

## Call for Tutors

### 151-0321-00L Engineering Design and Material Selection (EDMS)

#### Information

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##### Course Info

- EDMS is the follow-up course of CAD & Technical Drawing
- CAD is still one focus, however, engineering design aspects are more relevant now
- The course is structured in three blocks:
  - **Health Care** – focus is sketching, engineering design, drafting (views, projections, and cuts) and dimensioning. This block includes the start with CAD.
  - **Future Mobility** – focus is CAD, based on the original CAD&TZ course.
  - **Sustainable Materials** – focus on aspects of material selection. Hands on bending test lab.
- Three graded tests on moodle within the semester
- More details will follow when we meet before the semester starts
- For more details see [vz.ethz.ch](http://vz.ethz.ch)

##### Schedule (State, 2022.07.10)

Week/ Dates	Lecture Topic	Exercises	Case study	Software	Test
1	Introduction and sketching	Sketching	Health (Breathe)		
2	Design process and conceptual design (teamwork intro)	<b>Concept generation</b> / Sketching / Evaluation			
3	Projections and cuts	Views, projections and cuts		CAD	
4	Technical drawing: Dimensioning	Dimensioning / Drafting in CAD		CAD	
5	CAD modeling operations	Sketch / Features / Car chassis	Future mobility (Kyburz)	CAD	20 min
6	CAD features and parametric design	Parametric / Car wheels		CAD	
7	CAD freeform and other CAD approaches	Freeform / Car top		CAD	
8	CAD product design and assemblies	Drafting <-> Modeling / Assembly / Car assembly		CAD	
9	Materials and their properties	Simple material calc / <b>Bending lab</b>	Sustainable materials (Ski workshop)		20 min
10	Manufacturing and additive manufacturing	Manufacturing questions / Skateboard project		CAD / CES	
11	Ashby material selection process	Ashby (hand) / Skateboard project		CES	
12	Overview of testing and simulations (skis / wheel)	Decision-making / Skateboard project		CES	
13	Course recap and live Instron test	<b>Race</b>			40 min

##### Tasks for Tutors

- Support the students during the exercises
- Clarify and discuss open questions
- Give a quick intro/overview at the beginning of each exercise session
- Give qualitative feedback about their work to students (no grading)
- Support EDMS-team to run the course (logistics, solve issues, etc.)

**Workload overview**

	<b>Per Group</b>
<b>Exercise</b>	3h
<b>Preparation</b>	1h
<b>Feedback</b>	2h
<b>Meetings</b>	1h
<b>Total</b>	7h

- This represents the max. hours/salary
- Hours have to recorded in ETHIS

**Organization structure**

- Professor: Prof. Kristina Shea
- Management and organization of exercise: Martin Schütz
- Employment and salary: Bettina Melberg

**Start of Course**

Start EDMS, HS2022:

- Monday 26th of September

**Lecture and Exercise Slots**

	<b>time</b>
<b>Lecture</b>	
<b>Monday</b>	15:15 – 16:00
<b>Exercise</b>	
<b>Monday</b>	16:15 – 19:00
<b>Tuesday</b>	16:15 – 19:00
<b>Wednesday</b>	14:15 – 17:00
<b>Thursday</b>	14:15 – 17:00

Division in the exercise slots: September before course start

## Query 1

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### Employment

Personal information	
Name	..
Surname	..
ETHZ Mail	..
Date of Birth	..
Nationality	..

### Qualification and Grades

	Current average grade (>= 4.5)	Basisprüfung	Innovationsprojekt	CAD&TZ	Fokus-Projekt (if already taken)
Grade					
comments					

## Query 2

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### Self-assessment

Aspects	Comments			
<b>Motivation</b>				
		+	++	+++
Engineering Design Aspects (Experience)				
Hand Sketching Skills				
Technical Drafting (Experience)				
CAD Skills				
Material Selection: Basics				
3D Printing and Rapid Prototyping (Experience)				

### Show something!

Please provide some pictures and impressions of your experience with respect to the aspects listed above (Engineering Projects, CAD, Sketching, etc.) on the following page.

Thanks Martin and the EDMS-Team



Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich



## Query 3

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**Impressions/Portfolio**