	Plato - *The Republic*, Book II – "The Ring of Gyges"
Mar 3	Plato - *Apology of Socrates*
Mar 8	Plato - *Apology of Socrates*
Mar 10	Plato - *The Republic*, Book VI – "Allegory of the Cave"
Mar 15	**Discussion Session 1: On the allegory of the cave** **Required Text:** Plato – *The Republic*, Book VI – "Allegory of the Cave"
Mar 17	Virtue Ethics: Aristotle – Selections from *Nicomachean Ethics*
Mar 22	Virtue Ethics: Epictetus – Self-Discipline
Mar 24	J. S. Mill – *Utilitarianism* & Bernard Williams – "Against Utilitarianism"
Mar 29	Immanuel Kant – Excerpt from *The Groundwork of the Metaphysics of Morals*
Mar 31	Immanuel Kant – Excerpt from *The Groundwork of the Metaphysics of Morals*
Apr 5-11	**SPRING BREAK**
Apr 12	Hannah Arendt – *Eichmann in Jerusalem: A Report on the Banality of Evil*
Apr 14	Hannah Arendt – *Eichmann in Jerusalem: A Report on the Banality of Evil*
Apr 19	**Discussion Session 2: On the banality of Evil** **Required Text:** Hannah Arendt – "Personal Responsibility Under Dictatorship"
Apr 21	Søren Kierkegaard – Excerpt from *Fear and Trembling*
Apr 26	Friedrich Nietzsche – Trans-valuation of Values + Fragments on the Death of God
Apr 28	Jean-Paul Sartre – "Existentialism is a Humanism"
May 3	**Discussion Session 3: On the meaning of life** **Required Text:** Albert Camus – "Myth of Sisyphus"
May 5	Ethics of Care: Carol Gilligan – "In A Different Voice"
May 10	Feminist Ethics: Simon de Beauvoir – "Introduction to *Second Sex" &* Hilde Lindemann – "What is Feminist Ethics?"
May 12	Posthumanist Ethics – Animal Rights & Environmental Ethics
May 17	**Discussion Session 4: On posthumanist ethics** **Required Texts:** Tom Regan – "The Case for Animals" & J. Baird Callicott – "The Land Ethic"
May 19	**No Class**
May 24	Review Session
May 26	**Submission of the Essay (by midnight)**

Data in Culture and Society

SOSC119

Fall 2021

Koç University

Instructor
David Carlson
dcarlson@ku.edu.tr

TA
Oğuz Bülüt Kök
okok20@ku.edu.tr

Class Schedule
Tu-Th 11.30 – 12.40

Office Hours
Tu-Th 13.00 – 14.00 (or by appointment)

Online Access
https://ku.blackboard.com

Introduction

This course, broadly speaking, is designed to familiarize the student with the use, and potential misuse, of data in culture and society. We will discuss the applications of data gathering and analysis, and how this burgeoning practice interacts with our culture and society. Topics will include introductory data science concepts, such as big data and machine learning, in order to better understand and critique the arguments regarding policy implications, ethics, etc.

There are no prerequisites for this course. Students from any background are encouraged to attend.

Requirements and Grading

Grades will not be rounded, these represent strict cut-offs. In the rare event of, for example, exactly a 90, the higher grade will be assigned. Pluses and minuses will be applied at the instructor's discretion and will only be used if there are clear separations within a given grade. Note that the grading cut-offs may differ from other courses.

A	90–100
B	80–90
C	70–80
D	60–70
F	<60

1) *Homework: 50%*

   There will be four graded homeworks throughout the semester (see below for dates and details). These are not meant to be difficult, but instead a demonstration of course understanding and application of learned concepts.

2) *Final Examination: 40%*

   The final examination will be a take-home, short answer format. You will get one week to submit your answers. The exam will expect students to demonstrate and apply key concepts learned in class lectures, discussions, and assigned readings. If all readings are done, and the student attends all lectures, the final should not be difficult. Memorization will not be necessary; instead an undertanding of the course material should be demonstrated.

3) *Attendance: 10%*

   Attendance will be taken regularly. Unexecused absences will not be tolerated, and your final grade will drop for absences. More precisely, you are allowed three unexcused absences. After three, each missed class will drop your participation grade by one letter grade (10%). The instructor must be informed of any absences ahead of time if possible, and reserves the right to decide to excuse it or not. If you cannot come to class, simply email the instructor before class starts. Do not abuse this policy.

Disclaimer on Class Recordings

The synchronous sessions are recorded (audiovisual recordings). The students are not required to keep their cameras on during class.
The audiovisual recordings, presentations, readings and any other works offered as the course materials aim to support remote and online learning. They are only for the personal use of the students. Further use of course materials other than the personal and educational purposes as defined in this disclaimer, such as making copies, reproductions, replications, submission and sharing on different platforms including the digital ones or commercial usages are strictly prohibited and illegal.
The persons violating the above-mentioned prohibitions can be subject to the administrative, civil, and criminal sanctions under the Law on Higher Education Nr. 2547, the By-Law on Disciplinary Matters of Higher Education Students, the Law on Intellectual Property Nr. 5846, the Criminal Law Nr. 5237, the Law on Obligations Nr. 6098, and any other relevant legislation.
The academic expressions, views, and discussions in the course materials including the audiovisual recordings fall within the scope of the freedom of science and art.

