ANNEE : 2ème année / 2nd year - 60 ECTS

SEMESTRE : 1er semestre / 1st semester - 30 ECTS

UE : General Engineering S3 - 12 ECTS

EC : Fluid Mechanics (1) / Mécanique des Fluides - 4 ECTS

EC : Maths for Engineering (3) / Maths pour l'Ingénieur (3) - 6 ECTS

EC : Internship in Industry(1) / Stage industriel (1) - 2 ECTS

UE : Mechanical & Materials Engineering S3 - 12 ECTS

EC : Manufacturing / Production - 4 ECTS

EC : Kinematics of Mechanisms / Cinématique des Systèmes Mécaniques - 4 ECTS

EC : Strength of Materials / Résistance des Matériaux - 4 ECTS

UE : IBENG-2-S1-UE-HU1 Huma : FLE 6h - 6 ECTS

EC : Français Langue Etrangère (FLE) étudiants IBENG2 A2 à B1 6h - undefined ECTS

UE : Personal development 1 S3 - 6 ECTS

EC : Français Langue Etrangère (FLE) étudiants FI2 B1 à B2 4h (S1) partie b - undefined ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : Français Langue Etrangère (FLE) étudiants FI2 B1 à B2 4h (S1) partie a - undefined ECTS

UE : Personal development 2 S3 - 6 ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : Français Langue Etrangère (FLE) étudiants FI2 B2 2h (S1) - undefined ECTS

EC : Chinois (2 S1) / Chinese - 2 ECTS

EC : Russe (2 S1) / Russian - 2 ECTS

EC : Allemand (2 S1) / German - undefined ECTS

EC : Italien (2 S1) / Italian - 2 ECTS

EC : Portugais (2 S1) / Portuguese - 2 ECTS

EC : Japonais (2 S1) / Japanese - ECTS

EC : Espagnol (2 S1) / Spanish - 2 ECTS

EC : Arabe (2 S1) / Arabic - undefined ECTS

UE : Personal development 3 S3 - 6 ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : SCAN Options (2 S1) - 2 ECTS

EC : Chinois (2 S1) / Chinese - 2 ECTS

EC : Russe (2 S1) / Russian - 2 ECTS

EC : Allemand (2 S1) / German - undefined ECTS

EC : Italien (2 S1) / Italian - 2 ECTS

EC : Portugais (2 S1) / Portuguese - 2 ECTS

EC : Japonais (2 S1) / Japanese - ECTS

EC : Espagnol (2 S1) / Spanish - 2 ECTS

EC : Arabe (2 S1) / Arabic - undefined ECTS

SEMESTRE : 2ème semestre / 2nd semester - 30 ECTS

PARCOURS : ECAM Track / Parcours ECAM - 30 ECTS

UE : Multidisciplinary project / Projet multidisciplinaire - 6 ECTS

EC : Pathway discovery workshops / Workshop découverte - ECTS

EC : Multidisciplinary project / Projet multidisciplinaire - ECTS

EC : Sustainable development / Développement durable - ECTS

UE : Electrical engineering / Génie électrique - 6 ECTS

EC : Embedded software / Logiciel embarqué - ECTS

EC : Electrostatics and magnetostatics / Electrostatique et magnétostatique - ECTS

UE : Maths for engineering / Mathématiques pour l'ingénieur - 7 ECTS

EC : Numerical methods / Méthodes numériques - ECTS

EC : Maths for engineering / Mathématiques pour l'ingénieur - ECTS

UE : Mechanical engineering / Génie mécanique - 6 ECTS

EC : Materialsn/ Matériaux - ECTS

EC : Solid mechanics / Mécanique du solide - ECTS

EC : Mechanical design / Design mecanique - ECTS

UE : Professional and personal development / Développement personnel et professionnel - 5 ECTS

EC : Professional and personal development / Développement personnel et professionnel - ECTS

PARCOURS : Twente track / Parcours Twente - 30 ECTS

UE : Winter School - 0 ECTS

EC : WInter School - ECTS

OPTION : IBENG-2-S2-OP-TWENTE-ADAPTED - 30 ECTS

UE : General engeneering - 7 ECTS

EC : Mechanics of Materials - ECTS

EC : Mathematics for Engineers 4 - ECTS

UE : Machines - 8 ECTS

EC : Machine Elements - ECTS

EC : Design Project - ECTS

UE : Fluid and heat / Fluide et chaleur - 15 ECTS

EC : Fluid mechanics project / Projet de mécanique des fluides - 7 ECTS

EC : Fluid mechanics 2 / Mécanique des fluides 2 - 4 ECTS

EC : Heat transfer / Transfert de chaleur - 4 ECTS

OPTION : IBENG-2-S2-OP-TWENTE-STANDARD - 30 ECTS

UE : Fluid and heat / Fluide et chaleur - 15 ECTS

EC : Fluid mechanics project / Projet de mécanique des fluides - 7 ECTS

EC : Fluid mechanics 2 / Mécanique des fluides 2 - 4 ECTS

EC : Heat transfer / Transfert de chaleur - 4 ECTS

UE : Mechatronics / Mécatronique - 15 ECTS

EC : Dynamics 2 / Dynamique 2 - 4 ECTS

EC : Systems and control engineering / Ingénieri des systèmes et contrôle - 4 ECTS

EC : Mechatronics project / Projet mécatronique - 7 ECTS

PARCOURS : Strathclyde track / Parcours Strathclyde - 30 ECTS

UE : General Engineering S4 - 10 ECTS

EC : Experimental and laboratory skills / Pratiques de Laboratoire et Méthodes Expérimentales - 3 ECTS

EC : Engineering ethics / Ethique de l'Ingénieur - 3 ECTS

EC : Automotive Systems / Systèmes Automobiles - 4 ECTS

UE : Mechanical & Materials Engineering S4 - 15 ECTS

EC : Aero-Design 1 / Conception Aéronautique - 5 ECTS

EC : Flight and Spaceflight 1 / Théorie du vol - 5 ECTS

EC : Engineering Analysis 3 (FE) / Analyse en Ingénierie (Finite Elements) - 5 ECTS

UE : Personal development - 5 ECTS

EC : Elective EC - ECTS

ANNEE : 1ère année / 1st year - 60 ECTS

SEMESTRE : 1er semestre / 1st semester - 30 ECTS

UE : Mechanical & Materials Engineering S1 - 13 ECTS

EC : Materials (1) / Matériaux (1) - 5 ECTS

EC : Mechanics (1) / Mécanique (1) - 5 ECTS

EC : Mechanical Design (1) / Conception Mécanique - 3 ECTS

UE : General Engineering S1 - 11 ECTS

EC : Maths for Engineering (1) / Maths pour l'Ingénieur (1) - 5 ECTS

EC : Engineering Communication / Communication Professionnelle - 2 ECTS

EC : Electrical Engineering / Electricité - 4 ECTS

UE : Personal development 2 S1 - 6 ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 B1 à B2 2h de 4h (S1) partie a - undefined ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 B1 à B2 2h de 4h (S1) partie b - undefined ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

UE : Personal development 1 S1 - 6 ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 A2 à B1 4h (S1) - undefined ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 A2 à B1 2h (S1) - undefined ECTS

UE : Personal development 3 S1 - 6 ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 B2 2h (S1) - undefined ECTS

EC : Allemand (1 S1) / German - undefined ECTS

EC : Japonais (1 S1) / Japanese - 2 ECTS

EC : Russe (1 S1) / Russian - 2 ECTS

EC : Arabe (1 S1) / Arabic - undefined ECTS

EC : Italien (1 S1) / Italian - undefined ECTS

EC : Portugais (1 S1) / Portuguese - 2 ECTS

EC : Chinois (1 S1) / Chinese - 2 ECTS

EC : Espagnol (1 S1) / Spanish - 2 ECTS

UE : Personal development 4 S1 - 6 ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : SCAN Options (1 S1) - undefined ECTS

EC : Allemand (1 S1) / German - undefined ECTS

EC : Japonais (1 S1) / Japanese - 2 ECTS

EC : Russe (1 S1) / Russian - 2 ECTS

EC : Arabe (1 S1) / Arabic - undefined ECTS

EC : Italien (1 S1) / Italian - undefined ECTS

EC : Portugais (1 S1) / Portuguese - 2 ECTS

EC : Chinois (1 S1) / Chinese - 2 ECTS

EC : Espagnol (1 S1) / Spanish - 2 ECTS

SEMESTRE : 2ème semestre / 2nd semester - 30 ECTS

UE : Mechanical & Materials Engineering S2 - 12 ECTS

EC : Mechanical Design (2) / Conception Mécanique (2) - 2 ECTS

EC : Materials (2) / Matériaux (2) - 4 ECTS

EC : Mechanics (2) / Mécanique (2) - 6 ECTS

UE : General Engineering S2 - 12 ECTS

EC : Transversal Projects / Projets Transversaux - 2 ECTS

EC : Maths for Engineering (2) / Maths pour l'Ingénieur (2) - 5 ECTS

EC : Thermodynamics / Thermodynamique - 4 ECTS

EC : Introduction to Scientific Programming / Introduction à la Programmation Scientifique - 1 ECTS

UE : Personal development 1 S2 - 6 ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 A2 à B1 4h (S2) - undefined ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 A2 à B1 2h (S2) - undefined ECTS

UE : Personal development 3 S2 - 6 ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 B2 2h (S2) - undefined ECTS

EC : Allemand (1 S2) / German - 2 ECTS

EC : Espagnol (1 S2) / Spanish - 2 ECTS

EC : Arabe (1 S2) / Arabic - undefined ECTS

EC : Chinois (1 S2) / Chinese - 2 ECTS

EC : Russe (1 S2) / Russian - 2 ECTS

EC : Italien (1 S2) / Italian - 2 ECTS

EC : Japonais (1 S2) / Japanese - 2 ECTS

EC : Portugais (1 S2) / Portuguese - 2 ECTS

UE : Personal development 4 S2 - 6 ECTS

EC : SCAN Options (1 S2) - 2 ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : Allemand (1 S2) / German - 2 ECTS

EC : Espagnol (1 S2) / Spanish - 2 ECTS

EC : Arabe (1 S2) / Arabic - undefined ECTS

EC : Chinois (1 S2) / Chinese - 2 ECTS

EC : Russe (1 S2) / Russian - 2 ECTS

EC : Italien (1 S2) / Italian - 2 ECTS

EC : Japonais (1 S2) / Japanese - 2 ECTS

EC : Portugais (1 S2) / Portuguese - 2 ECTS

UE : Personal development 2 S2 - 6 ECTS

EC : Education Physique et Sportive / Physical Education - ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 B1 à B2 2h de 4h (S2) partie a - undefined ECTS

EC : Français Langue Etrangère (FLE) étudiants FI1 B1 à B2 2h de 4h (S2) partie b - undefined ECTS

ANNEE : 3ème année / 3rd year - 60 ECTS

SEMESTRE : 2ème semestre / 2nd semester - 30 ECTS

UE : Aerospace Engineering S6 - 7 ECTS

EC : Composite materials / Matériaux Composites - undefined ECTS

EC : Flight Mechanics / Mécanique du Vol - undefined ECTS

EC : Multi-Physics analysis and applications to Mechatronics / Analyse Multi-Physique appliquée à la Mécatronique - undefined ECTS

UE : Industrial Engineering S6 - 18 ECTS

EC : Final Project (2) / Projet de Fin d'Etudes (2) - undefined ECTS

EC : Internship in Industry (2) / Stage en entreprise (2) - undefined ECTS

UE : Personal and professional development 2 S6 - 5 ECTS

EC : International Engineering Practice (2) / Pratiques de l'ingénieur à l'international - undefined ECTS

EC : International Culture / Culture internationale - undefined ECTS

EC : Profiling IBMMAE / Campagne de Promotion - Application au Bachelor international - ECTS

UE : Personal and professional development 1 S6 - 5 ECTS

EC : International Engineering Practice (2) / Pratiques de l'ingénieur à l'international - undefined ECTS

EC : International Culture / Culture internationale - undefined ECTS

EC : Language-based Project for IBENG 3 - ECTS

EC : Français professionnel IBENG 3 B1-B2 2h (S2) / Profession French IBENG 3 B1-B2 2h - undefined ECTS

SEMESTRE : 1er semestre / 1st semester - 30 ECTS

UE : Mechanical & Materials Engineering S5 - 12 ECTS

EC : Final Project (1) / Projet de Fin d'Etudes (1) - undefined ECTS

EC : Thermodynamics and Propulsion / Thermodynamique et Propulsion - undefined ECTS

EC : Machine elements / Eléments de Machines - undefined ECTS

UE : General Engineering S5 - 12 ECTS

EC : Transducers and Measurements / Capteurs et Mesures - undefined ECTS

EC : Heat Transfer / Transferts Thermiques - undefined ECTS

EC : Control Engineering Flights - undefined ECTS

EC : Control Engineering Fundamentals - undefined ECTS

UE : Personal and professional development 2 S5 - 6 ECTS

- EC : Français Langue Etrangère (FLE) étudiants IBENG B2 2h (S1) - undefined ECTS
- EC : International Engineering Practice (1) / Pratiques de l'ingénieur à l'international - 2 ECTS
- EC : Allemand (3 S1) / German - undefined ECTS
- EC : Espagnol (3 S1) / Spanish - undefined ECTS
- EC : Arabe (3 S1) / Arabic - undefined ECTS
- EC : Portugais (3 S1) / Portuguese - 2 ECTS
- EC : Italien (3 S1) / Italian - undefined ECTS
- EC : Russe (3 S1) / Russian - 2 ECTS
- EC : Tandem et Intercompréhension en Langues Etrangères (3 S1) / Tandem and intercomprehension - undefined ECTS
- EC : Chinois (3 S1) / Chinese - undefined ECTS
- EC : Japonais (3 S1) / Japanese - undefined ECTS

UE : Personal development 4 S5 - 6 ECTS

- EC : International Engineering Practice (1) / Pratiques de l'ingénieur à l'international - 2 ECTS
- EC : Education Physique et Sportive / Physical Education - ECTS
- EC : Allemand (3 S1) / German - undefined ECTS
- EC : Espagnol (3 S1) / Spanish - undefined ECTS
- EC : Arabe (3 S1) / Arabic - undefined ECTS
- EC : Portugais (3 S1) / Portuguese - 2 ECTS
- EC : Italien (3 S1) / Italian - undefined ECTS
- EC : Russe (3 S1) / Russian - 2 ECTS
- EC : Tandem et Intercompréhension en Langues Etrangères (3 S1) / Tandem and intercomprehension - undefined ECTS
- EC : Chinois (3 S1) / Chinese - undefined ECTS
- EC : Japonais (3 S1) / Japanese - undefined ECTS

UE : Personal and professional development 3 S5 - 6 ECTS

- EC : Français Langue Etrangère (FLE) étudiants IBENG B2 2h (S1) - undefined ECTS
- EC : International Engineering Practice (1) / Pratiques de l'ingénieur à l'international - 2 ECTS
- EC : Education Physique et Sportive / Physical Education - ECTS

UE : Personal and professional development 1 S5 - 6 ECTS

- EC : International Engineering Practice (1) / Pratiques de l'ingénieur à l'international - 2 ECTS
- EC : Français Langue Etrangère (FLE) étudiants IBENG B1 à B2 4h (S1) partie b - undefined ECTS
- EC : Français Langue Etrangère (FLE) étudiants IBENG B1 à B2 4h (S1) partie a - undefined ECTS

IDENTIFICATION

CODE : IBENG-2-S1-EC-FLUID
ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Quizzes: 10%
Laboratory sessions: 20%
Intermediate exam: 30%
Final exam: 40%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Acquire the basic concepts in Fluid Mechanics and the vocabulary related to various kinds of fluids and flows. Apply the basic equations in Fluid Mechanics to a control volume of incompressible non-viscous fluid, in order to design simple industrial systems related to Fluid Statics or inviscid and steady state flows. Ability to understand the knowledge of flow measurement.

CONTENT

- Scope of industrial Fluid Mechanics. Presentation of several kinds of fluids and flows. Kinematics concepts.
- Presentation of hydrostatic equations and required assumptions. Industrial implementations of these equations.
- Mass and momentum equations for a control volume. Industrial implementations of these governing equations to simple flows (steady-state flow of incompressible and non-viscous fluid). Euler and Bernoulli Equations and their application conditions.
- Dimensionless analysis. Reynolds number, Laminar Flow and Turbulent Flow.
- Energy losses due to friction, the Moody Chart and Darcy friction factor.

BIBLIOGRAPHY

• R.W. Fox, P.J. Pritchard, A.T. McDonald (2009). Introduction to Fluid Mechanics, John Wiley & Sons, New York.
• W.P. Graebel (2007). Advanced Fluid Mechanics, Elsevier, New York.
• Y. A. Çengel, J. M. Cimbala. (2006) Fluid Mechanics: Fundamentals and Applications. McGraw-Hill, New-York.
• B. R. Munson, D. F. Young, T. H. Okiishi. (2006) Fundamentals of Fluid Mechanics, John Wiley & Sons, Hoboken.

