Lecture Time and Location:
Monday	08:40-10:30	**(Synchronous Lectures on ZOOM Meeting)**
Wednesday	12:40-13:30	**(Synchronous Lectures on ZOOM Meeting)**

Online Lectures ZOOM Link: https://sabanciuniv.zoom.us/j/4911122195

Section A1:   **Online-Synchronous Courses on ZOOM Meeting**
(TA: Mehmet Emin Mumcuoğlu**)**   **LAB:** **Fri** 09:40-11:30   /   **REC:** **Fri** 11:40-12:30
ZOOM Link: https://sabanciuniv.zoom.us/j/98425905196

Section A2:   **Online-Synchronous Courses on ZOOM Meeting**
(TA: Ömer Safa Çavuş**)**   **LAB:** **Fri** 09:40-11:30   /   **REC:** **Fri** 11:40-12:30
ZOOM Link: https://sabanciuniv.zoom.us/j/4134936619

Instructor:
Utku Seven, Ph.D.

Office: FENS L017
e-mail: useven@sabanciuniv.edu
Office hours: Tuesday 14:40 – 16:30 (**Online Meeting**)
Tel: 9595

Teaching Assistants/Office Hours (contact your TA for location or appointment):

Mehmet Emin Mumcuoğlu	(mehmeteminm@sabanciuniv.edu)	Office Hour (**MON** 10:00-12:00@**Online Meeting**)
Ömer Safa Çavuş	(omersafa@sabanciuniv.edu)	Office Hour (**TUE** 13:40-15:40@**Online Meeting**)

Grading:

Ayşenur Ateş   (aysenurates@sabanciuniv.edu)   Office Hour (**TUE** 13:00-15:00@**Online Meeting**)
ZOOM Link: https://sabanciuniv.zoom.us/j/6112663876?pwd=eWcwOFVickM4MnhYT3QzbUF4SldIdz09

Pouya Yousefi Louyeh   (pouya@sabanciuniv.edu)   Office Hour (**MON** 10:00-12:00@**Online Meeting**)
ZOOM Link: https://sabanciuniv.zoom.us/j/8394487981?pwd=UWtMZjJWMGYzUWlIeGdidUJmRE9HQT09

Shayan Ramezanzadeh   (ramezanzadeh@sabanciuniv.edu)   Office Hour (**WED** 13:40-15:30@**Online Meeting**)
ZOOM Link: https://sabanciuniv.zoom.us/j/9502998993

Course Book:
- Technical Drawing with Engineering Graphics, 14/E by Giesecke, Hill, Spencer, Mitchell, Dygdon, Novak, Lockhart & Goodman, Prentice Hall, ISBN-10: 0135090490.
Purchase link: https://www.homerbooks.com/urun/technical-drawing-with-engineering-graphics

Supplementary References:
- Engineering Design Graphics with Solidworks 2015, 1/e by Bethune, Prentice Hall, ISBN-10: 0132740508
- Principles of CAD/CAM/CAE, 1/e by Lee, Prentice Hall, ISBN-10: 0201380366

Catalog Description:

ENS 209 is concerned with the basic and important principles in computer-aided drafting and design (CADD), and 3D solid modeling. Based on an understanding of engineering drawing, the course will further introduce the use of computers for 2D drafting and 3D solid modeling. Topics include engineering drawing, tolerances, computer-aided technical drafting and design, geometric models and data structures, representation and manipulation of curves and surfaces and 3D solid modeling, and assembly modeling and analysis. Engineering materials, mechanical parts and manufacturing methods.

Objective of the course:

At the conclusion of this course, you should be able to:
- Describe the design process and product life cycle,
- Describe the advantages of using computers in design process,
- Identify different technical drawings based on the projection system used,
- Sketch the different views of a given 3D component,
- Interpret drawings that include section views,
- Assign dimensions and tolerances on the views correctly (properly),
- Represent and manipulate free-form curves and surfaces,
- Understand and draw sections and cutting planes,
- Use conventional and geometric dimensions and tolerance to describe size, shape and geometric tolerances accurately on an engineering drawing,
- Model 3D objects using solid modeling techniques,
- Identify and apply dimensioning guidelines,
- Interpret a technical drawing,
- Develop assembly drawings using constraints,
- Design for Assembly and Manufacturing (Design for X),
- Work with a CAD software (Solidworks) to design an assembly and generate technical drawings of its components and assembly drawings,
- Work effectively in a team to analyse a product (assembly) to dissect and design it by using a CAD software.

Policies and Procedures:

- **Homepage:** https://sucourse.sabanciuniv.edu/plus We will be using **SUCourse+** starting from this semester which is a MOODLE based course management system. SUCourse will **NOT** be active. The outline of lecture notes, assignments, projects and other course material will be posted on **SUCourse+**.