Academic Integrity at Koç University

Koç University expects all its students to perform course-related activities in accordance with the rules set forth in the Student Code of Conduct (`http://vpaa.ku.edu.tr/academic/student-code-of-conduct`). Actions considered as academic dishonesty at Koç University include but are not limited to cheating, plagiarism, collusion, and impersonating. This statements goal is to draw attention to cheating and plagiarism related actions deemed unacceptable within the context of Student Code of Conduct:

All individual assignments must be completed by the student himself/herself, and all team assignments must be completed by the members of the team, without the aid of other individuals. If a team member does not contribute to the written documents or participate in the activities of the team, his/her name should not appear on the work submitted for evaluation.

Plagiarism is defined as "borrowing or using someone else's written statements or ideas without giving written acknowledgement to the author." Students are encouraged to conduct research beyond the course material, but they must not use any documents pre-

pared by current or previous students, or notes prepared by instructors at Koç University or other universities without properly citing the source. Furthermore, students are expected to adhere to the Classroom Code of Conduct (http://vpaa.ku.edu.tr/academic/classroom-code-of-conduct) and to refrain from all forms of unacceptable behavior during lectures. Failure to adhere to expected behavior may result in disciplinary action.

There are two kinds of plagiarism: Intentional and accidental. Intentional plagiarism (Example: Using a classmate's homework as one's own because the student does not want to spend time working on that homework) is considered intellectual theft, and there is no need to emphasize the wrongfulness of this act. Accidental plagiarism, on the other hand, may be considered as a 'more acceptable' form of plagiarism by some students, which is certainly not how it is perceived by the University administration and faculty. The student is responsible for properly citing a source if he/she is making use of another person's work.

If you are unsure whether the action you will take would be a violation of Koç University's Student Code of Conduct, please consult with your instructor before taking that action.

Further Policies

Participation will not be graded. However, it is essential to understand and engage with the material. Moreover, the class will be exceedingly boring if you do not participate. A key component of this course is discussion and expressing and debating your views. As the classes will be recorded, if for any reason you feel uncomfortable expressing an opinion, you can message the instructor directly on Zoom with any comments or questions, which will then be read anonymously. We will have break-out sessions during class. At the end of the session, it is expected that at least one person from your group participate and share what was discussed.

If you find concepts unclear or difficult, you are encouraged to attend office hours. The instructor reserves the right to dismiss a student from office hours if it is clear the readings were not done. The purpose of office hours is to help, not do the readings for you.

A missed deadline may result in a zero for that grade if not deemed admissible by the instructor.

Any concerns about the grading must be addressed to the instructor in writing. Only after reviewing the complaint or concern will the instructor see the student during office hours to discuss it. Beyond the written prompt, the instructor will only discuss grades and work in person.

All communication is to be done in English. However, because students come from different backgrounds, do not let this obstruct your willingness to participate or attend office hours. Points will not be deducted if the student attempts to communicate in English but has to ask for assistance.

If you require any special attention, please discuss it with the instructor as soon as possible.

Do not show up to class late or leave early. This is disruptive and rude. Doing so will result in the loss of your attendance for that day.

All slides will be posted on Blackboard, and all classes will be recorded and available on Blackboard. Keep this in mind while taking notes.

Course Schedule

This schedule is tentative. The instructor has the right to change it at any time, add or take away readings, etc. Students are expected to keep up with announcements in class and on Blackboard with regards to changes in the schedule. There is no textbook required, only online readings and readings posted on Blackboard.

Week 1: What is big data, and how do we learn from it?

Reading:
Lazer, David, Ryan Kennedy, Gary King, and Allessandro Vespignani. "The Parable of Google Flu: Traps in Big Data Analysis." *Science* 14 March 2-14: 1203–1205. Available at https://science.sciencemag.org/content/343/6176/1203

Watch: "What Exactly is Big Data and Why Should You Care?". *Forbes* April 22, 2016. Available at: https://www.youtube.com/watch?v=jGhRiwGHh30

Watch: "Data is Power." *Google Zeitgeist*
Available at: https://www.youtube.com/watch?v=MfGZMmOly1Uab_channel=GoogleZeitgeist

Week 2: The data available to us

Reading:

Marr, Bernard. "Big Data And AI: 30 Amazing (And Free) Public Data Sources For 2018." *Forbes* Feb. 26, 2018. Available at: https://www.forbes.com/sites/bernardmarr/2018/02/26/big-data-and-ai-30-amazing-and-free-public-data-sources-for-2018/76f1b4cf5f8a

Week 2.5: The relationship between the scientific method and statistics

Reading:

Snedecor, George W. "The Statistical Part of the Scientific Method." 1950. Available at: https://nyaspubs.onlinelibrary.wiley.com/doi/pdf/10.1111/j.1749-6632.1950.tb53972.x

Week 3: Popular consumption of statistics

Reading:

Amrhein, Valentin, Sander Greenland, and Blake McShane. "Scientists rise up against statistical significance." *Nature* 20 March 2019. Available at: https://www.nature.com/articles/d41586-019-00857-9?utm_source=fbk_nncutm_medium=socialutm_campaign=naturenewssf209757610=1

Spacey, John. "17 Misuses of Statistics." *Simplicable* March 26, 2016. Available at: https://simplicable.com/new/misuse-of-statistics

"The Subtle Joys of Selecting on the Dependent Variable." November 7, 2013. Available at: https://beerbrarian.blogspot.com/2013/11/the-subtle-joys-of-selecting-on.html

Week 4: An introduction to machine learning concepts

Reading:

Burrell, J. (2016). "How the machine 'thinks': Understanding opacity in machine learning algorithms." *Big Data & Society*. Available at: https://journals.sagepub.com/doi/full/10.1177/2053951715622512articleCitationDownloadContainer

Homework due: Submit a newspaper or magazine article that misuses statistics or misleads the reader (such as selecting on the variable of interest). Write no more than one page (double-spaced) about the misuse, why it is misleading, and how the study could have been better presented.