PRE-REQUISITES

IBENG-1-S1-EC-MECH, IBENG-1-S2-EC-MECH, IBENG-1-S1-EC-MATHS, IBENG-1-S2-EC-MATHS

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S1-EC-MATHS
ECTS : 6

HOURS

Cours :	15h
TD :	58h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	73h
Travail personnel :	0h
Total :	73h

ASSESMENT METHOD

Assignments: 20%
Mini-project: 30%
Test 1: 25%
Test 2: 25%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

M. Guilbert Bérengère :
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M. Olagnon Christian :
christian.olagnon@insa-lyon.fr

AIMS

Mathematics in Engineering requires an understanding of the mathematical language, principles and techniques that are essential to the study of engineering.
This module helps students gain the mathematical knowledge required to understand and solve engineering problems.
Emphasis is placed on the implementation of numerical methods using computer codes and critical analysis of the numerical results.

CONTENT

Part 1 – Numerical methods
Numerical methods for non-linear equations:
• Bisection
• Newton-Raphson
• Fixed point
• Convergence issues
Numerical integration:
• Review of the main integration techniques
• Lagrangian interpolating polynomial
• Rectangle rule
• Trapezoidal rule
• Simpson's rule
• Convergence issues
Numerical methods for differential equations:
• Review of some analytical solutions to ODE's
• Euler methods
• Runge-Kutta methods
• Convergence issues
Lab work using computer codes – Applications to real-life problems.

Part 2 – Fourier series
Basic principles
Approximation of periodic functions by Fourier series

BIBLIOGRAPHY

Boas : Mathematical Methods in the Physical Sciences, Third Edition (Wiley)
Riley, Hobson and Bence, Mathematical Methods for Physics and Engineering (Cambridge)

PRE-REQUISITES

IBENG-1-S1-EC-MATHS, IBENG-1-S2-EC-MATHS

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S1-EC-INTERN
ECTS : 2

HOURS

Cours :	0h
TD :	28h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	28h
Travail personnel :	0h
Total :	28h

ASSESMENT METHOD

Oral presentation: 50%
Written report: 50%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

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AIMS

First-hand experience of the industrial world through a 4-week internship in a company
Acquire an insight into the realities of manual work via operative tasks
Acquire an overview of the organisation of a company
Develop autonomy and team work capacities

CONTENT

The one-month training period takes place at the end of semester 2 except for the students directly admitted into year 2 of the programme who must undertake it at the end of semester 4.

BIBLIOGRAPHY

n/a

PRE-REQUISITES

n/a

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S1-EC-PROD
ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Practical achievement task: 60%
Oral test: 40%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Provide theoretical knowledge of manufacturing engineering at the junior level in mechanical, industrial, and manufacturing engineering curricula.
Provide experiential learning activities of manufacturing engineering to acquire hands-on experience of specific manufacturing processes.
Students acquire fundamentals of manufacturing science and technology such as instrumentation, metrology, machining operations and machine tools, computer aided manufacturing (CAM), computer numerical control (CNC) and other technical skills.
They devolve and complete theoretical technical design skills such as mechanism design and analysis, technological functions, geometrical dimensioning and tolerancing (GD&T), computer aided design (CAD) by experiential learning activities in support of specific manufacturing machines and equipment: lathe, milling machine, coordinate measuring machine (CMM) and surface roughness measurement machine.

CONTENT

- Introduction to manufacturing engineering
- Cutting parameters
- Turning: operations related to turning, recommended tooling and insert shape
- Milling: types of milling operations, milling machines
- Drilling and related operations
- Engineering metrology and instrumentation
- Computer numerical control machining (CNC)

BIBLIOGRAPHY

ASME Y14.5 M, T. A. (2001). Dimensioning and tolrencing. New York.
Groover, M. (2010). Fundamentals of modern manufacturing. United States of America.
Innov, C. (2009). Computer numerical control (CNC) . Hong kong: industrial centre .
MachiningCloud. (2016). Introduction to Turning Tools and their Application- Identification and application of cutting tools for turning.
Madsen, D. (2016). Engineering Drawing and Design. CENGAGE Learning Custom Publishing.
SANDVIK. (2012). Cutting tools from Sandvik Coromant.
Serope Kalpakjian, S. R. (2010). Manufacturing Engineering and Technology. united states of America.
techtarget. (2016). techtarget. Récupéré sur http://searchmanufacturingerp.techtarget.com: http://searchmanufacturingerp.techtarget.com/definition/computer-numerical-control-CNC.
ToolingU. (2015). CNC Coordinates 140. Tooling University.
university, H. p. (2009). Computer numerical control (CNC). Honkong polytechinic university.
university, T. (2015). CNC Offsets 210. Tooling university.

PRE-REQUISITES

IBENG-1-S1-EC-MECH, IBENG-1-S2-EC-MECH, IBENG-1-S1-EC-DES, IBENG-1-S2-EC-DES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S1-EC-KINE
ECTS : 4

HOURS

Cours :	13h
TD :	27h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	40h
Travail personnel :	0h
Total :	40h

ASSESMENT METHOD

Assignments: 20%
Mini-project: 20%
Test 1: 30%
Test 2: 30%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

M. Velex Philippe :
philippe.velex@insa-lyon.fr

AIMS

The general objectives of this course are: a) help students visualise and understand actual mechanical configurations with their constraints and practical limitations and, b) provide guidelines to formulate problems and relate theory and practice.
The specific objectives are: a) the ability to analyse the motions in two- and three-dimensions of mechanical systems in realistic conditions and b), apply the theory to classic mechanisms and motion transformers.

CONTENT

1 – Theory of Screws (Wrenches) – A simplified approach
Definitions, sum and moment, shifting equation, scalar invariants, special screws, central axis, Delassus' theorem.
Applications to Statics

2 – Locations of solids – Constraints.
Definitions: rigid-solids, material and geometrical points, motion, physical frames and coordinate systems, path of motion, kinematical parameters,
Location of free solids, Eulerian angles
Solids submitted to constraints – Classic joints
Applications to mechanical systems (U-joints, cams, crank-rod, etc.)

3 – Kinematics of rigid-solids
Velocity and acceleration of a point
Velocity field for rigid-solids, kinematical screw, instant angular velocity vector,
Absolute and relative derivatives of vectors
Acceleration field for rigid-solids
Combinations of motions
Fundamental motions
Applications to mechanical systems (pumps, systems of bars, U-joints, etc.)

4 – Contact kinematics
Point contact kinematics, sliding, rolling, pitching, fundamental property of rigid-solid kinematics,
Applications to gear kinematics, planetary gears, differential, rolling element bearings

BIBLIOGRAPHY

J.L. MERIAM and L.G. KRAIGE, 'Engineering Mechanics- Dynamics', 6th edition, Wiley, 2010, 720 pages
A. PYTEL and J. KIUSALAAS, 'Engineering Mechanics – Dynamics', 3rd edition, Cengage Learning, 2010, 654 pages.
R. LASSIA and C. BARD, 'Dynamique, mécanique générale des solides indéformables', Ellipse, 2002, 344 pages (in French).

PRE-REQUISITES

IBENG-1-S1-EC-MECH, IBENG-1-S2-EC-MECH, IBENG-1-S1-EC-DES, IBENG-1-S2-EC-DES

IDENTIFICATION

CODE : IBENG-2-S1-EC-STRENMAT

ECTS : 4

HOURS

Cours :	13h
TD :	27h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	40h
Travail personnel :	0h
Total :	40h

ASSESMENT METHOD

Assignments: 20%
Micro-project: 20%
Test 1: 30%
Test 2: 30%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

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AIMS

Strength of materials deals with the behaviour of solid bodies that under various types of loading exhibit strains and change their shape. The solid bodies considered in this course are shafts, beams and columns that can be submitted to axial loading, torsion, bending, The major objective is to design these solids so that they can sustain these loadings, which means, selecting a material or modifying the size and shape of a real component.
The general objectives of this course are to a) help students visualise and understand actual mechanics of materials configurations with their constraints and practical limitations and, b) provide guidelines to formulate problems and relate theory and practice.
The specific objectives are: a) analyse real static situation and simplify them into shafts beam and columns to be able under specific constraints as defined in the Mechanics I course, b) calculate the stresses and strains that allow the design of components, in terms of shape and materials and c) to help students criticize and understand the limits of such calculations.

CONTENT

1. Concept of tension compression and shear
normal stress
shear stress
stress under general loading conditions
2. Stress and strain : axial loading
stress-strain diagram
material behaviour
Temperature effect
Prestressed systems
3. Torsion
circular bars
stress concentration in torsion
thin wall tubes, pure shear
4. Bending of beams
Shear force and bending moment
Stresses in beam
5. Transformation of Stresses and strains
plane stress
principal stresses
Mohr circle for plane stress
Hooke's law in plane stress
Application to pressure vessels
General stress state
7. Deflection of Beams
differential equation of the deflection beam
deflection of beam from the bending diagram
8. Statically indeterminate beams
9. Buckling of columns
Ideal columns : Euler's formula
Excentric loading

BIBLIOGRAPHY

F.P. Beer, E.R.Hohnton Jr., J.T. DeWolf, 'Mechanics of Materials', 4th edition, McGraw Hill
J. M. Gere Stephen, P. Timoshenko, 'Mechanics of Materials'

PRE-REQUISITES

IBENG-1-S1-EC-MECH (Statics), IBENG-1-S1-EC-MATER (Materials 1), IBENG-1-MATER-S2 (Materials 2), IBENG-1-MATHS-S1 (Mathematics 1), IBENG-1-MATHS-S2 (Mathematics 2)

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for IBENG students -Level A2 to B1 - 6 hours/week

IDENTIFICATION

CODEHU-2-S1-EC-L-FLE-IBENG-A2B1-6

ECTS : undefined

HOURS

Cours :	0h
TD :	78h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	78h
Travail personnel :	0h
Total :	78h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various authentic documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr

Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The courses aims at improving your French in order to feel at ease in your daily life.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.
L'apprentissage de la langue s'organise autour de l'observation du fonctionnement de la langue, de la pratique en classe d'activités varies et de la réalisation de projets dans des contextes de vie réelle ou simulée pour favoriser l'autonomie de l'étudiant et faciliter son intégration dans ses études, sa vie étudiante et sa vie sociale.

CONTENT

At the end of the course, you will be able to:
.talk about yourself, your surroundings, your hobbies and your daily life.
.interact in a daily conversation, ask and give explanations , talk about the past and the future, describe a person and objects
.find your way
.get goods and services
.use the most common structures of the scientific language
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices
.talk about the future
.make assumptions
.convince

BIBLIOGRAPHY

A2 and B1 : You will find a selection of resources available online at the following address https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

A1 to A2 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students (2nd year) -Level B1 to B2 - 4 hours week

IDENTIFICATION

CODE : HU-2-S1-EC-L-FLE-B2-2B
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enabling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds¿such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

You will find a selection of resources available online at the following address
https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-3-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education concerns the teaching of Sports and Artistic Physical Activities (APSA), and will take the form of continuous assessment with half-yearly marking.

The mark depends on the degree of acquisition of the skills expected in each of the activities, and the progress made over all the sessions in the cycle. The mark takes into account :

Individual and/or team performance
mastery of execution
Progress in the sports project
Responsibility and autonomy

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: SHS and contributes to the development of the School's transversal competences

1*Auto-evaluating one's own performance
Knowledges :
- Fundamentals, principles of action and terminology of sports activities
- Criteria for observation, achievement and success.
Abilities :
- Assess your level of practice
- Build up a warm-up
- Set goals for progress
- Manage physical and mental potential

2* Work, learn and develop independently
Knowledge :
- PSAA rules
- Observation criteria
- Principles of warm-up and cool-down
Abilities :
- Mobilise resources
- Analyse, observe, question
- Take on different roles (referee, choreographer)

3* Interact with others, work as part of a team
Knowledges :
- Roles and functions in each sports activity
Abilities :
- Communicate appropriately: verbal, non-verbal and postural communication.
- Integrate into a group
- Take part in and develop a group project
- Take the initiative
- Be a good listener

4* Be creative, innovative and enterprising
Knowledge :
- Artistic disciplines
Abilities :
- Draw on knowledge and resources from different artistic fields to produce an original work.
- Mobilise the imagination and sensibility and make them visible through dance movement
- Access the symbolism of the body

5* Act responsibly in a complex world
Knowledge :
- Safety and operating rules
Abilities :
- Identify uncertainties and risks and act to reduce them
- Integrate a responsible dimension into their actions
- Show respect and fair play in a power struggle

6* Working in an international context
Knowledge :
- Socio-cultural differences
Abilities :
- Integrate cultural diversity into group work
- Act with respect for self and others

CONTENT

Physical Education and Sport lessons are organised around traditional Physical Education lessons, or advanced lessons, or appropriate practices (EPSA), or competitive practices within the framework of the Section Sportive Haut Niveau.

1. Physcical Education lessons :
Students choose one or two physical and sporting activities per year from among the activities offered by the sports centre (individual, group, dual).
2. Appropriate Physical Education lessons: For all students who are exempt from physical activity for at least 2 months:
Swimming, Body-building, Nordic Walking, Somatic Exercise, Sophrology, Wheelchair Basketball, Pilates, Table Tennis, etc.
3. Advanced Physical Education courses :
Specialisation in a sporting activity, University training and competitions
4. SSHN (High-Level Athlete section)

University training and competitions

EPS 3GEN and GENEPI :
1st course in Hauteville in October: 2 days: outdoor activities Objective: Create team cohesion
1st term: PE lessons on Wednesdays from 8.00 to 9.30am: 9 team sports sessions

BIBLIOGRAPHY

PRE-REQUISITES

- EPS: none
- Appropriate Physical Education: subject to medical advice
- Advanced courses and competitive practice: previous practice required subject to specific selection according to each activity
- SHN: ministerial list

Levels 1 and 2: Physical Education, Appropriate physical education
Level 3: Advanced courses and competitive practice, SHN

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students (2nd year) -Level B1 to B2 - 4 hours week

IDENTIFICATION

CODE : HU-2-S1-EC-L-FLE-B2-2A
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enabling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds¿such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

You will find a selection of resources available online at the following address
https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-3-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education concerns the teaching of Sports and Artistic Physical Activities (APSA), and will take the form of continuous assessment with half-yearly marking.

The mark depends on the degree of acquisition of the skills expected in each of the activities, and the progress made over all the sessions in the cycle. The mark takes into account :

Individual and/or team performance
mastery of execution
Progress in the sports project
Responsibility and autonomy

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: SHS and contributes to the development of the School's transversal competences

1*Auto-evaluating one's own performance
Knowledges :
- Fundamentals, principles of action and terminology of sports activities
- Criteria for observation, achievement and success.
Abilities :
- Assess your level of practice
- Build up a warm-up
- Set goals for progress
- Manage physical and mental potential

2* Work, learn and develop independently
Knowledge :
- PSAA rules
- Observation criteria
- Principles of warm-up and cool-down
Abilities :
- Mobilise resources
- Analyse, observe, question
- Take on different roles (referee, choreographer)

3* Interact with others, work as part of a team
Knowledges :
- Roles and functions in each sports activity
Abilities :
- Communicate appropriately: verbal, non-verbal and postural communication.
- Integrate into a group
- Take part in and develop a group project
- Take the initiative
- Be a good listener

4* Be creative, innovative and enterprising
Knowledge :
- Artistic disciplines
Abilities :
- Draw on knowledge and resources from different artistic fields to produce an original work.
- Mobilise the imagination and sensibility and make them visible through dance movement
- Access the symbolism of the body

5* Act responsibly in a complex world
Knowledge :
- Safety and operating rules
Abilities :
- Identify uncertainties and risks and act to reduce them
- Integrate a responsible dimension into their actions
- Show respect and fair play in a power struggle

6* Working in an international context
Knowledge :
- Socio-cultural differences
Abilities :
- Integrate cultural diversity into group work
- Act with respect for self and others

CONTENT

Physical Education and Sport lessons are organised around traditional Physical Education lessons, or advanced lessons, or appropriate practices (EPSA), or competitive practices within the framework of the Section Sportive Haut Niveau.

