

Computer Aided Design

Mechanical Transmissions

IDENTIFICATION

CODE : GMCIP-4-S1-EC-TRM
ECTS : 2.0

HOURS

Lectures : 17.0 h
Seminars : 19.0 h
Laboratory : 0.0 h
Project : 0.0 h
Teacher-student
contact : 36.0 h
Personal work : 40.0 h
Total : 76.0 h

ASSESSMENT METHOD

1 test [2 hours] + 2 evaluations of the
conference work

TEACHING AIDS

1 handout and slides - Softwares :
Kisssoft, Matlab

TEACHING LANGUAGE

French

CONTACT

M. DE VAUJANY Jean-Pierre
jean-pierre.devaujany@insa-lyon.fr
M. DUREISSEIX David
david.dureisseix@insa-lyon.fr
MME SANDIER Celine
celine.sandier@insa-lyon.fr

AIMS

- "- To provide a good knowledge of physical phenomena and technological principles used in a chain of a mechanical power transmission;
- To be able to determine, in a given context, the meshing characteristics of a gear, pulley-belt or chain transmissions;
- To be able to design and to verify the load capacity of the main transmitting members
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CONTENT

- "I-Introduction
- The power transmission systems / advantage - disadvantage
- II-Transmission by gear
- Principle of generation of the involute cylindrical gears
- Parameters of the teeth geometry
- Meshing
- Loaded capacity, following the recommendations of the ISO6336 standard method
- Design of planetary gear trains
- Design approach of a gear transmission
- III- Transmissions using sticking: belts and frictional mechanisms
- Main families of belts and chains
- Elements of calculation to design belt/chain power transmission
- Solution choices for clutches and brakes"

BIBLIOGRAPHY

- "Engrenages - Conception Fabrication Mise en œuvre, Georges HENRIOT, Dunod
- Etude géométrique des engrenages cylindriques de transmission de puissance, Jacques DUFALLY, Ellipses
- Calcul de la capacité de charge des engrenages cylindriques de transmission de puissance, Jacques DUFALLY, Ellipses
- Systèmes Mécaniques, AUBLIN, BONCOMPAIN, BOULATON, CARON, JEAY, LACAGE, REA, Dunod
- Éléments de machines, DROUIN, GOU, THIRY, VINET, Editions de l'école polytechnique de Montréal
- Conception de machines, Georges SPINNLER, Presses polytechniques et universitaires romandes
- "

PRE-REQUISITE

GMCIP-3-CDIM-S1

INSA LYON

Campus LyonTech La Doua

20, avenue Albert Einstein - 69621 Villeurbanne cedex - France
Phone +33 [0]4 72 43 83 83 - Fax +33 [0]4 72 43 85 00

www.insa-lyon.fr