Week 5: The promise and peril of living in a data-driven society

Reading:

Bostrom, Nick. "The Future of Humankind." *Scientific American* July 1, 2005. Available at: https://www.scientificamerican.com/article/the-future-of-humankind/?redirect=1

Lohr, Steve. "The Promise and Peril of the 'Data-Driven Society'." *The New York Times* February 25, 2013. Available at: https://bits.blogs.nytimes.com/2013/02/25/the-promise-and-peril-of-the-data-driven-society/

Week 6: Algorithmic culture

Reading:

Striphas, T. (2015). "Algorithmic culture." *European Journal of Cultural Studies* 18(45), 395412. Available at: https://journals.sagepub.com/doi/full/10.1177/1367549415577392articleCitationDownloadContainer

Homework due: Write a one-page response to the following question: Are data and data analysis headed towards a so-called hell scenario, heaven scenario, or neither?

Week 7: On the disadvantages of using social media data, Cambridge Analytica scandal, and monopolization of data collection

Reading:

Lapowsky, Issie. "How Cambridge Analytica Sparked the Great Privacy Awakening." *Wired* March 17, 2019. Available at: https://www.wired.com/story/cambridge-analytica-facebook-privacy-awakening/

Prokop, Andrew. "Cambridge Analytica shutting down: the firms many scandals, explained." *Vox* May 2, 2018. Available at: https://www.vox.com/policy-and-politics/2018/3/21/17141428/analytica-trump-russia-mueller

Week 8: Should we be afraid of targeted ads?

Reading:

Christopher A. Summers, Robert W. Smith, Rebecca Walker Reczek. "An Audience of One: Behaviorally Targeted Ads as Implied Social Labels." *Journal of Consumer Research*, Volume 43, Issue 1, June 2016, Pages 156–178. Available on Blackboard.

Week 9: Big data and law enforcement

Reading:

Tashea, Jason. "Websites and apps for sharing crime and safety data have become outlets for racial profiling." *ABA Journal* August 1, 2016. Available at: http://www.abajournal.com/magazine/article/crime_safety_website_racial_profiling

Davenport, Thomas H. "How Big Data Is Helping the NYPD Solve Crimes Faster." *Fortune* July 17, 2016. Available at: http://fortune.com/2016/07/17/big-data-nypd-situational-awareness/

2020. Ryan-Mosley, Tate. "There is a crisis of face recognition and policing in the US." *MIT Technology Review*. Available at: https://www.technologyreview.com/2020/08/14/1006904/there-is-a-crisis-of-face-recognition-and-policing-in-the-us/

Homework due: Write a one-page discussion (double-spaced) about how data should and should not be used. This should be opiniated, but backed with well-reasoned arguments.

Week 10: Fake news

Reading:

Lazer, David MJ, Matthew A. Baum, Yochai Benkler, Adam J. Berinsky, Kelly M. Greenhill, Filippo Menczer, Miriam J. Metzger et al. "The science of fake news." *Science* 359, no. 6380 (2018): 1094-1096. Available at: https://science.sciencemag.org/content/359/6380/1094

Week 11: Biased algorithms

Reading:

Listen: "Why Machines Discriminate—and How to Fix Them." *Science Friday* 20 November 2015. Available at: https://www.sciencefriday.com/segments/why-machines-discriminate-and-how-to-fix-them/

Watch: O'Neil, Cathy. "The era of blind faith in big data must end." *TED Talks*. Available at: https://www.youtube.com/watch?v=_2u_eHHzRtoab_channel=TED

Week 12: Government data, data policy, and data privacy

Reading:

Sanders, Lewis. "What is GDPR, the EU's data protection law?" 24 May 2018. Available at: https://www.dw.com/en/what-is-gdpr-the-eus-data-protection-law/a-43901782

Bates, Jo. "The strategic importance of information policy for the contemporary neoliberal state: The case of Open Government Data in the United Kingdom." *Government Information Quarterly* Volume 31, Issue 3, July 2014, Pages 388–395. Available at: https://www.sciencedirect.com/science/article/pii/S0740624X14000951

Ramos, Jose. "Anticipatory Governance — A Primer." *Medium*. Available at: https://medium.com/@jose
governance-some-starting-points-f16ae2fb6d06

Week 13: The ethics of data science

Reading:

Wallach, Hanna. "Big Data, Machine Learning, and the Social Sciences: Fairness, Accountability, and Transparency." Dec. 19, 2014. Available at: https://medium.com/@hannawallach/big-data-machine-learning-and-the-social-sciences-927a8e20460d

Watch: "The Ethics of Data — Education & Self-management." *BBC Research & Development* March 16, 2016. Available at: https://www.youtube.com/watch?v=3NUVZdvIUkM

Homework due: Write a one- or two-page memo outlining the ideal policy for a government regarding the trade-off between censorship and freedom of expression as it relates to data privacy.

Week 14: What does a data scientist do?

Guest lecture: Data scientist Dominic Jarkey from YouGov.

Reading:

Castrounis, Alex. "What Is Data Science, and What Does a Data Scientist Do?" Available at: https://www.innoarchitech.com/blog/what-is-data-science-does-data-scientist-do

Time permitting, we will also discuss Data Science for the Social Good this week as a conclusion.

Final Exam: Date TBA

Imagining the Other

ASIU 102 – Fall 2024

Koç University

Class Days/Hours: M/W, 1-2:10 pm

Room: SNAB 153

Instructor: Jasmine Erdener, PhD, jerdener@ku.edu.tr

Office Location: Social Sciences building, office Z08C

Office Hours: M/W 16:00-17:00, or you can email me to set up a time.