1. Physcical Education lessons :
Students choose one or two physical and sporting activities per year from among the activities offered by the sports centre (individual, group, dual).
2. Appropriate Physical Education lessons: For all students who are exempt from physical activity for at least 2 months:
Swimming, Body-building, Nordic Walking, Somatic Exercise, Sophrology, Wheelchair Basketball, Pilates, Table Tennis, etc.
3. Advanced Physical Education courses :
Specialisation in a sporting activity, University training and competitions
4. SSHN (High-Level Athlete section)

University training and competitions

EPS 3GEN and GENEPI :
1st course in Hauteville in October: 2 days: outdoor activities Objective: Create team cohesion
1st term: PE lessons on Wednesdays from 8.00 to 9.30am: 9 team sports sessions

BIBLIOGRAPHY

PRE-REQUISITES

- EPS: none
- Appropriate Physical Education: subject to medical advice
- Advanced courses and competitive practice: previous practice required subject to specific selection according to each activity
- SHN: ministerial list

Levels 1 and 2: Physical Education, Appropriate physical education
Level 3: Advanced courses and competitive practice, SHN

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students 2nd year-Level B2 - 2 hours week

IDENTIFICATION

CODE : HU-2-S1-EC-L-FLE-B2C1
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-reading Comprehension, listening Comprehension, writing, oral production/interaction
OR
-Project

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enablling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.understand and write long and complex documents of all kinds such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
.use more or less complex structures of the scientific language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

-Resources available online at: https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B2 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-CHI
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

TEACHING LANGUAGE

French

CONTACT

Mme JIANG Chunyan :
chunyan.jiang-huang@insa-lyon.fr

AIMS

"This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition is dependent on the level of group."

CONTENT

"Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon"

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ALL
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mader Berthold :
berthold.mader@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language
by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class
The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks
that require the students to engage in the 5 linguistic activities, at a level and with linguistic
input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.
In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ITA
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

CONTACT

Mme STRELOW Isabel : isabel.strelow-antunes@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (B1-B2+) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : HU-2-S1-EC-L-JAP
ECTS :

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ESP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

The average is made up of half (50%) continuous assessment (assessments of the 5 skills carried out in class) and a common exam (50% of the average) which assesses Written Comprehension, Oral Comprehension, Grammatical and Lexical Skills and Written Expression. This common exam does not have the value of level validation.

TEACHING AIDS

Authentic and/or didactic documents related to the selected topics.
- "Pink" grammar and exercise booklets
- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. Suarez Lopez Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

AIMS

The targeted and mobilized skills are those of both the INSA Humanities Skills Framework (specifically skills 3 and 7) and the CEFR.
Consistent description of the CEFR skills.
http://www.sciencespo-lille.eu/sites/default/files/cecrl.pdf

CONTENT

The five skills recognized by the Common European Framework of Reference for Languages (CEFR) are practiced and assessed several times throughout the semester/year, ensuring regular practice of the various skills and knowledge acquired.

The themes, grammar, and vocabulary covered in class are adapted to the target level (indicated in the group code) and are at the discretion of the teacher.

BIBLIOGRAPHY

Web resources:
- for listening comprehension, grammar, and vocabulary training (all levels): http://www.ver-taal.com/index.htm
- grammar and vocabulary exercises (all levels): https://www.espagnolfacile.com/
- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

None. Courses range from beginner to advanced level. Each student will be placed in a group corresponding to their level, either through a test at the beginning of the year (for new students) or based on their level from the previous year for students already attending INSA.

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Oyarzo Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:
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--oral presentation skills
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BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-3-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education concerns the teaching of Sports and Artistic Physical Activities (APSA), and will take the form of continuous assessment with half-yearly marking.

The mark depends on the degree of acquisition of the skills expected in each of the activities, and the progress made over all the sessions in the cycle. The mark takes into account :

Individual and/or team performance
mastery of execution
Progress in the sports project
Responsibility and autonomy

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: SHS and contributes to the development of the School's transversal competences

1*Auto-evaluating one's own performance
Knowledges :
- Fundamentals, principles of action and terminology of sports activities
- Criteria for observation, achievement and success.
Abilities :
- Assess your level of practice
- Build up a warm-up
- Set goals for progress
- Manage physical and mental potential

2* Work, learn and develop independently
Knowledge :
- PSAA rules
- Observation criteria
- Principles of warm-up and cool-down
Abilities :
- Mobilise resources
- Analyse, observe, question
- Take on different roles (referee, choreographer)

3* Interact with others, work as part of a team
Knowledges :
- Roles and functions in each sports activity
Abilities :
- Communicate appropriately: verbal, non-verbal and postural communication.
- Integrate into a group
- Take part in and develop a group project
- Take the initiative
- Be a good listener

4* Be creative, innovative and enterprising
Knowledge :
- Artistic disciplines
Abilities :
- Draw on knowledge and resources from different artistic fields to produce an original work.
- Mobilise the imagination and sensibility and make them visible through dance movement
- Access the symbolism of the body

5* Act responsibly in a complex world
Knowledge :
- Safety and operating rules
Abilities :
- Identify uncertainties and risks and act to reduce them
- Integrate a responsible dimension into their actions
- Show respect and fair play in a power struggle

6* Working in an international context
Knowledge :
- Socio-cultural differences
Abilities :
- Integrate cultural diversity into group work
- Act with respect for self and others

CONTENT

Physical Education and Sport lessons are organised around traditional Physical Education lessons, or advanced lessons, or appropriate practices (EPSA), or competitive practices within the framework of the Section Sportive Haut Niveau.

1. Physcical Education lessons :
Students choose one or two physical and sporting activities per year from among the activities offered by the sports centre (individual, group, dual).
2. Appropriate Physical Education lessons: For all students who are exempt from physical activity for at least 2 months:
Swimming, Body-building, Nordic Walking, Somatic Exercise, Sophrology, Wheelchair Basketball, Pilates, Table Tennis, etc.
3. Advanced Physical Education courses :
Specialisation in a sporting activity, University training and competitions
4. SSHN (High-Level Athlete section)

University training and competitions

EPS 3GEN and GENEPI :
1st course in Hauteville in October: 2 days: outdoor activities Objective: Create team cohesion
1st term: PE lessons on Wednesdays from 8.00 to 9.30am: 9 team sports sessions

BIBLIOGRAPHY

PRE-REQUISITES

- EPS: none
- Appropriate Physical Education: subject to medical advice
- Advanced courses and competitive practice: previous practice required subject to specific selection according to each activity
- SHN: ministerial list

Levels 1 and 2: Physical Education, Appropriate physical education
Level 3: Advanced courses and competitive practice, SHN

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : HU-2-S1-EC-L-SC-O
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

Continuous assessment

TEACHING AIDS

Varied

TEACHING LANGUAGE

English

CONTACT

Mme Fitzpatrick Lorna :
lorna.fitzpatrick@insa-lyon.fr

AIMS

To provide SCAN students with a choice of content-based non-scientific modules taught in English.

To enhance students' communication skills and creativity (CT3.1, CT3.6, CT4.1).

To enable students to work with several teachers throughout the year.

To bring together students from both years of the SCAN section so as to foster a group identity and team spirit.

CONTENT

Students are required to choose 4 options per year from a total number of 12. Each option lasts for a period of 6 weeks (2 options/semester - 2 hours/week).

Each option forms a self-contained module.

For 2013-14 the following options are available:

SCAN on radio (Gatsun) by Berthold Mader (semester 1),

SCAN the web by Berthold Mader (semester 2),

Public Speaking by Erin Tremouilhac/Krystyna Irvine (semester 1)

SCAN Yearbook by Erin Tremouilhac/Krystyna Irvine (semester 2),

Face to Face by Cindy Garçon (semester 1),

Close Encounters by Cindy Garçon (semester 2),

Negotiating by Siobhan Wegeler (semester 1),

Profiling Scan by Siobhan Wegeler (semester 2),

Futurism by Krystyna Eliard (semester 1)

An insight into South African Culture by Krystyna Eliard (semester 2)

Engineering and Activism by Jeannie Jouffroy (semester 1),

The New Golden Age of Television by Jeannie Jouffroy (semester 2).

A detailed description of each module may be obtained by e-mailing scan@insa-lyon.fr

BIBLIOGRAPHY

As defined by the teacher of each module

PRE-REQUISITES

The options are open to all SCAN students who are exempt from studying French as a foreign language.

Minimum language level required: B2

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-CHI
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

TEACHING LANGUAGE

French

CONTACT

Mme JIANG Chunyan :
chunyan.jiang-huang@insa-lyon.fr

AIMS

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--talk about a society or a social phenomenon

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CONTENT

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--a topic about a society or a social phenomenon"

BIBLIOGRAPHY

PRE-REQUISITES

None

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Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

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BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ALL
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mader Berthold :
berthold.mader@insa-lyon.fr

AIMS

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It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language
by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
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BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ITA
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

AIMS

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--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

CONTACT

Mme STRELOW Isabel : isabel.strelow-antunes@insa-lyon.fr

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Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : HU-2-S1-EC-L-JAP
ECTS :

HOURS

Cours :	0h
TD :	26h
TP :	0h
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ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

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INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ESP
ECTS : 2

HOURS

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- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. Suarez Lopez Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

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- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

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INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-2-S1-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Oyarzo Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : BENG-2-S2-EC-ECAM-PDW

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : BENG-2-S2-EC-ECAM-MUPR

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE IBENG-2-S2-EC-ECAM-SUSD

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE : BENG-2-S2-EC-ECAM-EMB

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE I:BENG-2-S2-EC-ECAM-ELMAG

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : BENG-2-S2-EC-ECAM-NUM

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE IBENG-2-S2-EC-ECAM-MATH

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE I:BENG-2-S2-EC-ECAM-MATER

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE IBENG-2-S2-EC-ECAM-SOLMEC

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE : BENG-2-S2-EC-ECAM-DES

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : BENG-2-S2-EC-ECAM-PPDEV

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : BENG-2-S2-EC-WSCHOOL

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE IBENG-2-S2-EC-TW-MECMAT

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE : BENG-2-S2-EC-TW-MATHS

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODEIBENG-2-S2-EC-TW-MACHELEM

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : BENG-2-S2-EC-TW-DESPROJ

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE IBENG-2-S2-EC-TW-PRFLUID
ECTS : 7

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Project defence and report: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific goals for the course

This project module is aimed at putting into practice the principles and theory developed in the module Fluid Mechanics IBENG-2-S2-EC-TW-FLUID. Actual industrial problems will be proposed and the students are expected to make significant contributions to the design or development of the real system.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

Fluid mechanics is the discipline that describes the dynamics and mechanics of fluids (liquids and gases). Many applications are involved, such as computing forces on airplanes, determining the fluid velocity in an injection needle, the effects of a rough sea on the dynamics of a ship, making a weather forecast or even describing traffic on roads. The purpose of the discipline is to describe characteristic variables such as velocity, density, pressure and temperature as functions of space and time.

BIBLIOGRAPHY

“Fluid Mechanics I" by R. Hagmeijer (online, free available)

PRE-REQUISITES

IBENG-2-S1-EC-FLUID, IBENG-2-S2-EC-TW-FLUID

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE :IBENG-2-S2-EC-TW-FLUID

ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Final exam: 100%

TEACHING AIDS

TEACHING LANGUAGE

French

CONTACT

AIMS

Brief description of the content of the course

Fluid mechanics is the discipline that describes the dynamics and mechanics of fluids (liquids and gases). Many applications are involved, such as computing forces on airplanes, determining the fluid velocity in an injection needle, the effects of a rough sea on the dynamics of a ship, making a weather forecast or even describing traffic on roads. The purpose of the discipline is to describe characteristic variables such as velocity, density, pressure and temperature as functions of space and time. In the course Fluid Mechanics 1 the integral and differential formulations of the three conservation principles of mass, momentum and energy are derived. Limiting cases such as steady and inviscid flows are discussed. Several applications of the integral formulations are treated such as computing the force on a construction. Fully developed incompressible flows are introduced and the reduced Navier-Stokes equations are derived. Also introduced are the concepts of dimension analysis, similarity and Reynolds number. Subsequently compressible flows are discussed based on a perfect gas modeling. Finally, the concepts of total pressure, -density and -temperature are introduced.

CONTENT

Specific outcomes of instruction:
1. To be able to analytically compute the force by a flow on a construction based on the integral momentum equation, to be able to check the physical dimensions and to be able to analyse the asymptotic behaviour.
2. To be able to analytically compute a fully developed flow based on the reduced Navier-Stokes equations, including shear stress, to be able to check the physical dimensions and to be able to analyse the asymptotic behaviour.
3. To be able to compute temperature, pressure and density in a steady compressible flow based on streamline invariants and to know the conditions under which the relations used are valid.
4. To be able to manipulate partial differential equations by means of the product rule, the chain rule and the Einstein summation convention, with the purpose to analyse the properties of flows.
5. To be able to perform dimension analysis based on a given problem formulation with a number of dimensional parameters.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

BIBLIOGRAPHY

“Fluid Mechanics I" by R. Hagmeijer (online, free available)

PRE-REQUISITES

IBENG-2-S1-EC-FLUID

IDENTIFICATION

CODE :IBENG-2-S2-EC-TW-HEAT
ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Final exam: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific goals for the course

Specific outcomes of instruction:
1. To apply the basic relations for the three heat transfer mechanisms (conduction, convection and thermal radiation) to steady situations
2. Determine steady heat transfer rates for internal and external flows, using correlations and graphs
3. Determine unsteady temperature distributions inside objects using theoretical relations and graphs.
4. Explain how various relations can be derived from the conservation laws of mass, momentum and energy.
5. Derive dimensionless groups from conservation laws or from dimensional analysis. Understand the use and interpretation of these dimensionless groups.
6. Understand the theory and concepts of heat transfer by forced convection in external land internal flows object and be able to apply the basic relations for quantification in realistic problems
7. Understand the theory and concepts of heat transfer by natural convection in external flow and in confinements and be able to apply the basic relations for quantification in realistic problems
8. Elementary knowledge of the theory and concepts of heat transfer by radiation, and the ability to quantify heat transfer by radiation for enclosures of thermally black surfaces.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

In numerous engineering systems, the thermal management of great importance. The course Heat Transfer addresses the three mechanisms of heat transfer (conduction, convection and radiation) on the basis of practical applications. Because convective heat transfer takes place by means of the flow of gases and liquids, the essential basic phenomena in fluid dynamics are also discussed.

BIBLIOGRAPHY

Heat and Mass Transfer: Fundamentals and applications, 4th edition; Y.A. Cengel & A.J. Ghajar, McGrawHill

PRE-REQUISITES

IBENG-2-S1-EC-FLUID

IDENTIFICATION

CODE IBENG-2-S2-EC-TW-PRFLUID
ECTS : 7

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Project defence and report: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific goals for the course

This project module is aimed at putting into practice the principles and theory developed in the module Fluid Mechanics IBENG-2-S2-EC-TW-FLUID. Actual industrial problems will be proposed and the students are expected to make significant contributions to the design or development of the real system.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

Fluid mechanics is the discipline that describes the dynamics and mechanics of fluids (liquids and gases). Many applications are involved, such as computing forces on airplanes, determining the fluid velocity in an injection needle, the effects of a rough sea on the dynamics of a ship, making a weather forecast or even describing traffic on roads. The purpose of the discipline is to describe characteristic variables such as velocity, density, pressure and temperature as functions of space and time.

BIBLIOGRAPHY

“Fluid Mechanics I" by R. Hagmeijer (online, free available)

PRE-REQUISITES

IBENG-2-S1-EC-FLUID, IBENG-2-S2-EC-TW-FLUID

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE :IBENG-2-S2-EC-TW-FLUID

ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Final exam: 100%

TEACHING AIDS

TEACHING LANGUAGE

French

CONTACT

AIMS

Brief description of the content of the course

Fluid mechanics is the discipline that describes the dynamics and mechanics of fluids (liquids and gases). Many applications are involved, such as computing forces on airplanes, determining the fluid velocity in an injection needle, the effects of a rough sea on the dynamics of a ship, making a weather forecast or even describing traffic on roads. The purpose of the discipline is to describe characteristic variables such as velocity, density, pressure and temperature as functions of space and time. In the course Fluid Mechanics 1 the integral and differential formulations of the three conservation principles of mass, momentum and energy are derived. Limiting cases such as steady and inviscid flows are discussed. Several applications of the integral formulations are treated such as computing the force on a construction. Fully developed incompressible flows are introduced and the reduced Navier-Stokes equations are derived. Also introduced are the concepts of dimension analysis, similarity and Reynolds number. Subsequently compressible flows are discussed based on a perfect gas modeling. Finally, the concepts of total pressure, -density and -temperature are introduced.

