



## Faculty of Applied Sciences

### MECA1200 Mechanical construction project I A.

[10h+25h exercises] 2.5 credits

This course is taught in the 2nd semester

**Teacher(s):** David Johnson, Benoît Raucent  
**Language:** French  
**Level:** First cycle

#### Aims

Introduce students to the design process in mechanical engineering and the knowledge of mechanisms and assembly processes. Develops students' capacity to perform functional analysis and implement graphical tools.

#### Main themes

Dismantling and functional analysis of mechanisms.  
 Measurements on mechanical parts.  
 Sketching and computer-aided-drawing  
 Kinematic analysis

#### Content and teaching methods

This course is based mainly on a practical and deductive approach. The students start by dismantling and reassembling a complex mechanical system (e.g. an automobile engine), thereby giving for-hands on experience of mechanical components, their interdependence and functional analysis. The students are then required to carry out a thorough investigation of a mechanical subsystem, involving dimensional analysis, functional analysis and component design, followed by an operational analysis and workshop drawings produced by a CAD software.

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites :

basic technical drawing skills, e.g. FSAJ1631

Format :

practicals in groups of 2 students

1st semester: engine dismantling

2nd semester: functional analysis and AUTOCAD drawing (half day per week)

Assessment :

year long involvement. Reports and drawings. Final interview.

Stream : design and projects in mechanical engineering

#### Other credits in programs

<b>FSA12BA</b>	Deuxième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(2.5 credits)
<b>FSA13BA</b>	Troisième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(2.5 credits)
<b>MAP22</b>	Deuxième année du programme conduisant au grade d'ingénieur civil en mathématiques appliquées	(2.5 credits)