Syllabus may change as the semester progresses – please keep an eye on the learning platform, and for any announcements in class.

Course Description

This course examines how different social groups are helped or marginalized through technology. What social norms and values do robots, cyborgs, artificial intelligence, or digital humans contain, and impart? Who are these technologies modeled after or intended to reach? How do we imagine the self as mediated through technology? The class focuses on how the Other is constructed through technological artifacts and theories, and imagines different approaches to technology and society.

Course Objectives

Through this class, students will become familiar with key ideas and concepts in critical theory and science and technology studies (STS). We will examine how power and politics are intertwined with technology. This class is based in writing and analysis; students will learn to analyze case studies using academic theory and through written responses and short presentations. Assignments and in-class activities will help students understand, develop, and prepare the final paper.

Grades and Course Requirements

You must complete the assigned readings *before* coming to class. The syllabus and readings will be available on Blackboard. Your grades will be posted on Blackboard throughout the semester.
I will announce any changes to the syllabus during class. It is your responsibility to attend class and to keep an eye on the "Announcements" section of the course Blackboard page.

The class has several small grades so that you have multiple opportunities to succeed.

- **Discussion Board posts: 5%**
    - You will receive a completion grade for writing six (6) thoughtful discussion board posts. More detailed instructions are available on Blackboard.
- **In-class activities (graded): 15%**
    - Five (5) times during the semester, we will do in-class activities. There are no make-up options unless you have a medical note.
- **Ethics assignment: 20%**
    - Analyze an example of technology or suggest better policy to regulate an existing technology to make it more equal or more accessible for different people.
- **Final paper abstract: 20%**
    - In preparation for the final paper, you will write a detailed outline of your main idea, your argument, your technology examples, and the readings from class that you plan to use.
- **Final paper: 40%**
    - 1000-1300 words, double-spaced, 12-point standard font, 1-inch margins.

Attendance

- Starting the second week of class, I will take attendance during each class. I will not give a grade for attendance, but I will be keeping track of how often you attend class.
- Attending class regularly is the best predictor for academic success!
- If you do miss class, you are responsible for finding out what we covered before the next session.

Participation and Engagement

I am not taking a participation grade, but I expect that you will be an engaged student in our class. This means not only how *often* you contribute to our class discussions, but the degree to which your contributions are *constructive and generative*.
Here are ways that you can participate in class:

- **Contributing to in-class discussions** – asking questions, sharing your thoughts, raising a point from the readings, bringing in additional examples, etc.
- **Mutual aid** – sharing your notes/reflections from class or about the readings on Blackboard.

- **Reading insights** – posting questions/comments/analyses of the readings on Blackboard or bringing in examples of technology and relating it to our class discussions/readings.

Pandemic info

- Although masks are no longer required, I strongly encourage you to wear them when you are in large group settings.
- If you are not feeling well, please wear a mask to protect the health of those around you.

Electronics

- Please use your devices for academic purposes **only**. It is easy to get distracted, but please reserve class time for academic work. Place your phone on mute before you start class and keep it out of sight during class.
- You may not record this class (voice or video recordings). **You may not post material from this class on social media or other public platforms**.
- Class session recordings will be available on Panopto upon request and should not be distributed outside of class.

Contacting the Instructor

I am generally able to reply to emails within 24 hours during the week, Monday through Friday. I do not check email in the evening. If you send an email over the weekend, the earliest you should expect a reply is Monday, although you may receive a reply sooner.

You might also consult this guide 😊 https://medium.com/@lportwoodstacer/how-to-email-your-professor-without-being-annoying-af-cf64ae0e4087

Academic Integrity

Academic honesty is **critical**. Students who violate the code of academic integrity will be sanctioned accordingly, and students may be referred to the Office of Student Conduct.

Violations include plagiarizing all or part of a written or oral assignment, fabricating sources or data, and submitting the same paper or work to multiple professors without prior permission.

An act of plagiarism may result in a failing grade for the assignment, and depending upon the degree of severity, may result in a failing grade for the course.

- Plagiarism is using another person's words, ideas, phrasing, assertions, data or figures without citing them or acknowledging their work.

- This includes any text generated by AI. I am evaluating YOUR ideas and thinking, not another person's paper or an AI.
    - Please see the Koç University Policy on AI generated text: https://kolt.ku.edu.tr/artificial-intelligence/

For more resources, see:

- The Koç University Writing Center: https://writingcenter.ku.edu.tr/
- The Koç Student Code of Conduct: https://apdd.ku.edu.tr/en/academic-policies/student-code-of-conduct/
- University of Washington Citation Basics: https://guides.lib.uw.edu/research/citations/citation-basics
- Purdue Online Writing Lab: https://owl.purdue.edu/owl/research_and_citation/resources.html
- Yale Center for Teaching and Learning: https://poorvucenter.yale.edu/writing/using-sources/understanding-and-avoiding-plagiarism/warning-when-you-must-cite
- Extensive resources from Carnegie Mellon University on all aspects of student life: https://www.cmu.edu/student-success/other-resources/handouts/index.html

Academic Writing 101
Spring 2021

Instructor: John Casquarelli
Email: jcasquerelli@ku.edu.tr
Online Contact: M/W
Office Hours: Thursday 10:00—15:00

Course Description:

ACWR 101 makes use of a content-based approach to initiate students into the conventions of academic language and discourse. The ACWR 101 course will be conducted online, and students will be able to access all class materials through a number of different online platforms. In addition to the online interaction, the course supports students with written and verbal feedback sessions. While emphasis is placed on developing writing through a process-based approach, other linguistic and critical skills are also covered. Students are expected to improve their reading and writing abilities so that they can produce clear, linguistically accurate, sophisticated discourse suitable in a variety of academic settings. Ultimately, students are expected to develop their independent, authoritative, individual academic "voice."