CONTENT

Specific outcomes of instruction:
1. To be able to analytically compute the force by a flow on a construction based on the integral momentum equation, to be able to check the physical dimensions and to be able to analyse the asymptotic behaviour.
2. To be able to analytically compute a fully developed flow based on the reduced Navier-Stokes equations, including shear stress, to be able to check the physical dimensions and to be able to analyse the asymptotic behaviour.
3. To be able to compute temperature, pressure and density in a steady compressible flow based on streamline invariants and to know the conditions under which the relations used are valid.
4. To be able to manipulate partial differential equations by means of the product rule, the chain rule and the Einstein summation convention, with the purpose to analyse the properties of flows.
5. To be able to perform dimension analysis based on a given problem formulation with a number of dimensional parameters.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

BIBLIOGRAPHY

“Fluid Mechanics I" by R. Hagmeijer (online, free available)

PRE-REQUISITES

IBENG-2-S1-EC-FLUID

IDENTIFICATION

CODE :IBENG-2-S2-EC-TW-HEAT
ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Final exam: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific goals for the course

Specific outcomes of instruction:
1. To apply the basic relations for the three heat transfer mechanisms (conduction, convection and thermal radiation) to steady situations
2. Determine steady heat transfer rates for internal and external flows, using correlations and graphs
3. Determine unsteady temperature distributions inside objects using theoretical relations and graphs.
4. Explain how various relations can be derived from the conservation laws of mass, momentum and energy.
5. Derive dimensionless groups from conservation laws or from dimensional analysis. Understand the use and interpretation of these dimensionless groups.
6. Understand the theory and concepts of heat transfer by forced convection in external land internal flows object and be able to apply the basic relations for quantification in realistic problems
7. Understand the theory and concepts of heat transfer by natural convection in external flow and in confinements and be able to apply the basic relations for quantification in realistic problems
8. Elementary knowledge of the theory and concepts of heat transfer by radiation, and the ability to quantify heat transfer by radiation for enclosures of thermally black surfaces.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

In numerous engineering systems, the thermal management of great importance. The course Heat Transfer addresses the three mechanisms of heat transfer (conduction, convection and radiation) on the basis of practical applications. Because convective heat transfer takes place by means of the flow of gases and liquids, the essential basic phenomena in fluid dynamics are also discussed.

BIBLIOGRAPHY

Heat and Mass Transfer: Fundamentals and applications, 4th edition; Y.A. Cengel & A.J. Ghajar, McGrawHill

PRE-REQUISITES

IBENG-2-S1-EC-FLUID

IDENTIFICATION

CODE : IBENG-2-S2-EC-TW-DYNA2

ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Final exam: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Brief description of the content of the course

The course Dynamics 2 is about mechanical systems that are able to vibrate. Starting with a system's kinematics, the number of degrees of freedom and number of constraints is established. The system's equation of motion is derived using both a Newton-Euler approach and a Lagrange approach. For the purpose of structural vibrations, the concepts of natural frequencies and natural modes are explained and the concept of modal analysis is introduced. The free and forced vibration response of linearized systems is discussed by applying the appropriate mathematical tools for solving ODEs and PDEs.

CONTENT

Specific goals for the course

Specific outcomes of instruction:
At the end of Dynamics 2, a student is able to perform a dynamic analysis on discrete or continuous systems by:
• Performing a kinematic analysis
• Deriving the equation of motion
• Determining the natural frequencies and natural modes
• Determining the free and forced vibration response
Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

BIBLIOGRAPHY

Lecture notes

PRE-REQUISITES

IBENG-1-S2-EC-MECH ,IBENG-2-S1-EC-MATHS, IBENG-2-S1-EC-KINE

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S2-EC-TW-SYSCONT

ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Final exam: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific goals for the course

Specific outcomes of instruction:
• Analyse the description of a electromechanical system with one or more degrees of freedom and apply a systematic approach to build a lumped parameter model of this system.
• Analyse closed-loop performance and stability of controlled single-input single-output mechanical systems with (parasitic) internal resonances from the closed-loop poles as well as using Bode and Nyquist diagrams.
• Analyse dynamic and static error requirements for a closed-loop system and translate these into low-frequent system requirements in terms of system type and crossover frequency.
• Analyse the (parasitic) internal resonances in the frequency domain and translate these into high-frequent system requirements for (robust) stability using the small-gain theorem.
• Design the control subsystem for a mechatronic system with a P(I)D-like feedback controller and feedforward control in order to meet stability requirements and performance specifications while taking the nominal and parasitic dynamics of the single degree-of-freedom mechanical subsystem into account.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

A mechatronic system consists of a major mechanical subsystem, sensors, actuators and a controller to realise a controlled mechanical motion. Many contemporary mechanical systems have controls to enhance their functionality, in particular the smart devices and precision mechanisms realised by the Dutch high-tech industry. This course deals with the analysis of the dynamic behaviour of such controlled systems as well as methods to design the necessary controllers.

To this end, the systematic modelling approach of the course System Analysis is extended to build lumped parameter models of electromechanical systems with more than one degree of freedom. Desired dynamic closed-loop behaviour is realised by adding feedback and feedforward control, e.g. using P(I)D-like controllers. Two key ingredients in the analysis and design methods are:
• From an analysis of the low frequent approximations of the remaining error the crossover frequency appears to be the crucial system parameter for which requirements are formulated in order to meet performance criteria.
• From an analysis of the high frequent system behaviour it can be examined whether (parasitic) high order resonances can negatively affect the (robust) stability.
In this course only single-input single-output (SISO) systems are considered. It offers an introduction for an integrated design approach of mechatronic systems and a basis for more advanced courses on systems and control.

BIBLIOGRAPHY

Lecture notes: “Design and Control of Mechatronic Systems”,

PRE-REQUISITES

IBENG-2-S1-EC-MATHS

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S2-EC-TW-MECHAPR

ECTS : 7

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Final exam: 50%
Report: 50%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific outcomes of instruction:
At the end of this project, the student is able to
• Design a precision mechatronic system from performance specifications by integral design of the nominal and parasitic dynamics of the single degree-of-freedom mechanical subsystem and the PID-like controller.
• Design and execute a measurement procedure to obtain the steady-state and frequency response of a mechanical system.
• Implement and tune a digital PID-like controller for a mechatronic system from a measured frequency response and the specified performance and stability margins.
• Evaluate the performance of a precision mechatronic system by designing and executing effective experiments and by verification of the performance specifications from the experimental results.
• Reflect based on his/her own strong and weak points in the role of a mechanical engineering student as well as future professional and to translate the reflection into clear action points.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

Many contemporary mechanical motion systems have electromechanical actuation, motion sensors and embedded control systems to enhance their functionality. Such mechatronic systems are essential for robotics, smart devices and the precision mechanisms of the (Dutch) high-tech industry. This project considers the design of such mechatronic system through a full design cycle.
Before the actual design project, practicums are scheduled to get hands-on experience with measuring the frequency of a mechatronic system and the tuning its PID controller. The design project starts with creating a conceptual design of the mechatronic system to meet the given performance requirements. The design integrally considers the dynamics of the (single-degree-of-freedom) mechanical subsystem and the control system. In a subsequent design step the design is further detailed including consideration of stability robustness against parasitic effects like actuator dynamics, high-frequency dynamics and controller delay. After detailing the design, it is actually realized by the students from a mechatronic building kit that provides control electronics, an actuator, a sensor and modular mechanics, supplemented by custom designed components. The static and dynamic performance of the system are verified against the design specifications. After implementation and retuning of the controller, the mechatronics system is tested against the performance specifications. These results provide the input for the final evaluation of the design.
In the academic skills part of the project, the students reflect on their own strong and weak points to prepare for their future.

BIBLIOGRAPHY

Lecture notes: “Design and Control of Mechatronic Systems”,

PRE-REQUISITES

IBENG-1-S2-EC-MECH, IBENG-2-S1-EC-MATHS, IBENG-2-S2-EC-TW-SYSCONT

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S2-EC-LAB
ECTS : 3

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Report writing assignment: 20%
Risk assessment assignment: 20%
Lab session A: 30%
Lab session B: 30%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific outcomes of instruction:

On completion of this course, students are expected to be able to:
a) understand and appreciate safety in the laboratory
b) have experience of carrying out a simple risk assessment and an appreciation for safe working practices in the laboratory
c) have an appreciation for the conduct of experimental work, recording results and evaluating errors
d) have experience of writing a formal report in the correct style, including graphical representations of data, and appropriate referencing of literature
e) appreciate the use of online activities as part of their learning process

Contributes to the following student outcomes:
6 – An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

CONTENT

Brief description of the content of the course

The aim of this class is to introduce students to a range of experimental and laboratory related skills, appropriate to Mechanical and Aerospace Engineering. This will include elements of laboratory and workshop safety including risk assessment procedures. Students will develop an understanding of how to conduct experiments, record data, evaluate errors and write a technical report.
Syllabus:

Each student will develop skills in report writing in the appropriate style
Each student will learn about the assessment of risk and its management. Each student will submit an individual online version the risk assessment, including a personal reflection on lab safety
Each student will attend two lad sessions to conduct experiments related to core classes in the first year Mechanical Engineering curriculum. Each lab session will be preceded by an on-line pre-lab giving background information to each task. Students will submit a formal lab report, which will be formatted in a standard style to introduce report-writing skills including error analysis and referencing
Each student will participate individually and as student group in online discussion forums.

BIBLIOGRAPHY

N/A

PRE-REQUISITES

N/A

IDENTIFICATION

CODE : IBENG-2-S2-EC-ETHICS
ECTS : 3

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Course works (2): 50% each

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

This class aims to create awareness of and develop skills expected in graduate professional engineers. These include the development of communication skills (both oral and written), societal impact, future trends, and ethics. As a significant part of a professional engineer's responsibilities involves ethics, this forms a large part of the class. The study of engineering ethics within an engineering course helps students prepare for their professional lives. A specific advantage for engineering students who learn about ethics is that they develop clarity in their understanding and thoughts about ethical issues and the practice in which they arise. The study of ethics helps students to develop widely applicable skills in communication, reasoning, and reflection, with an understanding of the importance and benefits of supporting equality, diversity, and inclusion. These skills enhance students' abilities and help them engage with other aspects of the engineering programme such as group work and work placements.
Specific outcomes of instruction:

On completion of the module, the student is expected to be able to:
• Identify and develop skills that are required of a professional, accredited engineer by self- and peer-evaluation
• Explain the societal impact and professional responsibility of an engineer
• Examine case studies in engineering ethics using engineering principles
• Develop a professional ethical identity to carry forward in their working life

CONTENT

The module will teach the following:
• The benefits and importance of inclusivity from equality, diversity, and inclusion.
• Communication skills: written and oral. Group working skills.
• Societal and contemporary issues in engineering
• Professional conduct, ethics, and the legal aspects of professional responsibility.

A Case Study approach, using interactive group sessions is adopted (groups will be allocated at random utilising Myplace). The syllabus broadly covers awareness of issues, obligations and responsibilities. It will sensitise students to societal and ethical issues, resolving practical problems as well as enable students to identify questionable practice and ethical issues. Additionally, students will be given opportunity to enhance their ability to examine and weigh up opposing arguments, reflect upon and provide critique ethical issues, and provide consolidation of ethics skills and practice. The primary outcome of the module will be to have introduced the students to the ethical issues and responsibilities of being a professional engineer.

BIBLIOGRAPHY

N/A

PRE-REQUISITES

IBENG-2-S3-EC-INTERN

IDENTIFICATION

CODE :IBENG-2-S2-EC-AUTOSYS

ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Coursework (2): 50% each

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific outcomes of instruction:

On completion of this course, students are expected to be able to:
a) understand the engineering concepts involved in the principle components of a motor vehicle
b) appreciate the range of alternative design solutions employed in practice
c) be aware of possible future scenarios for motor vehicle development.

Contributes to the following student outcomes:
2- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

CONTENT

This course aims to impart an understanding of the influences, which have shaped automotive engineering design in the past and explore possible future scenarios. It is also aims to convey the fundamental engineering principles involved in the design and manufacture of the principal components of a vehicle, motive power unit, structure and running gear.
Syllabus:
The module will teach the following
• current environmental and safety legislation
• IC engine fundamentals
• Power train options and system matching
• Electrical drives
• Hybrid and alternative vehicle designs

BIBLIOGRAPHY

N/A

PRE-REQUISITES

IBENG-2-S3-EC-KINE

IDENTIFICATION

CODE : IBENG-2-S2-EC-AERODES

ECTS : 5

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Course works (2): 45% each

On-line quiz/test: 10%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific outcomes of instruction:

On completion of this course, students are expected to be able to:
a) demonstrate a thorough understanding of high lift devices on wings
b) demonstrate a thorough understanding of the linkages between aircraft performance and aerodynamic performance
c) demonstrate a thorough understanding of the relationship between the center of gravity location and the stability and controllability of conventional aircraft.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

This course will cover the calculation of the performance of aircraft including indicated and true airspeed, steady level flight, minimum drag and minimum power flight speed, steady glide and climb, take-off and landing, steady turning flight, range and endurance, flight and gust envelopes. The class is also intended to introduce students to the mathematical modelling tools they will require in the third year Flight Mechanics class.

Syllabus:
The module will teach the following:
1.The equations of motion in body-axis and wind-axis reference frames.
2.Avionics: flight Instruments
3.Aircraft performance: flight envelope;
4.Performance during glide and climb;
5.Range and endurance.
6.Take-off and landing.
7.Manoeuvring flight.
8.Longitudinal and lateral-directional static stability.
9.Concepts of dynamic stability.

BIBLIOGRAPHY

J. D. Anderson, 'Introduction to Flight', McGraw Hill, ISBN 0-07-109282-X

PRE-REQUISITES

IBENG-2-FLUID-S3

IDENTIFICATION

CODE :IBENG-2-S2-EC-SPACEFLI

ECTS : 5

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

On-line final exam: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific goals for the course

Specific outcomes of instruction:

On completion of the module the student is expected to have a sound knowledge of:
a) The history of flight, aircraft propulsion, and spaceflight.
b) The generation of lift, drag and thrust
c) Aircraft flight instruments
d) Aircraft and rocket propulsion and rocket staging

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

CONTENT

Brief description of the content of the course

This module aims to give a theoretical and historical background to the development of modern aircraft and spacecraft design.

Syllabus:

The module will teach the following:
1. History of flight.
2. Theoretical aerodynamics: aircraft layout and nomenclature, lift and drag coefficients, Bernoulli's equation.
3. Generation of lift: aerofoil aerodynamics, boundary layers, stall, high lift devices.
4. Generation of drag: lift induced, wave, form, skin friction, interference, trim, cooling.
5. Flight instruments: airspeed indicator, indicated and equivalent airspeed, altimeter, rate of climb meter, International Standard Atmosphere.
6. Bluff body aerodynamics: flows past cylinders, spheres and bluff bodies, vortex shedding industrial aerodynamics.
7. Generation of thrust: propeller theory, history of turbojet development, gas turbines, inlets, compressors, combustion chambers, turbines and afterburners.
8. Spaceflight: history of rocket development, rocket engines, multistaging, escape velocity

BIBLIOGRAPHY

RH Barnard and DR Philpott, 'Aircraft flight', Longman, ISBN 0-582-00338-5
J.G. Leishman, "Introduction to aerospace flight vehicles", e-book ISBN 979-8-9852614-0-0
https://eaglepubs.erau.edu/introductiontoaerospaceflightvehicles
J. Anderson, "Introduction to Flight" by, McGraw Hill, ISBN 007-123818-2

PRE-REQUISITES

IBENG-2-S3-EC-FLUID

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-2-S2-EC-FE
ECTS : 5

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

On-line coursework (2) : 20% each
Exam (1): 60%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Specific outcomes of instruction:

On completion of this course, students are expected to be able to:
a) understand the basic theory of the Finite Element Method (FEM).
b) Use FEM software ANSYS Workbench to solve various simplified practical engineering problems,
c) Understand how mathematics, numerical analysis and computed technology are combined to model and simulate the behavior of mechanical systems.

Contributes to the following student outcomes:
1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

CONTENT

This module aims to introduce the students to the theory and application of the Finite Element Method, which is widely used numerical method in engineering analysis.
Syllabus:

The module will teach the following:
Mathematical modelling of engineering systems using the Finite Element Method: Theory and Practice
Introduction to the commercial FE program ANSYS Workbench
Applications to structural analysis and stress analysis

BIBLIOGRAPHY

Huei-Huang Lee, 'Finite Element Simulations with ANSYS Workbench 17', SDC Publications, ISBN: 1630570885

PRE-REQUISITES

IBENG-2-S3-EC-STRENMAT, IBENG-2-S3-EC-MATHS

IDENTIFICATION

CODE : BENG-2-S2-EC-HU-STRAT

ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S1-EC-MATER
ECTS : 5

HOURS

Cours :	0h
TD :	72h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	72h
Travail personnel :	0h
Total :	72h

ASSESMENT METHOD

Homework oral presentation: 15 %
Intermediate exam (1 hour): 40%
Final exam (1.5 hours): 45%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

M. Dureisseix David :
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M. Philippon David :
david.philippon@insa-lyon.fr

AIMS

Gain a general overview of the variety of materials, of their classification, and of the notion of material from a macroscopic engineering point of view. Notion on what are material characteristics and precise knowledge of classical ones, from their identification up to use of database of materials properties, with dedicated examples. Use a methodology for design and selection of materials, using target-oriented optimization, on mechanical design applications.