- **Midterm Exams:** There will be **online (ZOOM Meeting)** midterm exams (progressive) during the semester that you should submit you work to related SuCourse Assignments in a limited time of 150 minutes. The midterm exams will be on **April 15th** and **May 13th** from **19:40** to **22:10**. **The questions in the exams will not be same as the solved example questions. Late submissions will be accepted with 20% grade deduction. Late submission option will be provided as extra 20 minutes.**

The exams will be solved **by hand** as in a regular exam. If you are able to **print** the question papers, you can solve the questions on blanks on those papers. If you are not able to print them, use empty sheets to answer the questions. You should use grid-papers for technical drawing questions. For submission, you should take pictures of the answer sheets (or scan them if you can) and upload them to related SuCourse+ assignment as a single compressed (zipped) file. To take proper pictures of the sheets, **Office Lens, CamScanner** (or any other scanner) applications are suggested for your mobile phones. This application helps you to obtain scanned-like pictures (sheet boundaries only, normal to sheet). Further instructions will be provided via SuCourse+ announcements one week before the exams.

After the midterm exams, 10 randomly picked students will have oral exams about their solutions. This will be a verification step of the answer papers. These oral exams will be held by online meetings (Google Meet, ZOOM, Webex, etc…) with your TAs and me. We will contact you after the grades are released.

- **Final Exam:** Final Exam will be held as an online exam via ZOOM Meeting. It will be provided during the final exam weeks. Final exam should be solved **by hand**. If you are able to **print** the exam papers, you can solve the questions on blanks on those papers. If you are not able to print them, use empty sheets to answer the questions. You should use grid-papers for technical drawing questions. For submission, you should take pictures of the answer sheets (or scan them if you can) and upload them to related SuCourse+ assignment as a single compressed (zipped) file. To take proper pictures of the sheets, **Office Lens** (or any other scanner) application is suggested for your mobile phones. This application helps you to obtain scanned-like pictures (sheet boundaries only, normal to sheet). Further instructions will be provided via SuCourse+

announcements one week before the exams. **Late submissions will be accepted with 20% grade deduction. Late submission option will be provided as extra 20 minutes.**

After the Final Exams, 10 random picked students will have oral exams about their solutions. This will be a verification step of the answer papers. These oral exams will be held by online meetings (Google Meet, ZOOM, Webex, etc…) with your TAs and me. We will contact you after the grades are released.

There will be precautions in Online Exams (Midterm Exams and Final Exam) to avoid cheating and plagiarism:
-You should have a camera showing your face and the solution sheets during the exam. A side view of you from 70-80cm is suggested. If not, you will be assumed as cheating. If a major internet connection problem occurs, you should inform us immediately.
-Me and TAs will be proctoring the online exam via ZOOM Meeting. Extra proctors can be requested if needed.
-You will be asked sign "Honor Pledge" agreement on your exams (Details will be explained).
-Before submission of the exam, you have to show your papers on the camera.
-You have to take the pictures of the exam sheets (do not forget to use **Office Lens** or **CamScanner** application) and submit the images to SuCourse+.

- **Assignments:** Homework assignments will be assigned regularly.

- **Missed Exams:** No excuses will be accepted unless informed **prior** to the exams.

- **Projects:** There will be a semester-project and **groups of four** will be formed to work on the projects. The details of the project will be provided in coming weeks.

- **Individual effort:** Any academic dishonesty (i.e. cheating, plagiarism...) shall be resolved according to the University's Academic Integrity Policy**. Any academic dishonesty such as cheating, plagiarism or unauthorized sharing will result in an "F" Grade in the course and/or disciplinary actions.**

- **Team effort:** Teams will periodically be asked to submit individual effort assessment. Teams having problem working together should make every effort to resolve them by themselves. If that doesn't work, contact the instructor for help.

- **Objections to grading:** If there is any objection to grading, the student must inform the instructor via an e-mail after grades are released. The students must clearly explain why he/she deserves the missed credit(s).

- **Attendance:** Formal roll may be held on an occasional basis during the Lectures.

- **Computer usage: You are expected and supposed to do CAD assignments, quizzes, project etc. on your own computer unless any prior approval of the instructor is given. Otherwise, you will get "0" from CAD assignments. You have to register your laptops to your Teaching Assistants in the first Laboratory hours held.**

- **Final Exam: If your Final Exam grade is below _25_ points, you will directly get "F".**

- **Lab Final Exam: If your Lab Final Exam grade is below _50_ points, you will directly get "F".**

- **Course grade:** A weighted-average grade will be calculated, and letter grades will be assigned to the overall grades.

Grade Distribution for the course is revised as follows:

Assignments + Quizzes	10%
Midterm Exams (Online)	20% x 2
Project	15%
Final Exam (Online)	35%
Lab Final Exam	0% **(Pass/Fail)**

Total	100%

Tentative Schedule

Week	Topic	Week	Topic
1	Introduction, Product development	8	Dimensioning and Tolerancing
2	Layouts, Technical Sketching	9	Geometric Dimensioning and Tolerancing (GD&T)
3	Geometric construction, Projections	10	Assembly Modeling (Assembly Mates)
4	Representation and manipulation of curves and surfaces	11	Assembly Modeling (Mechanical Parts)
5	Solid modeling	12	Design for Assembly, Manufacturing etc.
6	2D representations	13	Engineering Materials
7	Sections, Auxiliary views	14	Manufacturing Methods