In the ACWR 101 Course, students will:

- develop a process-based approach to academic writing;
- acquire a basic knowledge of and ability to use APA documentation, including in-text citation and a reference page;
- organise and express ideas in a manner appropriate to audience and purpose;
- familiarise themselves with strategies for different kinds of writing;
- accurately employ the tools of paraphrase and quotation;
- present their writing in a format appropriate for formal academic writing that uses academic vocabulary and employs high standards of grammar, usage and mechanics.

Course Theme: Ethics in the Entertainment Industry

This course will focus on numerous ethical challenges in the entertainment industry. Some topics that we will explore include objectification, sexism, violence, child abuse, dehumanization, competition, and potential cognitive health benefits in various entertainment industries such as film, advertising, sports, and music. Are the choices we make free or part of a business strategy? Are collegiate sports and higher education compatible or conflictive? Why is there a lack of diversity in the film industry? We will explore these and many other questions pertaining to ethics in entertainment.

Overall Course Requirements and Grading:

Essay 1 Final	**35%**
Essay 2 Final	**45%**
Peer Review (Essay 2 Draft)	**5%**
Homework and Class Tasks	**15%**

Required Course Materials:
All required readings and course materials will be uploaded to Blackboard

Homework and Class Tasks

Homework and class tasks are requirements of the online ACWR 101 Course. Points will be awarded for completing homework assignments and class tasks, contributing to online discussions, and uploading required tasks in a timely manner. In order to earn your homework and class tasks points, you will need to access the online class materials, read the task instructions and submit the task on the designated date. Official excuses and medical reports will not be accepted for homework and class task submissions. Non-submission, incomplete submissions and/or late submissions of the abovementioned will negatively impact your homework and class task grade.

Detailed Policy on Late Essay Submissions:

Students may hand in late essays, but the student's grade will be deducted by 5 points for each day late. Essays submitted five days after the deadline will not be awarded a grade. An instructor may accept late essay submissions, but the instructor is not obliged to read, or provide feedback on work that is excessively late. Official excuses and medical reports will not be accepted for essay due dates. If you are not able to hand in an essay due to an emergency situation, please contact your instructor as soon as possible.

Essay Submissions

Essay 1 Final and Essay 2 Final must be submitted on Blackboard via Turnitin. Instructors will not accept essay submissions via email.

Student Assignment Agreement

Please be aware of the Koç University Student Assignment Agreement for all homework assignments, class tasks and essay submissions. When submitting your work online, you are agreeing to the following:

I hereby accept that only the below listed sources are approved to be used for ACWR 101 assignments:

(i) Coursebook (Readings)
(ii) All material that is made available to students via Blackboard for this course, and
(iii) Notes taken by me during lectures.

I have not used, accessed, or taken any unpermitted information from any other source. Hence, all effort belongs to me.

You MUST copy and paste the Student Assignment Agreement to each Essay Submission

Online Semester:

The ACWR 101 Course will be completely online this semester. Our primary platform for all class materials and assessment uploads will be Blackboard.

If you have never used Blackboard, you should contact:
Koç Office of Learning and Teaching (KOLT) kolt@ku.edu.tr OR elearning@ku.edu.tr
The helpful KOLT team are always happy to provide training and/or assistance to you.

If you have computer/system problems during the semester, you should immediately contact:
Koç IT Remote Services through IT-Track-it it@ku.edu.tr

Please note: Contacting IT-Track-it should be your **first priority** if any system or internet problem occurs when attempting to submit assessments or graded tasks.

Plagiarism and Collusion Policy:

Plagiarism is presenting someone else's words or ideas as your own, without proper reference. Any student found plagiarising or colluding in writing assignments may fail the assignment, fail the course, and/or be referred to the university's disciplinary council. This may result in suspension from the university.
Work is considered to be plagiarised when:

- You copy someone else's writing and do not put it in quotation marks and identify the source.
- You take someone else's writing, change some of the words, and do not identify the source.

- You take someone else's ideas or sequence of ideas, put them into your own words, and do not identify the source.
- Someone else writes your assignments or changes your writing and thus creates a false impression of your abilities.

You engage in collusion when:

- You receive unauthorized help with your writing by paying or otherwise inducing another person to do the writing for you.

Grading Scale:

· **A+ = 100 – 97%**	**B+ = 86 – 83 %**	**C+ = 76 – 73 %**	**D+ = 66 – 63 %**
· **A = 96 – 90%**	**B = 82 – 80 %**	**C = 72 – 70%**	**D = 62 – 60 %**
· **A- = 89 – 87%**	**B- = 79 – 77%**	**C- = 69 – 67%**	**F = 59 – 0%**

Grade Disputes:

As a student, you have the right to petition for the reassessment of one or multiple course assignments. If you believe that an assignment has been unfairly or inaccurately graded, please follow these instructions:

1. Make an online appointment with your instructor as soon as possible once the grade has been posted in order to discuss your concerns.

2. During your online meeting, ask the instructor to explain how the assignment was graded in terms of Content, Organization, and Language/Mechanics or other grading criteria. Clarify with your instructor whether your grade was penalized due to late submission, failure to comply with certain instructions, failure to meet the goals for the assignment, or for any other reason. If you have difficulty understanding your instructor's explanation, ask for the explanation in written form. If you remain unsatisfied with your instructor's explanation of the grade, then proceed to step 3.

3. Send a detailed petition via email to Merve Dalyaprak in the CSSH Dean's Office – mdalyaprak@ku.edu.tr

4. If you have concerns about multiple assignments, include a **separate petition form for each assignment** you request to be reassessed. You may **NOT** fill out a petition asking for all course assignments to be reviewed.