CONTENT

1. The macroscopic classes of materials: several materials for several usages
1.1 States of matter and rough classes of materials
1.2 Scales and properties, material vs structure
1.3 Aeronautics use
2. Recalls on units
3. Examples of material properties: test principles and intrinsic properties
2.1 Mechanical properties: stiffness and strength
2.2 General properties: density
2.3 Thermal properties: thermal conductivity and specific heat capacity
4. Use of log scales and charts
5. Material selection: method and objective
3.1 Optimization: cost function, constraint, free variable
3.2 Performance index
3.3 Selection issue and design solution

BIBLIOGRAPHY

Materials Selection in Mechanical Design, M. Ashby, Elsevier, (not a textbook, but available at main library)

PRE-REQUISITES

High school physics and general mechanics, analytical developments for simple equations and inequations

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S1-EC-MECH
ECTS : 5

HOURS

Cours :	13h
TD :	47h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	60h
Travail personnel :	0h
Total :	60h

ASSESMENT METHOD

Mini-tests : 30%
Mid-term exams: 30%
Final exam: 60%

TEACHING AIDS

Textbook and slides

TEACHING LANGUAGE

English

CONTACT

M. VELEX Philippe :
philippe.velex@insa-lyon.fr

AIMS

Engineering Mechanics mostly deals with the behaviour of bodies under the action of forces and Statics forms one the bases for many of the traditional fields of engineering but also play fundamental roles in medicine and biology for instance.
The general objectives of this course are: a) help students visualise and understand actual mechanical configurations with their constraints and practical limitations and, b) provide guidelines to formulate problems and relate theory and practice.
The specific objectives are: a) the ability to analyse the two- and three-dimensional equilibrium of solids, frames and machines in realistic conditions and b), determine the forces and moments required as boundary conditions for Strength of Materials analyses

CONTENT

1 – Introduction to Statics:
• basic concepts,
• scalar and vectors, vector algebra,
• Newton's laws,
• problem solving strategies in Statics
2 – Force systems:
• forces on rigid-bodies, transmissibility principle
• two-dimensional force systems:
o vector and graphical representations
o moments and couples
o resultants
• three-dimensional force systems
o vector representation
o moments and couples
o resultants
3 – Equilibrium:
• free-body diagrams, equilibrium in two dimensions
• equilibrium in three dimensions
4 – Applications in Engineering:
• Frames and machines
• Fluid statics
• Friction

BIBLIOGRAPHY

J.L. MERIAM and L.G. KRAIGE, 'Engineering Mechanics- Statics', 6th edition, Wiley, 2008, 510 pages
A. PYTEL and J. KIUSALAAS, 'Engineering Mechanics – Statics', 3rd edition, Cengage Learning, 2010, 584 pages.

PRE-REQUISITES

High school Algebra and Geometry

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S1-EC-DES
ECTS : 3

HOURS

Cours :	0h
TD :	56h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	56h
Travail personnel :	0h
Total :	56h

ASSESMENT METHOD

Assignments: 75%
Projects: 25%

TEACHING AIDS

Lecture notes

TEACHING LANGUAGE

English

CONTACT

M. Ruzek Michal :
michal.ruzek@insa-lyon.fr

AIMS

The objectives of the Mechanical Design course are:
a) learn how to read technical drawings and represent mechanical systems using the standard drawing techniques including a CAD software
b) understand how mechanical systems operate; identify their strengths, weaknesses, and general usage.
c) Basic aspects of the sustainable engineering are introduced.
Mechanical Design 1 is divided into three parts comprising lectures, tutorials and student projects:
a) Introduction to the rules of technical drawing rules based on the orthogonal projection method, perspective and to CAD modelling technique using SolidEdge © software. Team projects will be proposed at the end of this section with the objective of creating a CAD assembly model out of a 2D draft.
b) Several topics concerning the mechanical technology are introduced: technical vocabulary, problem of friction, design of screws. Students are encouraged to use a hands-on approach; they are given a personal caliper for the entire first year. The caliper is used extensively to inverse engineering modules in the S1 and S2. In the first semester students measure and represent a mechanical part, in the second semester, they do the same with an assembly of parts.
c) Some basic aspects of sustainable engineering are considered, namely the elements of engineering product and material end-of-life.

CONTENT

Introduction to technical drawing:
• Drawing rules,
• Represent volumes in 2D, in projection and in perspective
• Cross-sections and sectional views
• CAD: creating parts
• Project: drawing, create 2D drafts from given parts.
• Elementary mechanical design vocabulary
• Lecture: friction in machines
• Lecture: principles and evolution of screws

BIBLIOGRAPHY

C.Simmons, D.Maguire, Manual of Engineering Drawing, 4th Edition, 2012

PRE-REQUISITES

n/a

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S1-EC-MATHS
ECTS : 5

HOURS

Cours :	20h
TD :	40h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	60h
Travail personnel :	0h
Total :	60h

ASSESMENT METHOD

Assignments : 20%
Midterm exam : 20%
Mini-tests : 20%
Final exam : 40%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Mathematics in Engineering requires an understanding of the mathematical language, principles and techniques that are essential to the study of engineering.
This module helps students gain the mathematical knowledge required to understand and solve engineering problems.

CONTENT

- Basic trigonometry, differentiation and integration
- Introduction to multiple integration
- Conics
- First and second order ordinary differential equations
- Elementary functions
- Proof (induction, recurrence relations, counter-example)
- Real numbers
- Limits, continuity and differentiability
- Differential calculus
- Taylor series
- Polynomials and partial fractions
- Sequences

BIBLIOGRAPHY

Boas : Mathematical Methods in the Physical Sciences, Third Edition (Wiley)
Jordan and Smith : Mathematical Techniques (Oxford)

PRE-REQUISITES

High school mathematics

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE :IBENG-1-S1-EC-ENGCOM

ECTS : 2

HOURS

Cours :	0h
TD :	45h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	45h
Travail personnel :	0h
Total :	45h

ASSESMENT METHOD

Portfolio: 30%
Team work assessment: 20%
Oral presentation: 50%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

Mme Wegeler Siobhan :
siobhan.wegeler@insa-lyon.fr

AIMS

Communicating effectively for engineers in a professional and multi-cultural context
a) Developing team work building skills
b) Enhancing oral communication with effective visual support
c) Consolidating written communication

CONTENT

Intensive week in January
Team work building (theory and role plays) 6h
Communication skills (theory, optimizing strategies in terms of verbal and non-verbal communication and application) 6h
Writing skills 2h
Building a substantial team presentation (+ work outside class) 2h
Oral assessment 2h
Introduction to Cross-cultural Communication 2h

BIBLIOGRAPHY

Mark Powell, Dynamic Presentations, 2010, Cambridge University Press.
Erica J. Williams, Presentations in English, 2008, Macmillan.

PRE-REQUISITES

n/a

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S1-EC-ELEC
ECTS : 4

HOURS

Cours :	14h
TD :	52h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	66h
Travail personnel :	0h
Total :	66h

ASSESMENT METHOD

Assignments and/or graded homework: 25%
Intermediate exam: 25%
Final exam: 50%

TEACHING AIDS

Lecture notes

TEACHING LANGUAGE

English

CONTACT

M. Wood Thomas :
thomas.wood@insa-lyon.fr

AIMS

The aims of this first-year module is to introduce mechanical engineering students to basic electrical components and concepts, and to equip them with the knowledge and tools to analyse and design simple circuits and systems. Following this, basic electromagnetism concepts are dealt with so as to build up the knowledge base necessary to allow the students to understand the operating principle of electric motors.
On successful completion of this module, students should be able to:

Demonstrate knowledge of basic circuit principles and theorems
Demonstrate knowledge of basic circuit design so as to meet certain specifications
Understand the operating principle of electric motors and induction-based components

CONTENT

1 – Fundamentals of Electricity and Electrical circuit Analysis:
• Electrical Charge, Power, Force, Work, …
• Batteries
• Circuit Components and Symbols
• Ohm's Law
2 – Direct Current:
• Series and parallel circuits
• Power in circuits
• Kirchhoff's Laws
• Thevenin's Theorem, etc
3 – Alternating Current:
• Generation of AC signals
• Sine wave fundamentals
• Phasors
• Power aspects
4 – Capacitance and Capacitive Circuits
• Introduction to Electric Fields & Energy Stored
• Capacitance
• Capacitive Reactance
• Capacitive Circuits
5 – Induction and Inductive Circuits
• Introduction to Magnetism and Magnetic Fields
• Inductance of Coils
• Inductive Reactance
• Electromagnetic induction
• Transformers
6 – DC Motors
• Electromechanical coupling
• Motor types and characteristics

BIBLIOGRAPHY

Raymond Serway "Physics for Scientists and Engineers with Modern Physics", Thomson – Brooks/Cole, 7th Edition, 2008.
John Bird "Electrical Circuit Theory and Technology", Routledge, 5th Edition, 2013.

PRE-REQUISITES

High school Algebra and Geometry

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -Level B1 to B2 - 4 hours week

IDENTIFICATION

CODE : HU-1-S1-EC-L-FLE-B2-2A
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking
The course aims at giving you all the language skills you need to feel at ease in your daily
life then at enabling you to express yourself in such a way that writing or talking to a native
speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.
You will observe how the language works, you will practice a wide range of various activities,
you will actively take part in projects that will lead you to be more autonomous and that will
greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds¿such as administrative or
professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours,
student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

A2 /B1 You will find a selection of resources available online at the following address https://
fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -Level B1 to B2 - 4 hours week

IDENTIFICATION

CODE : HU-1-S1-EC-L-FLE-B2-2B
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking
The course aims at giving you all the language skills you need to feel at ease in your daily
life then at enabling you to express yourself in such a way that writing or talking to a native
speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.
You will observe how the language works, you will practice a wide range of various activities,
you will actively take part in projects that will lead you to be more autonomous and that will
greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds¿such as administrative or
professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours,
student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

A2 /B1 You will find a selection of resources available online at the following address https://
fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-2-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education relates to what has been taught in the APSA (Physical, Sports and Artistic Activities), in the form of an in-service assessment in the activity, with final marking every six months.

The mark takes into account :
-The degree of acquisition and mastery of the motor skills specific to the APSA
-The degree of acquisition of the cross-curricular behavioural skills expected in each of the sports,
-Individual and team performance
-Progress made or objectives achieved over the cycle.
-Theoretical knowledge of the sport

For SEMESTER 1:
Two assessments in the first sporting activity, giving a mark /20

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr
Mme CASANOVA Sophie :
sophie.casanova@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: HUM (HUMANITES)

Cross-curricular competences targeted by this EC:
1-Knowing oneself, managing oneself physically and mentally
-Develop motor skills
-Maintain and improve physical condition

2-Work and learn independently:
-Construct solutions through action in sporting situations

3-Interact with others, work as part of a team:
-Integrate and find one's place in a group
-Communicate appropriately

4-Demonstrate creativity:
-Develop a creative approach
- Developing the dynamics of the imagination

5-Act responsibly in a complex world:
-Integrate a responsible dimension into your actions

6- Working in an international and intercultural context:
-Integrating cultural diversity into group work

Skills and knowledge worked on and assessed in this EC:
Know how to warm up and lead a warm-up session
-Be able to make the necessary efforts to adapt and progress
-Acquire movement patterns specific to each of the sports
-Be able to convey information clearly and comprehensibly
-Explore a sensitive and communicative body
-Experience the poetic dimension of the body
-Show an interest in others and the group project
-Know the data relating to VMA and the different types of training
-Know your strengths and weaknesses
-Be familiar with the principles of action related to sports activities
-Know the rules of the game
-Know the safety rules

CONTENT

4 Different methods depending on the course:
1 Physical Education lessons: Menu of 3 APSAs (Sports and Artistic Physical Activities) over the year.
*High Intensity activities: Long run, Orienteering, Body-building (circuit-training), Run and bike, etc.
*Collective activities: Basketball, Dance, Football, Handball, Rugby, Ultimate, Volleyball, etc.
*Individual activities: Badminton, French boxing, Canne d'arme, Dance, Body-building, Tennis, Table tennis, Archery, etc.

2 Appropriate Physical Education : For all students who are totally or partially physically unfit for more than 2 months.
Swimming, Body-building, Sophrology, Somatic practices, Wheelchair basketball, Wheelchair basketball, Table tennis...

3 Advanced courses :
Specialisation in a sporting activity: training and participation in university competitions

4 High-level sports section:
Training and university competitions

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -Level A2 to B1 - 4 hours/ week

IDENTIFICATION

CODE :HU-1-S1-EC-L-FLE-A2B1-4

ECTS : undefined

HOURS

Cours :	0h
TD :	52h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	52h
Travail personnel :	0h
Total :	52h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various authentic documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr

Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The courses aims at improving your French in order to feel at ease in your daily life.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.
L'apprentissage de la langue s'organise autour de l'observation du fonctionnement de la langue, de la pratique en classe d'activités varies et de la réalisation de projets dans des contextes de vie réelle ou simulée pour favoriser l'autonomie de l'étudiant et faciliter son intégration dans ses études, sa vie étudiante et sa vie sociale.

CONTENT

At the end of the course, you will be able to:
.talk about yourself, your surroundings, your hobbies and your daily life.
.interact in a daily conversation, ask and give explanations , talk about the past and the future, describe a person and objects
.find your way
.get goods and services
.use the most common structures of the scientific language
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices
.talk about the future
.make assumptions
.convince

BIBLIOGRAPHY

A2 and B1 : You will find a selection of resources available online at the following address https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

level A1 to A2

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -Level A2 to B1 - 2 hours/ week

IDENTIFICATION

CODE :HU-1-S1-EC-L-FLE-A2B1-2

ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various authentic documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr

Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The courses aims at improving your French in order to feel at ease in your daily life.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.
L'apprentissage de la langue s'organise autour de l'observation du fonctionnement de la langue, de la pratique en classe d'activités varies et de la réalisation de projets dans des contextes de vie réelle ou simulée pour favoriser l'autonomie de l'étudiant et faciliter son intégration dans ses études, sa vie étudiante et sa vie sociale.

CONTENT

CULTURAL KNOWLEDGE - At the end of the course, you will be able to :
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

A2 and B1 : You will find a selection of resources available online at the following address https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

level A1 to A2

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-2-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education relates to what has been taught in the APSA (Physical, Sports and Artistic Activities), in the form of an in-service assessment in the activity, with final marking every six months.

The mark takes into account :
-The degree of acquisition and mastery of the motor skills specific to the APSA
-The degree of acquisition of the cross-curricular behavioural skills expected in each of the sports,
-Individual and team performance
-Progress made or objectives achieved over the cycle.
-Theoretical knowledge of the sport

For SEMESTER 1:
Two assessments in the first sporting activity, giving a mark /20

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr
Mme CASANOVA Sophie :
sophie.casanova@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: HUM (HUMANITES)

Cross-curricular competences targeted by this EC:
1-Knowing oneself, managing oneself physically and mentally
-Develop motor skills
-Maintain and improve physical condition

2-Work and learn independently:
-Construct solutions through action in sporting situations

3-Interact with others, work as part of a team:
-Integrate and find one's place in a group
-Communicate appropriately

4-Demonstrate creativity:
-Develop a creative approach
- Developing the dynamics of the imagination

5-Act responsibly in a complex world:
-Integrate a responsible dimension into your actions

6- Working in an international and intercultural context:
-Integrating cultural diversity into group work

Skills and knowledge worked on and assessed in this EC:
Know how to warm up and lead a warm-up session
-Be able to make the necessary efforts to adapt and progress
-Acquire movement patterns specific to each of the sports
-Be able to convey information clearly and comprehensibly
-Explore a sensitive and communicative body
-Experience the poetic dimension of the body
-Show an interest in others and the group project
-Know the data relating to VMA and the different types of training
-Know your strengths and weaknesses
-Be familiar with the principles of action related to sports activities
-Know the rules of the game
-Know the safety rules

CONTENT

4 Different methods depending on the course:
1 Physical Education lessons: Menu of 3 APSAs (Sports and Artistic Physical Activities) over the year.
*High Intensity activities: Long run, Orienteering, Body-building (circuit-training), Run and bike, etc.
*Collective activities: Basketball, Dance, Football, Handball, Rugby, Ultimate, Volleyball, etc.
*Individual activities: Badminton, French boxing, Canne d'arme, Dance, Body-building, Tennis, Table tennis, Archery, etc.

2 Appropriate Physical Education : For all students who are totally or partially physically unfit for more than 2 months.
Swimming, Body-building, Sophrology, Somatic practices, Wheelchair basketball, Wheelchair basketball, Table tennis...

