

MECHANICAL VIBRATIONS

PRACTICAL DETAILS

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Course schedule

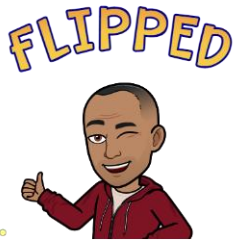
- Not compulsory*
- *be on time!*
- *be quiet!*

- ## Compulsory

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Flipped class principle

- Watching pre-recorded videos/reading material before coming to the class <https://youtu.be/FN1gSfpl13I>
- During the class :
 - Wooclap sessions to consolidate knowledge
<https://app.wooclap.com/events/OAYMYT/live-session>
 - Questions and answers
 - Clarifications of the concepts not understood by the majority
 - Practical cases discussed in more details



- Interactions are a necessity for continuous evaluation of the teaching/learning process
- Flipped class will work if you play the game and will fail if you don't

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Course material and organization

Course material and information available at:

<https://structuraldynamics.ulb.be/>
<https://structuraldynamics.ulb.be/videos-and-slides>

- [Basics of Structural Dynamics](#)
- [Advanced Concepts in Structural Dynamics](#)

A copy of the slides for each topic is given in pdf (link next to title below)

1. Introduction. [pdf](#)



Note that a few modules are not available in video recordings and will be taught using the classical method

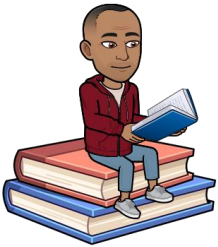
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Course evaluation

Evaluation :

-Theory : Oral examination (January) :
50% Theory basics evaluated by Wout Weijtfens
50% Project evaluated by Arnaud Deraemaeker



-Practice : Exercises:
- continuous evaluation : mandatory to participate in oral examination
> 50% : *pass*
< 50% : *fail* -> *Second session in August/September*

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Oral examination

The first part (theory) is organised as follows (15 min):

- The student will be assigned at least 3 randomly selected questions covering the entire course
- After each individual question is read, the student is expected to respond orally without a dedicated preparation period
- Answers are graded on accuracy and conciseness
- The final grade is the averaged result of all questions asked

The second part (project) consists in :

- A 10 min presentation (10 slides max) of your project
- 5 minutes of questions
- The presentation and jupyter notebook of the project need to be submitted in advance.

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On the use of artificial intelligence

ULB rules (article 40) : The use of AI is forbidden by default, except for thesis writing

When used for thesis writing, the following conditions apply

- **Subsidiarity**
The use of AI cannot replace reflexion and personal research. The primary sources must be searched and cited correctly
- **Transparency**
The student must explain clearly how AI was used, for what purpose and explain which type of content was generated
- **Responsibility**
The student must respect the right of authors and data protection.

Not respecting these rules can lead to failure or 0/20 with disciplinary sanction

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The use of AI in Mechanical Vibrations

The use of AI will be tolerated with the same rules as for the thesis writing

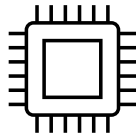
AI cannot be used to

- Do the scientific work for you
- Replace a complete scientific research/project
- Think or validate engineering choices for you
- Work on non public data
- Act as a substitute for a course content/experimental work/teacher

You have to be able to justify your approach and content based on scientific knowledge with proper sources, AI is not considered as a proper source.

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The use of AI in Mechanical Vibrations



AI can be used to

- Correct/develop coding for the project
- Produce illustrations for your presentations (needs to be mentioned)
- Correct grammar/orthography, translate text

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Course objectives

Main objectives

- Understanding the fundamental concepts in vibrations applied to mechanical engineering problems
- Ability to apply these concepts to practical problems with a design-oriented mind.



→ We care that you become a good engineer useful to our society.

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Philosophy of teaching and learning

Group working vs individual assessment

- > Learn to work in groups and benefit from the others, representative of real working conditions
- > Verify that you have the sufficient knowledge to work as an engineer (individual assessment), representative of what is expected from you to advance in your career.



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Philosophy of teaching and learning

No spoon feeding

- > You learn by doing yourself and by doing mistakes. Listening and copying is not learning



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Questions ?