5. Keep in mind that your assignment grade and your final grade in the course **may go up, down, or remain unchanged** as a result of the reassessment process.
6. These petitions will only be accepted **within seven days** after the grade has been posted to discuss the grade(s) in question.

ACWR-101: Daily Class Schedule, Spring 2021

*This schedule is tentative. Any changes will be announced by email.

Week	Class Instruction Aims and Objectives	Assignments/ Due Dates
WK 1 Feb. 15 – 19	• Introduction to the theme: Ethics in the Entertainment Industry • How we define and identify ethical challenges • Prewriting techniques • Course Syllabus	
WK 2 Feb. 22 -26	• Critical reading strategies: note-taking, annotation skills, identifying main arguments/ideas • Basic elements of good writing. Paragraph structure: Topic sentences, supporting points, coherence, linkers, concluding sentences • Vocabulary/Terms • Developing a thesis	Hand out **Essay 1 Prompt**
WK 3 Mar. 1 - 5	• Task Analysis: Developing an argument and responding to a prompt • Critical thinking + Class Discussions - ongoing. • Brainstorming	
WK 4 Mar. 8 - 12	• APA Citations + Quoting and Paraphrasing Skills • Integrating sources into Body Paragraphs • Reporting verbs/signal verbs and transitional phrases	***Mandatory Class Task 1 due this week**
WK 5 Mar. 15– 19	• How to write an effective conclusion • APA Reference Page • Subject/Verb agreement • **APA Quiz**	
WK 6 Mar. 22 - 26	• **Optional Essay Consultations**	
WK 7	• **Continue Optional Essay Consultations**	***Essay 1 Final due after Optional Consultations this week.** No draft. Final

Mar. 29 - Apr. 2		to be graded with rubric/number score and detailed written feedback. Return grades & feedback before end of Week 10
WK 8 Apr. 5 – 9 ***Holiday week**	**All classes cancelled** **Spring Break :)**	
WK 9 Apr. 12 – 16	• How to Build upon the skills from Essay 1 and transfer them to Essay 2. • Elements of argument • Vocabulary/Terms • Integrating multiple sources • Unity/Coherence	Hand out **Essay 2 Prompt**
WK 10 Apr. 19 -23 ***Holiday Fri 23 April**	• Vocabulary/Terms • Brainstorming/developing an essay outline	**Return graded papers this week so that students have time to incorporate feedback into Essay 2.** *Give a general feedback lesson
WK 11 Apr. 26 – 30		***Schedule Library Webinar**
WK 12 May 3 – 7	• Integrating Sources Effectively - APA citations + Transitions for linking & connecting/comparing contrasting	***Mandatory Class Task 2 due Monday/Tuesday this week**. Provide feedback by the end of this week.
WK 13 May 10 – 14 ***Holiday Week**	**All classes cancelled – Bayram :)**	
WK 14 May 17 - 21 ***Holiday: Wed May 19th**	**Cancel classes: Start Optional Essay Consultations**	* **Essay 2 Draft Peer Review (5%)** – Monday morning?
Week 15 May 24 – 28	**Cancel Class: Continue Optional Essay Consultations**	* **Essay 2 Final (45%) due end of this week** ***Graded with rubric & score**

Note: You MUST include the honor code at the end of every assignment posted on Turnitin! Cut and paste the bolded section below into your document and then type your name as a signature.

Honor Code
According to university policy, for all assignments that must be completed individually (quizzes, exams, or discussion boards, etc.), participating students are required to digitally add and approve the agreement below:

I hereby declare that I have completed this assignment individually, without support from anyone else. I hereby accept that only the below listed sources are approved to be used during this open-source assignment:
(i) Coursebook,
(ii) All material that is made available to students via Blackboard for this course, and
(iii) Notes taken by me during lectures.
I have not used, accessed, or taken any unpermitted information from any other source. Hence, all effort belongs to me. -- Type your Full Name

ECSA 220 (01) GLOBAL BUSINESS STRATEGY

Summer 2023

1. Course Information

Instructor:	Altay Atli, AATLI@KU.EDU.TR
KU Credits:	3.00
ECTS Credits:	6.00
Prerequisite(s):	
Class Location & Meeting Times:	SNA B119 - Monday, Tuesday, Wednesday, Thursday 10:00-11:10
PS (Yes/No):	No
DS (Yes/No):	No
Lab (Yes/No):	No
Language of Instruction:	English
Office Hours:	MoWe 9:00-10:00 or by appointment.

2. Course Description

Conceptual and empirical understanding of the globalization of business in an era of turbulence and uncertainty. Discovering the tools of global business including international trade, foreign direct investments, foreign exchange and regional integration. Building up the foundations of a global business strategy with a focus on entering foreign markets, global entrepreneurship, managing competition, analyzing market potential with a focus on emerging markets, esp. Asia. Exploring the dynamics of becoming a global corporate citizen by managing cultural differences, dealing with geopolitical risks, and formulating social responsibility initiatives

3. Course Overview

This course aims to equip the students with a conceptual and empirical understanding of the globalization of business in an era of turbulence and uncertainty. Starting with an exploration of the tools of global business including international trade, foreign direct investments, foreign exchange and regional integration, the course will build up the foundations of a global business strategy with a focus on entering foreign markets, global entrepreneurship, managing competition, analysing market potential with particular emphasis on emerging markets, esp. the Asia-Pacific. Students will also be introduced to the tenets of becoming a global corporate citizen by managing cultural differences, dealing with geopolitical risks, and formulating social responsibility initiatives.