3 Advanced courses :
Specialisation in a sporting activity: training and participation in university competitions

4 High-level sports section:
Training and university competitions

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students 1st year-Level B2 - 2 hours week

IDENTIFICATION

CODE : HU-1-S1-EC-L-FLE-B2C1
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-reading Comprehension, listening Comprehension, writing, oral production/interaction
OR
-Project

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enablling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.understand and write long and complex documents of all kinds such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
.use more or less complex structures of the scientific language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

-L'écrit, stratégies et pratiques(CLE Collection Savoir-Faire)
-Le résumé (CLE Collection Savoir-Faire)
-Vocabulaire (CLE Collection: Entraînez-vous niveau Avancé)
-Quotidiens et magazines d'information disponibles à la bibliothèque Marie Curie
-Francoscopie
-Resources available online at: https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B2 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ALL
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mader Berthold :
berthold.mader@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language
by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class
The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks
that require the students to engage in the 5 linguistic activities, at a level and with linguistic
input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.
In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-JAP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mihara Norio :
norio.mihara@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ITA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Strelow Antunes Isabel : isabel.strelow-antunes@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-CHI
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme JIANG Chunyan :
chunyan.jiang-huang@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

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PRE-REQUISITES

None

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Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ESP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

The average is made up of half (50%) continuous assessment (assessments of the 5 skills carried out in class) and a common exam (50% of the average) which assesses Written Comprehension, Oral Comprehension, Grammatical and Lexical Skills and Written Expression. This common exam does not have the value of level validation.

TEACHING AIDS

Authentic and/or didactic documents related to the selected topics.
- "Pink" grammar and exercise booklets
- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. SUAREZ LOPEZ Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

AIMS

The targeted and mobilized skills are those of both the INSA Humanities Skills Framework (specifically skills 3 and 7) and the CEFR.
Consistent description of the CEFR skills.
http://www.sciencespo-lille.eu/sites/default/files/cecrl.pdf

CONTENT

The five skills recognized by the Common European Framework of Reference for Languages (CEFR) are practiced and assessed several times throughout the semester/year, ensuring regular practice of the various skills and knowledge acquired.

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- for listening comprehension, grammar, and vocabulary training (all levels): http://www.ver-taal.com/index.htm
- grammar and vocabulary exercises (all levels): https://www.espagnolfacile.com/
- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

None. Courses range from beginner to advanced level. Each student will be placed in a group corresponding to their level, either through a test at the beginning of the year (for new students) or based on their level from the previous year for students already attending INSA.

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-2-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education relates to what has been taught in the APSA (Physical, Sports and Artistic Activities), in the form of an in-service assessment in the activity, with final marking every six months.

The mark takes into account :
-The degree of acquisition and mastery of the motor skills specific to the APSA
-The degree of acquisition of the cross-curricular behavioural skills expected in each of the sports,
-Individual and team performance
-Progress made or objectives achieved over the cycle.
-Theoretical knowledge of the sport

For SEMESTER 1:
Two assessments in the first sporting activity, giving a mark /20

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr
Mme CASANOVA Sophie :
sophie.casanova@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: HUM (HUMANITES)

Cross-curricular competences targeted by this EC:
1-Knowing oneself, managing oneself physically and mentally
-Develop motor skills
-Maintain and improve physical condition

2-Work and learn independently:
-Construct solutions through action in sporting situations

3-Interact with others, work as part of a team:
-Integrate and find one's place in a group
-Communicate appropriately

4-Demonstrate creativity:
-Develop a creative approach
- Developing the dynamics of the imagination

5-Act responsibly in a complex world:
-Integrate a responsible dimension into your actions

6- Working in an international and intercultural context:
-Integrating cultural diversity into group work

Skills and knowledge worked on and assessed in this EC:
Know how to warm up and lead a warm-up session
-Be able to make the necessary efforts to adapt and progress
-Acquire movement patterns specific to each of the sports
-Be able to convey information clearly and comprehensibly
-Explore a sensitive and communicative body
-Experience the poetic dimension of the body
-Show an interest in others and the group project
-Know the data relating to VMA and the different types of training
-Know your strengths and weaknesses
-Be familiar with the principles of action related to sports activities
-Know the rules of the game
-Know the safety rules

CONTENT

4 Different methods depending on the course:
1 Physical Education lessons: Menu of 3 APSAs (Sports and Artistic Physical Activities) over the year.
*High Intensity activities: Long run, Orienteering, Body-building (circuit-training), Run and bike, etc.
*Collective activities: Basketball, Dance, Football, Handball, Rugby, Ultimate, Volleyball, etc.
*Individual activities: Badminton, French boxing, Canne d'arme, Dance, Body-building, Tennis, Table tennis, Archery, etc.

2 Appropriate Physical Education : For all students who are totally or partially physically unfit for more than 2 months.
Swimming, Body-building, Sophrology, Somatic practices, Wheelchair basketball, Wheelchair basketball, Table tennis...

3 Advanced courses :
Specialisation in a sporting activity: training and participation in university competitions

4 High-level sports section:
Training and university competitions

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

SCAN Options

IDENTIFICATION

CODE : HU-1-S1-EC-L-SC-O
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

Continuous assessment

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

Mme Fitzpatrick Lorna :
lorna.fitzpatrick@insa-lyon.fr

AIMS

To provide SCAN students with a choice of content-based non-scientific modules taught in English.

To enhance students' communication skills and creativity (CT3.1, CT3.6, CT4.1).

To enable students to work with several teachers throughout the year.

To bring together students from both years of the SCAN section so as to foster a group identity and team spirit.

CONTENT

Students are required to choose 4 options per year from a total number of 12. Each option lasts for a period of 6 weeks (2 options/semester - 2 hours/week).

Each option forms a self-contained module.

For 2013-14 the following options are available:

SCAN on radio (Gatsun) by Berthold Mader (semester 1),

SCAN the web by Berthold Mader (semester 2),

Public Speaking by Erin Tremouilhac/Krystyna Irvine (semester 1)

SCAN Yearbook by Erin Tremouilhac/Krystyna Irvine (semester 2),

Face to Face by Cindy Garçon (semester 1),

Close Encounters by Cindy Garçon (semester 2),

Negotiating by Siobhan Wegeler (semester 1),

Profiling Scan by Siobhan Wegeler (semester 2),

Futurism by Krystyna Eliard (semester 1)

An insight into South African Culture by Krystyna Eliard (semester 2)

Engineering and Activism by Jeannie Jouffroy (semester 1),

The New Golden Age of Television by Jeannie Jouffroy (semester 2).

A detailed description of each module may be obtained by e-mailing scan@insa-lyon.fr

BIBLIOGRAPHY

PRE-REQUISITES

The options are open to all SCAN students who are exempt from studying French as a foreign language.

Minimum language level required: B2

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ALL
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mader Berthold :
berthold.mader@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language
by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
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--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class
The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks
that require the students to engage in the 5 linguistic activities, at a level and with linguistic
input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.
In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-JAP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mihara Norio :
norio.mihara@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

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--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

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BIBLIOGRAPHY

PRE-REQUISITES

None

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Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ITA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

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Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Strelow Antunes Isabel : isabel.strelow-antunes@insa-lyon.fr

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PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-CHI
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme JIANG Chunyan :
chunyan.jiang-huang@insa-lyon.fr

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CT7: Work in an international, intercultural context
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None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Foreign Languages

IDENTIFICATION

CODE : HU-1-S1-EC-L-ESP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
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TEACHING AIDS

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- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. SUAREZ LOPEZ Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

AIMS

The targeted and mobilized skills are those of both the INSA Humanities Skills Framework (specifically skills 3 and 7) and the CEFR.
Consistent description of the CEFR skills.
http://www.sciencespo-lille.eu/sites/default/files/cecrl.pdf

CONTENT

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- for listening comprehension, grammar, and vocabulary training (all levels): http://www.ver-taal.com/index.htm
- grammar and vocabulary exercises (all levels): https://www.espagnolfacile.com/
- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

None. Courses range from beginner to advanced level. Each student will be placed in a group corresponding to their level, either through a test at the beginning of the year (for new students) or based on their level from the previous year for students already attending INSA.

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S2-EC-DES
ECTS : 2

HOURS

Cours :	0h
TD :	58h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	58h
Travail personnel :	0h
Total :	58h

ASSESMENT METHOD

Assessment:
Projects: 66%
Final exam: 33%

TEACHING AIDS

Lecture notes

TEACHING LANGUAGE

English

CONTACT

M. Ruzek Michal :
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AIMS

The focus of the Mechanical Design 2 is on:
a) the technology of simple embedding assemblies
b) the technology of revolute joints
c) mitigating options for the end-of-life impact of products
Mechanical Design 2 is divided into three parts comprising lectures, tutorials and student projects:
a) In the continuation of Mechanical Design 1, Part 1 is focused on system kinematics and more specifically on the technical solutions to create complete and revolute joints. Students will be encouraged to study the literature to learn about appropriate/optimal solutions. A particular focus is given to correct use of vocabulary related to assemblies and mechanical transmissions. A shaft-hub connection is studied in detail.
b) The mechanical assemblies are studied in more detail with focus on a revolute joint. Heuristic approach is used in some tutorials. Namely, several physical models are disassembled, analyzed, sketched and their twin CAD models created. The purpose of this part is to create a link between physical system and its representation on a draft. Students are encouraged to use coloring and other means to strengthen their understanding of drawings.
c) The sustainable aspect of mechanical design is considered further following the introduction in S1. The product is analyzed in terms of its end-of-life options. Students are encouraged to investigate some mitigating options for given systems: design for disassembly to enable repair, design for a long life to limit a throw-away behaviour, design for recycling to mitigate financial and environmental cost of the recycling process.

CONTENT

Syllabus:
1 – Technical analysis of Mechanical Systems 1: (16 hours)
• Complete joints
• Revolute joints
• Elements of gears, chain and belt transmissions
• Assembly fits
• Disassembly of models, their analysis, and drawings

BIBLIOGRAPHY

Bibliography:
C. Simmons, D. Maguire, Manual of Engineering Drawing, 4th Edition, 2012

PRE-REQUISITES

Pre-requisite:
Mechanical Design 1 : IBENG-1-DES-S1

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S2-EC-MATER
ECTS : 4

HOURS

Cours :	20h
TD :	39h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	59h
Travail personnel :	0h
Total :	59h

ASSESMENT METHOD

Mid-term exam: 30%
Oral session: 20%
Final exam: 50%

TEACHING AIDS

Lecture notes

TEACHING LANGUAGE

English

CONTACT

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AIMS

This course is dedicated to
• the analysis of phase diagrams describing the state of a material according to the temperature and composition,
• the description of the usual microstructures and the link with the mechanical properties of materials.

On successful completion of this module, students will be able to:
link phase diagrams to real microstructures
link microstructures to mechanical properties
carry out usual heat treatments on materials and measure their mechanical properties

CONTENT

1. Phase diagrams
1.1. What is the use of phase diagrams? What are the underlying theories?
1.2. Phase diagrams for pure metals
1.3. What information can be obtained from a phase diagram: an example with the Ag-Au diagram
1.3.1. The phases
1.3.2. The horizontal rules
1.3.3. The lever rule
1.4. The different phase diagram and the microstructure associated
1.4.1. Eutectic
1.4.2. Eutectoid
1.4.3. Peritectic
1.4.4. More complex ones
1.5. The most widely used one: Fe-C diagram
1.6. Did you say “non-equilibrium” phases?
1.6.1. The Martensite
1.6.2. Precipitation
2. How can we control the mechanical properties of a material?
2.1. The defects in metals
2.1.1. Points defects
a. Description
b. Origins
c. Density
d. Influence on diffusion, on segregation and volume of the materials
2.1.2. Surface defects
a. Description
b. Origins
c. Influence on mechanical properties and corrosion resistance
2.1.3. Volume defects
a. Description
b. Origins
c. Influence on the mechanical properties
2.1.4. Linear defects
a. Description
b. Origins
c. Density
2.2. Movements of dislocations and how to impede it
2.3. Hardening mechanisms and practical applications
2.3.1. General concepts
2.3.2. Influence of grain size
2.3.3. Influence of alloying elements
2.3.4. Influence of dislocations density
2.3.5. Practical point of view

BIBLIOGRAPHY

Introduction to Materials Science for engineers, James F. Shackelford, Ed. Pearson

PRE-REQUISITES

High school chemistry and physics, IBENG-1-S1-EC-MATER

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S2-EC-MECH
ECTS : 6

HOURS

Cours :	20h
TD :	40h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	60h
Travail personnel :	0h
Total :	60h

ASSESMENT METHOD

Mini-tests: 25%
Project: 25%
Intermediate exam: 25%
Final exam: 25%

TEACHING AIDS

Lecture notes

TEACHING LANGUAGE

English

CONTACT

M. Velex Philippe :
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AIMS

Engineering Mechanics mostly deals with the behaviour of bodies under the action of forces and moments. Dynamics is the branch of Mechanics which relates mechanical actions to motions and plays fundamental roles in Mechanical Engineering but also Bio-Mechanics and biology.
The general objectives of this course are: a) help students visualise and understand actual mechanical configurations with their constraints and practical limitations and, b) provide guidelines to formulate problems and relate theory and practice.
The specific objectives are: a) the ability to analyse the dynamics of solids which can be assimilated to particles representative of actual situations and problems; b) the understanding of some energy-based and conservation concepts and c), the ability to predict and control vibrations in mechanical systems.
Students have to undergo a group project related to vibration analysis, ideally combining analysis, design, manufacturing, testing and comparisons between numerical and experimental measurements. Assessment is based on oral presentations, demos and a written report.

CONTENT

1 – Kinematics of particles:
• Velocity and acceleration,
• Plane motion
• Coordinate systems: normal-tangential, Cartesian, Polar
• Space curvilinear motion
• Constrained motions of particles
2 – Kinetics of particles:
• Force, mass and acceleration
• Work and energy
• Impulse and momentum
3 – Plane kinetics of rigid bodies:
• Translation
• Fixed-axis rotation
4 – Vibration and time-response:
• Free vibration of particles
• Forced vibration of particles
• Introduction to rigid-body vibration

BIBLIOGRAPHY

J.L. MERIAM and L.G. KRAIGE, 'Engineering Mechanics- Dynamics', 6th edition, Wiley, 2008, 720 pages
A. PYTEL and J. KIUSALAAS, 'Engineering Mechanics – Dynamics', 3rd edition, Cengage Learning, 2010, 654 pages.

PRE-REQUISITES

High school Algebra and Geometry. Mechanics 1 : IBENG-1-S1-EC-MECH, IBENG-1-S1-EC-DES,

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S2-EC-PROJ
ECTS : 2

HOURS

Cours :	0h
TD :	43h
TP :	12h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	55h
Travail personnel :	0h
Total :	55h

ASSESMENT METHOD

The overall mark is broken down as follows:
a) 1/3 to be given by the tutor on an individual basis for commitment and team work.
b) 1/3 to be given by the jury for the oral presentation, based on presentation techniques, scientific/ technical production and linguistic fluency,
c) 1/3 to be awarded for the written report; based on linguistic accuracy, bibliographical research and scientific clarity.

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

M. Velex Philippe :
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AIMS

For two weeks (full-time), students are given the opportunity to undertake a transversal team project in groups of 4 on subjects related to mechanical engineering and its applications. One of the key objectives is to confront students with real-life situations requiring more than a direct application of academic knowledge and train them to obtain relevant information in an autonomous way. The transversal projects are aimed at producing tangible results to be given in the form of:
• a 20 minute oral presentation followed by 10 minutes of questions in front of a jury composed of the tutors and other teachers
• a written report detailing the methodology and outlining the findings

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

First semester modules: IBENG-1-S1-EC-DES, IBENG-1-S1-EC-ELEC, IBENG-1-S1-EC-ENGCOM, IBENG-1-S1-EC-MATER, IBENG-1-S1-EC-MATHS, IBENG-1-S1-EC-MECH

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-1-S2-EC-MATHS
ECTS : 5

HOURS

Cours :	20h
TD :	40h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	60h
Travail personnel :	0h
Total :	60h

ASSESMENT METHOD

Assignments : 20%
Midterm exam : 20%
Mini-tests : 20%
Final exam : 40%

TEACHING AIDS

Lecture notes

TEACHING LANGUAGE

English

CONTACT

AIMS

Mathematics in Engineering requires an understanding of the mathematical language, principles and techniques that are essential to the study of engineering.
This module helps students gain the mathematical knowledge required to understand and solve engineering problems.