4. Course Learning Outcomes (CLOs) & Program Learning Outcomes (PLOs):

CLO #	**Upon successful completion of this course, students will be able to**…
1	Demonstrate an understanding of the complex nature of the global environment and how it influences businesses.
2	Develop an understanding of how international business strategies are formulated and decisions are made.
3	Apply concepts and frameworks in developing international business ideas.
4	Establish an awareness of the responsibilities of businesspeople in the global environment.

BUSAD – Program Learning Outcomes:

PLO #	Description	Level of Mastery
1	Recognize, critically analyze and develop solutions to managerial, economic and political issues in personal and professional environments	2 - Intermediate
2	Formulate and communicate arguments effectively in oral, written and graphical form	2 - Intermediate
3	Thrive in diverse, multi disciplinary teams and take initiative as responsible team members	0 - Not Addressed
4	Maintain a global, socially inclusive and ethical perspective with emphasis on sustainability	1 - Introductory
5	Learn fundamental concepts and theories to formulate and implement and creative and effective solutions to management challenges	2 - Intermediate
6	Use the appropriate research methods and tools to analyze data for managerial decision making	1 - Introductory

5. Assessment Methods

Method	Description	Weight %
Participation	Attendance and active participation in class dicussions	15.00
Essay	Take home essay	35.00
Project	Individual term project	50.00
	Total:	100.00

6. Instructional Material and Learning Resources

- **Material Type:** Course Packet
  Material Status: Required
  Additional Notes: Available on Blackboard

- **Material Type:** Course Packet
  Material Status: Recommended
  Additional Notes: Available on Blackboard

- Active Use of Course Page on Blackboard: No Service Available
- KOLT Tutoring: No Service Available

7. Course Schedule

Meeting Times	Subject
1	Globalization in an age of uncertainty
2	International trade
3	Foreign direct investment
4	Foreign exchange
5	The global entrepreneur
6	Foundations of global strategy
7	Entering foreign markets
8	Managing an international business
9	Cultural and social aspects of doing business globally
10	Corporate social responsibility, ethics and sustainability at the global level

11	Managing geopolitical risks
12	Doing business in the Asian century
13	Use of advanced technologies in global business
14	Wrap up

8. Student Code of Conduct and Academic Grievance Procedure

Student Code of Conduct

Statement on Academic Honesty with Emphasis on Plagiarism

Academic Grievance Procedure

9. Course Policies

• Regular attendance is essential for student success and active participation in this course. Attendance will be taken at each class session, and students are expected to be present and punctual for all scheduled class meetings, whether in person in the classroom or on Zoom.• Readings for this class aim to complement the discussions in the classroom and to establish the broader framework for them. It is therefore essential for the students to do the readings before coming to the class .• All classes will be recorded on video and all recordings will be made available to students. Students who could not attend a class are obliged to watch the video of that session in their earliest convenience.• There will be one mid-term essay (take home). There is no final exam.• The students are required to write one research paper. The paper will be done individually; students will develop a cross-border business idea for a company - hypothetical or real- to enter a specific country market in a specific industry (see below for more details). Students will first submit a brief proposal to the instructor (electronically through Blackboard), who will approve the topic. The final paper must have a length of at least 2,000 words, and at most 5,000 words. Papers are to be submitted electronically (through Blackboard) to the instructor. • Grading: Research paper 50% / Mid-term essay 35% / Participation 15%. Grades will be announced through Blackboard.• Extension: Extensions will not be granted (exceptions made for illness, under the condition that the reason is officially documented). Late submission will be penalized by grade deduction (1 point deducted per day past the deadline).• Academic integrity is of utmost importance in this course. Students are expected to uphold the highest standards of honesty and integrity in all aspects of their academic work. Plagiarism, cheating, fabrication, signing the attendance sheet for others or attempting to convince others to sign it on their behalf and any other form of academic misconduct will not be tolerated and may result in disciplinary action.

10. Other

FAQs

What will be the exams like?

- The midterm exam will be in the form of a take-home essay. The instructor will give a question, and the students will have one full week to write and submit their essay.
- There is no final exam.

What is the research paper going to be about?

The paper will be done individually; students will develop a cross-border business idea for a company to enter a specific country market in a specific industry. Here are some basic guidelines for how to proceed with this project:

- Choose a company. It can be hypothetical or real.
- Explore the opportunities and develop and idea.
- Choose a foreign market to enter and a product. explain the rationale behind the idea, i.e. Why this market?

Why this product?
- Create your business model. What is "the job to be done" for customers?
- Decide on your optimal mode of foreign market entry. What exactly are you going to do? Direct exports? FDI through a joint venture? Why?
- Discuss possible risks and barriers of entry.

Here are some examples from similar projects prepared by students in the past:
- Yapı Merkezi (Turkish construction company) entering the Nigerian market.
- Vestel entering the household appliances market in the Democratic Republic of Congo.
- Koç Holding expanding the European market through Belgium.
- BYD China building a lithium-cell factory in Kazakhstan.
- JD.com launching digital trade services in South Africa.

Students are more than welcome to discuss their ideas with the instructor before submitting their proposal, and they also should not hesitate to develop their ideas with assistance from the instructor as they write their paper.

How can the students communicate with the instructor outside the class hours?

Students are encouraged to make use of the office hours of the instructor (please see above for the details). If this is not possible, they can contact the instructor through email. Emails are normally answered within the next 36 hours. All student emails are read by the instructor however they will NOT be replied in the following cases:
- If the student is asking for information that is already available in this syllabus.
- If the student is asking for information that was already published through Blackboard.
- If the student is asking the instructor to increase his/her grade without a real and concrete reason.