CONTENT

- Riemann integrals
- Integral calculus (integration by parts, integration by substitution)
- Multiple integrals
- Applications of integration
- Vector spaces, vector subspaces, dimension and basis.
- Linear transformations
- Matrices
- Determinants
- Systems of equations
- Diagonalisation

BIBLIOGRAPHY

Boas : Mathematical Methods in the Physical Sciences, Third Edition (Wiley)
Jordan and Smith : Mathematical Techniques (Oxford)
Lipschutz : Linear Algebra (Schaum's Outline Series)

PRE-REQUISITES

High school mathematics and Bachelors S1 module IBENG-1-S1-EC-MATHS

IDENTIFICATION

CODE : IBENG-1-S2-EC-THERM
ECTS : 4

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Assignments: 20%
Micro-project: 20%
Intermediate exam: 30%
Final exam: 30%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

The control of energy consumption as well as the development of renewable and clean energy sources is a major engineering challenge for the coming years. A general knowledge in Thermodynamics is therefore necessary to understand this kind of problems.
The general objectives of this course are: a) help students understand the basic concepts of thermodynamics and, b) provide guidelines to apply the basic concepts of thermodynamics to practical applications.
The specific objectives are: a) the ability to analyse the operating principles of heat engines and b), determine the various forms of energy, establish an energy balance and calculate the efficiencies associated with gas power cycles.

CONTENT

1. Fundamentals of thermodynamics
a. From the first law of thermodynamics to the definition of energy.
b. From the second law of thermodynamics to the definition of entropy.
c. Energy, Entropy, Heat and Temperature.
d. Transformations and cycles.
e. Energy balances applied to closed systems.
2. Equations of state for gases
a. The ideal gas and its limitations.
b. Beyond the ideal gas.
3. Open systems
a. Enthalpy and energy balances of open systems.
b. Application to compressions and expansions of gases.
4. Thermochemistry of open and closed systems
a. Elementary stoichiometric balances of combustion processes
b. From heat of reaction to heating values of fuels
c. Air/Fuel ratios and real combustion reactions
5. Application to internal combustion engines
a. Consequences of the 2nd law on heat engines: the Carnot cycle.
b. Reciprocating engines: the Otto and Diesel cycles.
c. Rotating and jet engines: the Brayton cycle.

BIBLIOGRAPHY

Y. CENGEL and M. BOLES, 'Thermodynamics: An Engineering Approach', 8th edition, McGraw-Hill Education, 2014, 1024 pages.
M. J. MORAN, H. N. SHAPIRO, D. D. BOETTNER and M.B. BAILEY, 'Fundamentals of Engineering Thermodynamics', 8th edition, Wiley, 2014, 1056 pages.

PRE-REQUISITES

High school Algebra, Mathematics for Engineering 1: IBENG-1-S1-ECMATHS

IDENTIFICATION

CODE : IBENG-1-S2-EC-PROGRAM
ECTS : 1

HOURS

Cours :	0h
TD :	10h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	10h
Travail personnel :	0h
Total :	10h

ASSESMENT METHOD

Mid-term exam (on computer): 50%
Final exam (on computer): 50%

TEACHING AIDS

Lecture notes

TEACHING LANGUAGE

English

CONTACT

M. Guilbert Bérengère :
berengere.guilbert@insa-lyon.fr

AIMS

The primary purpose of this course is to teach computer programming at a beginner's level based on the programming language Matlab, which is widely used in engineering worldwide. This versatile language has easy bases and requires following rigorous programming rules to be able to create elaborated codes.

CONTENT

Students will have to sign up for the free on-line MOOC ' Computer Programming with MATLAB' by Fitzpatrick and Ledeczi. (http://cs103.net/video-lectures/)

1 - Introduction
1.1 Introduction
1.2 Running MATLAB
1.3 The MATLAB Desktop
1.4 MATLAB as a Calculator
1.5 Syntax and Semantics
1.6 Help
1.7 Plotting
2 - Matrices and Operators
2.1 Introduction to Matrices and Operators
2.2 The Colon Operator
2.3 Accessing Parts of a Matrix
2.4 Combining and Transforming Matrices
2.5 Arithmetic Part 1
2.6 Arithmetic Part 2
2.7 Operator Precedence
3 - Functions
3.1 Introductions to Functions
3.2 Function I/O
3.3 Formal Definition of Functions
3.4 Subfunctions
3.5 Scope
3.6 Advantages of Functions
3.7 Scripts
4 - Programmer's Toolbox
4.1 Introduction to programmer's Toolbox
4.2 Matrix Building
4.3 Input / Output
4.4 Plotting
4.5 Debugging
5 - Selection
5.1 Selection
5.2 If-Statements, continued
5.3 Relational and Logical Operators
5.4 Nested If-Statements
5.5 Variable Number of Function Arguments
5.6 Robustness
5.7 Persistent Variables
6 - Loops
6.1 For-Loops
6.2 While-Loops
6.3 Break Statement
6.4 Logical Indexing
6.5 Preallocation
7 - Data Types
7.1 Introduction to Data Types
7.2 Strings
7.3. Structs
7.4 Cells
7.5 The String type
7.6 Datettime and duration
8 - File Input/Output
8.1 Introduction to File Input/Output
8.2 Excel Files
8.3 Text Files

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -Level A2 to B1 - 4 hours/ week

IDENTIFICATION

CODE :HU-1-S2-EC-L-FLE-A2B1-4

ECTS : undefined

HOURS

Cours :	0h
TD :	52h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	52h
Travail personnel :	0h
Total :	52h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various authentic documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
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Mme Fradois Delphine :
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AIMS

Language skills: writing, written and oral comprehension, speaking
The courses aims at improving your French in order to feel at ease in your daily life.
You will observe how the language works, you will practice a wide range of various activities,
you will actively take part in projects that will lead you to be more autonomous and that will
greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.talk about yourself, your surroundings, your hobbies and your daily life.
.interact in a daily conversation, ask and give explanations , talk about the past and the future, describe a person and objects
.find your way
.get goods and services
.use the most common structures of the scientific language
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices
.talk about the future
.make assumptions
.convince

BIBLIOGRAPHY

A2 and B1 : You will find a selection of resources available online at the following address https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

level A1 to A2

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -Level A2 to B1 - 2 hours/ week

IDENTIFICATION

CODE :HU-1-S2-EC-L-FLE-A2B1-2

ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various authentic documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr

Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The courses aims at improving your French in order to feel at ease in your daily life.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.
L'apprentissage de la langue s'organise autour de l'observation du fonctionnement de la langue, de la pratique en classe d'activités varies et de la réalisation de projets dans des contextes de vie réelle ou simulée pour favoriser l'autonomie de l'étudiant et faciliter son intégration dans ses études, sa vie étudiante et sa vie sociale.

CONTENT

CULTURAL KNOWLEDGE - At the end of the course, you will be able to :
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

A2 and B1 : You will find a selection of resources available online at the following address https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

level A1 to A2

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-2-S2-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Assessment in Physical Education relates to what has been taught in the APSA (Physical, Sports and Artistic Activities), in the form of an in-service assessment in the activity, with final marking every six months.

The mark takes into account :
-The degree of acquisition and mastery of the motor skills specific to the APSA
-The degree of acquisition of the cross-curricular behavioural skills expected in each of the sports,
-Individual and team performance
-Progress made or objectives achieved over the cycle.
-Theoretical knowledge of the sport

For SEMESTER 2:
Two assessments in the first sporting activity, giving a mark /20

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

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Mme CASANOVA Sophie :
sophie.casanova@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: HUM (HUMANITES)

Cross-curricular competences targeted by this EC:
1-Knowing oneself, managing oneself physically and mentally
-Develop motor skills
-Maintain and improve physical condition

2-Work and learn independently:
-Construct solutions through action in sporting situations

3-Interact with others, work as part of a team:
-Integrate and find one's place in a group
-Communicate appropriately

4-Demonstrate creativity:
-Develop a creative approach
- Developing the dynamics of the imagination

5-Act responsibly in a complex world:
-Integrate a responsible dimension into your actions

6- Working in an international and intercultural context:
-Integrating cultural diversity into group work

Skills and knowledge worked on and assessed in this EC:
Know how to warm up and lead a warm-up session
-Be able to make the necessary efforts to adapt and progress
-Acquire movement patterns specific to each of the sports
-Be able to convey information clearly and comprehensibly
-Explore a sensitive and communicative body
-Experience the poetic dimension of the body
-Show an interest in others and the group project
-Know the data relating to VMA and the different types of training
-Know your strengths and weaknesses
-Be familiar with the principles of action related to sports activities
-Know the rules of the game
-Know the safety rules

CONTENT

4 Different methods depending on the course:
1 Physical Education lessons: Menu of 3 APSAs (Sports and Artistic Physical Activities) over the year.
*High Intensity activities: Long run, Orienteering, Body-building (circuit-training), Run and bike, etc.
*Collective activities: Basketball, Dance, Football, Handball, Rugby, Ultimate, Volleyball, etc.
*Individual activities: Badminton, French boxing, Canne d'arme, Dance, Body-building, Tennis, Table tennis, Archery, etc.

2 Appropriate Physical Education : For all students who are totally or partially physically unfit for more than 2 months.
Swimming, Body-building, Sophrology, Somatic practices, Wheelchair basketball, Wheelchair basketball, Table tennis...

3 Advanced courses :
Specialisation in a sporting activity: training and participation in university competitions

4 High-level sports section:
Training and university competitions

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students 1st year-Level B2 - 2 hours week

IDENTIFICATION

CODE : HU-1-S2-EC-L-FLE-B2C1
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-reading Comprehension, listening Comprehension, writing, oral production/interaction
OR
-Project

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enablling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.understand and write long and complex documents of all kinds such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
.use more or less complex structures of the scientific language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

-Resources available online at: https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B2 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ALL
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mader Berthold :
berthold.mader@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ESP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

The average is made up of half (50%) continuous assessment (assessments of the 5 skills carried out in class) and a common exam (50% of the average) which assesses Written Comprehension, Oral Comprehension, Grammatical and Lexical Skills and Written Expression. This common exam does not have the value of level validation.

TEACHING AIDS

Authentic and/or didactic documents related to the selected topics.
- "Pink" grammar and exercise booklets
- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. Suarez Lopez Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

AIMS

Les compétences ciblées et mobilisées sont à la fois celles du Référentiel de Compétences en Humanités de l'INSA (plus particulièrement les compétences 3 et 7) et du CECRL.

Descriptif synthétique des compétences du CECRL : http://www.sciencespo-lille.eu/sites/default/files/cecrl.pdf

CONTENT

The five skills recognized by the Common European Framework of Reference for Languages (CEFR) are practiced and assessed several times throughout the semester/year, ensuring regular practice of the various skills and knowledge acquired.

The themes, grammar, and vocabulary covered in class are adapted to the target level (indicated in the group code) and are at the discretion of the teacher.

BIBLIOGRAPHY

Web resources:
- for listening comprehension, grammar, and vocabulary training (all levels): http://www.ver-taal.com/index.htm
- grammar and vocabulary exercises (all levels): https://www.espagnolfacile.com/
- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

None. Courses range from beginner to advanced level. Each student will be placed in a group corresponding to their level, either through a test at the beginning of the year (for new students) or based on their level from the previous year for students already attending INSA.

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Oyarzo Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (B1-B2+) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-CHI
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme JIANG Chunyan :
chunyan.jiang-huang@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

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--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group."

CONTENT

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In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ITA
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--produce diverse types of written expression

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--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-JAP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mihara Norio :
norio.mihara@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

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--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Strelow Antunes Isabel : isabel.strelow-antunes@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

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--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

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CONTENT

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In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

SCAN Options

IDENTIFICATION

CODE : HU-1-S2-EC-L-SC-O
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

Continuous assessment

TEACHING AIDS

Varied

TEACHING LANGUAGE

English

CONTACT

Mme Fitzpatrick Lorna :
lorna.fitzpatrick@insa-lyon.fr

AIMS

To provide SCAN students with a choice of content-based non-scientific modules taught in English.

To enhance students' communication skills and creativity (CT3.1, CT3.6, CT4.1).

To enable students to work with several teachers throughout the year.

To bring together students from both years of the SCAN section so as to foster a group identity and team spirit.

CONTENT

Students are required to choose 4 options per year from a total number of 12. Each option lasts for a period of 6 weeks (2 options/semester - 2 hours/week).

Each option forms a self-contained module.

For 2013-14 the following options are available:

SCAN on radio (Gatsun) by Berthold Mader (semester 1),

SCAN the web by Berthold Mader (semester 2),

Public Speaking by Erin Tremouilhac/Krystyna Irvine (semester 1)

SCAN Yearbook by Erin Tremouilhac/Krystyna Irvine (semester 2),

Face to Face by Cindy Garçon (semester 1),

Close Encounters by Cindy Garçon (semester 2),

Negotiating by Siobhan Wegeler (semester 1),

Profiling Scan by Siobhan Wegeler (semester 2),

Futurism by Krystyna Eliard (semester 1)

An insight into South African Culture by Krystyna Eliard (semester 2)

Engineering and Activism by Jeannie Jouffroy (semester 1),

The New Golden Age of Television by Jeannie Jouffroy (semester 2).

A detailed description of each module may be obtained by e-mailing scan@insa-lyon.fr

BIBLIOGRAPHY

As defined by the teacher of each module

PRE-REQUISITES

The options are open to all SCAN students who are exempt from studying French as a foreign language.

Minimum language level required: B2

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-2-S2-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Assessment in Physical Education relates to what has been taught in the APSA (Physical, Sports and Artistic Activities), in the form of an in-service assessment in the activity, with final marking every six months.

The mark takes into account :
-The degree of acquisition and mastery of the motor skills specific to the APSA
-The degree of acquisition of the cross-curricular behavioural skills expected in each of the sports,
-Individual and team performance
-Progress made or objectives achieved over the cycle.
-Theoretical knowledge of the sport

For SEMESTER 2:
Two assessments in the first sporting activity, giving a mark /20

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr
Mme CASANOVA Sophie :
sophie.casanova@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: HUM (HUMANITES)

Cross-curricular competences targeted by this EC:
1-Knowing oneself, managing oneself physically and mentally
-Develop motor skills
-Maintain and improve physical condition

2-Work and learn independently:
-Construct solutions through action in sporting situations

3-Interact with others, work as part of a team:
-Integrate and find one's place in a group
-Communicate appropriately

4-Demonstrate creativity:
-Develop a creative approach
- Developing the dynamics of the imagination

5-Act responsibly in a complex world:
-Integrate a responsible dimension into your actions

6- Working in an international and intercultural context:
-Integrating cultural diversity into group work

Skills and knowledge worked on and assessed in this EC:
Know how to warm up and lead a warm-up session
-Be able to make the necessary efforts to adapt and progress
-Acquire movement patterns specific to each of the sports
-Be able to convey information clearly and comprehensibly
-Explore a sensitive and communicative body
-Experience the poetic dimension of the body
-Show an interest in others and the group project
-Know the data relating to VMA and the different types of training
-Know your strengths and weaknesses
-Be familiar with the principles of action related to sports activities
-Know the rules of the game
-Know the safety rules

CONTENT

4 Different methods depending on the course:
1 Physical Education lessons: Menu of 3 APSAs (Sports and Artistic Physical Activities) over the year.
*High Intensity activities: Long run, Orienteering, Body-building (circuit-training), Run and bike, etc.
*Collective activities: Basketball, Dance, Football, Handball, Rugby, Ultimate, Volleyball, etc.
*Individual activities: Badminton, French boxing, Canne d'arme, Dance, Body-building, Tennis, Table tennis, Archery, etc.

2 Appropriate Physical Education : For all students who are totally or partially physically unfit for more than 2 months.
Swimming, Body-building, Sophrology, Somatic practices, Wheelchair basketball, Wheelchair basketball, Table tennis...

3 Advanced courses :
Specialisation in a sporting activity: training and participation in university competitions

4 High-level sports section:
Training and university competitions

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ALL
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mader Berthold :
berthold.mader@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

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In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ESP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

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TEACHING AIDS

Authentic and/or didactic documents related to the selected topics.
- "Pink" grammar and exercise booklets
- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. Suarez Lopez Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

AIMS

Les compétences ciblées et mobilisées sont à la fois celles du Référentiel de Compétences en Humanités de l'INSA (plus particulièrement les compétences 3 et 7) et du CECRL.

Descriptif synthétique des compétences du CECRL : http://www.sciencespo-lille.eu/sites/default/files/cecrl.pdf

CONTENT

The five skills recognized by the Common European Framework of Reference for Languages (CEFR) are practiced and assessed several times throughout the semester/year, ensuring regular practice of the various skills and knowledge acquired.

The themes, grammar, and vocabulary covered in class are adapted to the target level (indicated in the group code) and are at the discretion of the teacher.

BIBLIOGRAPHY

Web resources:
- for listening comprehension, grammar, and vocabulary training (all levels): http://www.ver-taal.com/index.htm
- grammar and vocabulary exercises (all levels): https://www.espagnolfacile.com/
- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

None. Courses range from beginner to advanced level. Each student will be placed in a group corresponding to their level, either through a test at the beginning of the year (for new students) or based on their level from the previous year for students already attending INSA.