Is the instructor going to take attendance?

Attendance will be taken at the beginning of each class session. Students can attend the class either in person in the classroom, or through Zoom. Regular attendance is expected of all students. Excused absences due to illness, family emergencies, or university-approved events must be communicated to the instructor in advance or as soon as possible. Excessive unexcused absences may result in a deduction of participation grades and could impact overall course performance. Active participation is an essential component of this course and will be a significant factor in determining final grades. Active participation includes but is not limited to: asking questions, engaging in discussions, contributing ideas and insights, sharing relevant experiences, and actively listening to others. The class participation grade will be based on both attendance and active participation. Attendance will be considered as a minimum requirement, but it alone does not guarantee a high participation grade.

Important dates and deadlines

- Midterm exam: Question will be provided on 24 July, Monday. Students will submit their essays by 31 July, Monday, 18:00 Istanbul time.
- Students submitting their research paper: 20 August, Sunday, 18:00 Istanbul time).

KOÇ ÜNİVERSİTESİ
ACADEMIC WRITING PROGRAM

ACWR 106: Academic Writing for Science and Technology
Syllabus for Summer 2022

Name: Paul Newton
Email: pnewton@ku.edu.tr

Course Description

ACWR 106 uses texts from science, medicine, and engineering to allow students to practice organizing and synthesizing ideas, reporting on technical methods and results, and explaining technical and scientific ideas to a variety of audiences. In addition to texts and materials provided by the instructor, students will locate texts from their field of study to use as sources for the course assignments which have been chosen to practice the style and methods appropriate for technical discourse. A large proportion of the course grade is allocated to collaborative writing and group work.

Course Learning Outcomes

This course aims to guide students through the learning process enabling them to:

- engage in the stages of the research process, including collaboration, choosing a focus and planning a paper
- produce a variety of writing/texts within the scope of specific genres catering to a particular audience
- identify and extract relevant information from academic/appropriate sources
- discuss and explain a specific position, argument, method or hypothesis
- monitor own learning/metacognitive skills in order to become autonomous learners

Course Materials

All course materials will be made available on Blackboard.

Assignments and Grading

No student work will be accepted unless all previous stages of the assignment have been completed and the work is posted to Blackboard.

Position Paper (35%)		
Proposal Draft Submission Final Paper	5% 5% 25%	In this 1,000-1,250 word paper, using process-description writing you will identify a problem, evaluate existing solutions, and defend your position about which one is preferable using three peer reviewed academic sources.

Literature Review Paper (50%)		
Proposal Annotated Bibliography Submission for peer review Review of peer's paper Final Paper Group Member Evaluation 2	1% 15% Required 4% 25% 5%	In this 1,800-2,200 word paper, in collaboration with group members, you will identify and explain the significance of an important research problem or issue; carefully analyze and evaluate the work done by other researchers and present their work and identify emerging trends.

Student Engagement (15%)		
Classwork/Homework/Quizzes Participation	15%	Your engagement in the course will be assessed by both formative testing of your comprehension of course content as well as through your punctuality, participation in class discussions, peer review, and preparedness for class in general.

Individual Meetings

Your instructor will be available to meet on Zoom on most times Monday to Thursday by appointment. You can also ask any question you may have by email. I aim to reply to all questions within 24 hours.

Policy on Late Work

There is a five percent (5%) penalty for each day, or part thereof, an assignment is late. Work submitted five days after the deadline will not be awarded a grade. An instructor is not obliged to read or provide feedback on work that is excessively late.

Plagiarism and Collusion Policy

Plagiarism is presenting someone else's words or ideas as your own, without proper citation. Auto-plagiarism is submitting and/or recycling one's own earlier work. Collusion is where unauthorized and unannounced help has been provided. If it is discovered that any student's assignments include plagiarism or collusion, the student may fail the assignment, fail the course, and/or be referred to the university's disciplinary council, which may result in suspension from the university.

Grade Disputes

As a student, you have the right to petition for the reassessment of one or multiple course assignments. If you believe that an assignment has been unfairly or inaccurately graded, please follow these instructions:

1. Make an appointment with your instructor as soon as possible once the grade has been posted in order to discuss your concerns.
2. During your meeting, ask the instructor to explain how the assignment was graded in terms of Content, Organization, and Language/Mechanics or other grading criteria. Clarify with your instructor whether your grade was penalized due to late submission, failure to comply with certain instructions, failure to meet the goals for the assignment, or for any other reason. If you have difficulty understanding your instructor's explanation, ask for the explanation in written form. If you remain unsatisfied with your instructor's explanation of the grade, then proceed to step 3.
3. Fully complete the petition form and send it to the CSSH Dean's Office (email: mdalyaprak@ku.edu.tr).
4. If you have concerns about multiple assignments, include a **separate petition form for each assignment** you request to be reassessed. You may **NOT** fill out a petition asking for all course assignments to be reviewed.
5. Keep in mind that your assignment grade and your final grade in the course **may go up, down, or remain unchanged** as a result of the reassessment process.

These petitions will only be accepted **within seven days** after the grade has been posted to discuss the grade(s) in question.

Grading scale

Please see https://cssh.ku.edu.tr/en/about/faculty-resources/grading-scale/

Course Guidelines and Expectations

- Attend class
- Do not submit plagiarized work or work that has been produced through collusion.
- Meet submission deadlines and be aware of course policies and rules.
- Behave respectfully toward the instructor and your fellow students.
- Communicate professionally and politely with your instructor.
- Submit neat and professional work to Blackboard through the turnitin tool to be considered for evaluation.
- Attend class prepared to write and speak, with textbook or reading pack, and any assignments or other specific materials the instructor has told you will be used that day.