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Oyarzo Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--have a conversation appropriate de the context
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--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (B1-B2+) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-CHI
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme JIANG Chunyan :
chunyan.jiang-huang@insa-lyon.fr

AIMS

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CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

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CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-ITA
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

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--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

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Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-JAP
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mihara Norio :
norio.mihara@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

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--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-1-S2-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Strelow Antunes Isabel : isabel.strelow-antunes@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-2-S2-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Assessment in Physical Education relates to what has been taught in the APSA (Physical, Sports and Artistic Activities), in the form of an in-service assessment in the activity, with final marking every six months.

The mark takes into account :
-The degree of acquisition and mastery of the motor skills specific to the APSA
-The degree of acquisition of the cross-curricular behavioural skills expected in each of the sports,
-Individual and team performance
-Progress made or objectives achieved over the cycle.
-Theoretical knowledge of the sport

For SEMESTER 2:
Two assessments in the first sporting activity, giving a mark /20

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

Mme JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr
Mme CASANOVA Sophie :
sophie.casanova@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: HUM (HUMANITES)

Cross-curricular competences targeted by this EC:
1-Knowing oneself, managing oneself physically and mentally
-Develop motor skills
-Maintain and improve physical condition

2-Work and learn independently:
-Construct solutions through action in sporting situations

3-Interact with others, work as part of a team:
-Integrate and find one's place in a group
-Communicate appropriately

4-Demonstrate creativity:
-Develop a creative approach
- Developing the dynamics of the imagination

5-Act responsibly in a complex world:
-Integrate a responsible dimension into your actions

6- Working in an international and intercultural context:
-Integrating cultural diversity into group work

Skills and knowledge worked on and assessed in this EC:
Know how to warm up and lead a warm-up session
-Be able to make the necessary efforts to adapt and progress
-Acquire movement patterns specific to each of the sports
-Be able to convey information clearly and comprehensibly
-Explore a sensitive and communicative body
-Experience the poetic dimension of the body
-Show an interest in others and the group project
-Know the data relating to VMA and the different types of training
-Know your strengths and weaknesses
-Be familiar with the principles of action related to sports activities
-Know the rules of the game
-Know the safety rules

CONTENT

4 Different methods depending on the course:
1 Physical Education lessons: Menu of 3 APSAs (Sports and Artistic Physical Activities) over the year.
*High Intensity activities: Long run, Orienteering, Body-building (circuit-training), Run and bike, etc.
*Collective activities: Basketball, Dance, Football, Handball, Rugby, Ultimate, Volleyball, etc.
*Individual activities: Badminton, French boxing, Canne d'arme, Dance, Body-building, Tennis, Table tennis, Archery, etc.

2 Appropriate Physical Education : For all students who are totally or partially physically unfit for more than 2 months.
Swimming, Body-building, Sophrology, Somatic practices, Wheelchair basketball, Wheelchair basketball, Table tennis...

3 Advanced courses :
Specialisation in a sporting activity: training and participation in university competitions

4 High-level sports section:
Training and university competitions

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -Level B1 to B2 - 4 hours week

IDENTIFICATION

CODE : HU-1-S2-EC-L-FLE-B2-2A
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enabling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds¿such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

B1 : La grammaire progressive du français -Grammaire: 450 nouveaux exercices Niveau intermçdiaire (CLE) -Vocabulaire niveau Intermédiaire (CLE) -Vocabulaire progressif du français (CLE)
B2 :
-L'écrit, stratégies et pratiques(CLE Collection Savoir-Faire)
-Le résumé (CLE Collection Savoir-Faire)
-Vocabulaire (CLE Collection: Entraînez-vous niveau Avancé)
-Quotidiens et magazines d'information disponibles à la bibliothèque Marie Curie
-Francoscopie

Activities to prepare for the TCF exam are available online and at the CRL.
You will find a selection of resources available online at the following address
https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international undergraduate students -1st year-B1/B2 - 4 hours week

IDENTIFICATION

CODE : HU-1-S2-EC-L-FLE-B2-2B
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking
The course aims at giving you all the language skills you need to feel at ease in your daily
life then at enabling you to express yourself in such a way that writing or talking to a native
speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.
You will observe how the language works, you will practice a wide range of various activities,
you will actively take part in projects that will lead you to be more autonomous and that will
greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds¿such as administrative or
professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours,
student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

A2 /B1 You will find a selection of resources available online at the following address https://
fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE IBENG-3-S2-EC-COMPOSITE

ECTS : undefined

HOURS

Cours :	8h
TD :	19h
TP :	8h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	35h
Travail personnel :	0h
Total :	35h

ASSESMENT METHOD

Assignments: 30%
Micro-project: 40%
Technical report: 30%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Nowadays, composite materials and composite technologies are common in the aeronautical sector and are getting more and more used in the automobile sector. However, the technology is not as advance and controlled as for metals, mainly because of the high level of interaction between materials, process and properties.
The general objectives of this course are: a) give students the general knowledges on the composites materials with polymeric matrices, with their constituents, their properties and the associated processes and, b) provide guidelines to design a composite part with regards to its elastic and failure behaviour.
The specific objectives are: a) the ability to choose a material and a process for a given application, b) the ability to apply the rule of mixture to determine the elastic and failure parameter of a composite part and, c) to design a composite part considering given loadings and boundary conditions.

CONTENT

1 – Composite Materials and Structure-Property Relationship:
• Carbon and Glass fibers;
• Other fibers,
• Textile preforming techniques,
• Thermoset resins,
• Thermoplastic resins,
• CFRP and CFRC,
2 – Manufacturing technologies for composites:
• From fibers to part:
• Hand laminate molding,
• Draping,
• LCM and RTM
• Pultrusion,
• Braiding,
• Tape placement,
• Thermoplastic stamping,
3 – Analysis and Design of Composite Structures:
• Elastic behaviour of composite materials,
• Failure behaviour of composite materials,
• Advance mechanics of composite Materials (FE),
• Joining technologies,
• Composite Structural Design,
• Testing of composite Materials,
• Damage and repair,
• Fatigue,

BIBLIOGRAPHY

F.L. MATTHEWS and R.D. RAWLINGS, 'Composites materials: Engineering and science', 2nd edition, Woodhead Publishing limited, 1999, 470 pages

PRE-REQUISITES

IBENG-1-MATER-S1, IBENG-1-MECHA-S1, IBENG-1-DES-S1, IBENG-1-MATER-S2, IBENG-1-DES-S2, IBENG-2-STRENMAT-S3, IBENG-2-PROD-S3, IBENG-3-MACHELEM-S5

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S2-EC-FLIGHT
ECTS : undefined

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Participation: 30%
Presentation 1: 35%
Presentation 2: 35%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Students are given an insight into the history of human flight and technical expertise in the use of XFoil in order to calculate the characteristics of air-foils (stability, drag and lift forces).
Applications comprise the design and analysis of a sailplane using the air-foil selected before including electric propulsion plus energy storage. Emphasis is placed on team work and oral presentations.

CONTENT

1 – Introduction – History of Flight
2 – Airplane aerodynamics and stability
3 – Introduction to XFOIL and the “Stuttgarter Profilkatalog”. Selection of airfoil and XFOIL simulations. Comparisons between experimental data and XFOIL results. Interpretation of results using lift, drag, moment data and pressure distributions for ‘typical’ points on the lift-drag polar.
4 - Airfoil Aerodynamics
5 - Explanation XFLR5 usage - Design and analysis of a sailplane using the airfoil selected before including electric propulsion (plus energy storage).
6 - Presentations on “A French Perspective on History of Flight” and sailplane design

BIBLIOGRAPHY

Althaus, D. (1996). Stuttgarter Profilkatalog II: Niedriggeschwindigkeitsprofile. Vieweg&Sohn Braunschweig, Stuttgart.

PRE-REQUISITES

IBENG-1-MECH-S1, IBENG-1-MECH-S2, IBENG-1-DES-S1, IBENG-1-DES-S2, IBENG-2-MATHS-S3IBENG-2-FLUID-S3, IBENG-2 AERODESIGN-S4, IBENG-2-SPAFLI-S4

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S2-EC-MPHYS
ECTS : undefined

HOURS

Cours :	8h
TD :	15h
TP :	0h
Projet :	10h
Evaluation :	0h
Face à face pédagogique :	23h
Travail personnel :	0h
Total :	33h

ASSESMENT METHOD

Written test: 50%
Project report: 50%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Multiphysics simulation refers to the simultaneous simulation of different aspects of a physical system or systems and their interactions. It therefore spans several disciplines in Physics and Engineering thus requiring a unified modelling approach.
This course is divided into two parts:
a) A theoretical introduction and applications using Bond Graphs
b) A project work with application to the control of a mini-drone

CONTENT

*introduction to Bond Graphs
* numerical simulations applied to Mechatronics
* introduction to Rapid Prototyping
* introduction to the measurement and processing of logical and analogical data
* introduction to power electronics and motor control
* project work on the control of an actual mini-drone: acceleration measurements, implement motor control, characterise propeller thrust, stationary flight

BIBLIOGRAPHY

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE :IBENG-3-S2-EC-ENDPROJ

ECTS : undefined

HOURS

Cours :	0h
TD :	56h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	56h
Travail personnel :	0h
Total :	56h

ASSESMENT METHOD

Oral presentation: 50%
Written report: 50%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Students are given the opportunity to work on a real industrial problem by groups of 3-4 and interact with engineers and specialists in the field. They are also given the responsibility of managing their time, the organisation and the deliverables.
Non-francophone students will have to practice French in a professional context.
The final projects enable students to make informed career decision concerning the field they want to study or work in after the course.

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

All 2nd and 3rd year modules

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S2-EC-INTERN
ECTS : undefined

HOURS

Cours :	0h
TD :	30h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	30h
Travail personnel :	0h
Total :	30h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Students have to work in industry for a minimum of 4 months in a capacity of junior engineer in order to put into practice in real-life situations all the competencies acquired through the 3 years of the IBMMAE program. All sectors of industry can be chosen providing that the corresponding project has a strong mechanical component. Internships in the aerospace industry are particularly welcome.
Non-francophone students will have to practice French in a professional context.
The final internship enables students to make informed career decision concerning the field they want to study or work in after the course.

CONTENT

On completion of this module, students will
a) Have acquired a first-hand experience about the job market and on how to find a position in industry
b) Have been confronted with real-life technical problems and their economic aspects
c) Deliver a technical report and defense

BIBLIOGRAPHY

PRE-REQUISITES

all the courses taught in years 2&3

IDENTIFICATION

CODE : IBENG-3-S2-EC-IEP-HU
ECTS : undefined

HOURS

Cours :	0h
TD :	34h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	34h
Travail personnel :	0h
Total :	34h

ASSESMENT METHOD

1) Team role play around supply chains in a 'beer game' assessed by students and the teacher
2) Presence and updated data base.

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

CONTENT

The course is divided into 3 modules:

1- Lean Management and Six Sigma Principles

The main objectives are :

a) Analyse the origins of Lean Management and Six Sigma Principles, i.e., Taylorism, Fordism, TPS (Toyota Production System), Total Quality,
b) Understand the culture of a Lean Enterprise / Leadership and highlight differences compared with companies managed in a traditional way
c) Understand the main components of Lean and Six Sigma
d) Lean Leadership, the KATA way of developing people
e) The 5 Principles of Lean
f) Six Sigma Principles
g) Differences and Similarities between Lean and Six Sigma
h) Examples of Lean Management
i) Examples of Six Sigma

2 – Profiling IBMMAE

This second module is designed to update and expend the profile of the IBMMAE programme on social media (LinkedIn, Instagram). Another objective is to liaise with the IBMMAE alumni in relation to their study projects. Students will acquire valuable skills which they can use in companies and organizations

BIBLIOGRAPHY

Detail notes will be provided to students
Some recommended reading:
Decoding the DNA of the Toyota Production System (HBR)
Womack and Jones "Lean Thinking"
Caroline Mondon "Missing Links"

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S2-EC-ICU
ECTS : undefined

HOURS

Cours :	18h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	18h
Travail personnel :	0h
Total :	18h

ASSESMENT METHOD

Presence and a written essay on a topic related to the course content

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

The main objective is to sensitize students to the difficulties associated with cross-cultural relations and introduce possible solutions to interact effectively between people with different cultural backgrounds. Both interpersonal and professional relationships are dealt with. Some classic models are presented and examples are given based on presentations by different speakers of various nationalities of specific cross- or inter-cultural issues.

CONTENT

- Cross cultural communication – Generalities and some models (Hall, Ofstede, Trompenaars, Lewis) –
- Implicit models of organization
- National Stereotypes and Multi-cultural societies
- Illustrations (may change from one year to the next):
• The Long and Winding Road to Brexit
• The Rainbow Nation
• Identity Politics and Conflicts: Northern Ireland
• The Spain/Catalonia Clash
• Affirmative Actions in US Universities
• European Cinemas
• Germany, a Close Friend?

BIBLIOGRAPHY

Edward Hall, ‘Beyond Culture’, ‘The Silent Language’
Geert Hofstede, ‘Cultures and Organizations: Software of the Mind’

PRE-REQUISITES

Some international experience.

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S2-EC-TAN
ECTS :

HOURS

Cours :	0h
TD :	10h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	10h
Travail personnel :	0h
Total :	10h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE : IBENG-3-S2-EC-IEP-HU
ECTS : undefined

HOURS

Cours :	0h
TD :	34h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	34h
Travail personnel :	0h
Total :	34h

ASSESMENT METHOD

1) Team role play around supply chains in a 'beer game' assessed by students and the teacher
2) Presence and updated data base.

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

CONTENT

The course is divided into 3 modules:

1- Lean Management and Six Sigma Principles

The main objectives are :

a) Analyse the origins of Lean Management and Six Sigma Principles, i.e., Taylorism, Fordism, TPS (Toyota Production System), Total Quality,
b) Understand the culture of a Lean Enterprise / Leadership and highlight differences compared with companies managed in a traditional way
c) Understand the main components of Lean and Six Sigma
d) Lean Leadership, the KATA way of developing people
e) The 5 Principles of Lean
f) Six Sigma Principles
g) Differences and Similarities between Lean and Six Sigma
h) Examples of Lean Management
i) Examples of Six Sigma

2 – Profiling IBMMAE

This second module is designed to update and expend the profile of the IBMMAE programme on social media (LinkedIn, Instagram). Another objective is to liaise with the IBMMAE alumni in relation to their study projects. Students will acquire valuable skills which they can use in companies and organizations

BIBLIOGRAPHY

Detail notes will be provided to students
Some recommended reading:
Decoding the DNA of the Toyota Production System (HBR)
Womack and Jones "Lean Thinking"
Caroline Mondon "Missing Links"

PRE-REQUISITES

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S2-EC-ICU
ECTS : undefined

HOURS

Cours :	18h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	18h
Travail personnel :	0h
Total :	18h

ASSESMENT METHOD

Presence and a written essay on a topic related to the course content

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

The main objective is to sensitize students to the difficulties associated with cross-cultural relations and introduce possible solutions to interact effectively between people with different cultural backgrounds. Both interpersonal and professional relationships are dealt with. Some classic models are presented and examples are given based on presentations by different speakers of various nationalities of specific cross- or inter-cultural issues.

CONTENT

- Cross cultural communication – Generalities and some models (Hall, Ofstede, Trompenaars, Lewis) –
- Implicit models of organization
- National Stereotypes and Multi-cultural societies
- Illustrations (may change from one year to the next):
• The Long and Winding Road to Brexit
• The Rainbow Nation
• Identity Politics and Conflicts: Northern Ireland
• The Spain/Catalonia Clash
• Affirmative Actions in US Universities
• European Cinemas
• Germany, a Close Friend?

BIBLIOGRAPHY

Edward Hall, ‘Beyond Culture’, ‘The Silent Language’
Geert Hofstede, ‘Cultures and Organizations: Software of the Mind’

PRE-REQUISITES

Some international experience.

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : HU-3-S2-EC-L-TAN-IBENG
ECTS :

HOURS

Cours :	0h
TD :	14h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	14h
Travail personnel :	0h
Total :	14h

ASSESMENT METHOD

TEACHING AIDS

TEACHING LANGUAGE

CONTACT

AIMS

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Professional French IBENG 3 B1-B2 S2

IDENTIFICATION

CODE : HU-3-S2-EC-L-FLE-IBENG3

ECTS : undefined

HOURS

Cours :	0h
TD :	12h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	12h
Travail personnel :	0h
Total :	12h

ASSESMENT METHOD

Final task

TEACHING AIDS

authentic materials

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr

AIMS

To apply for a position
To give a better understanding of work organization in France

CONTENT

Applying for a job in France:
- email body
- resumee
- cover letter

Work organization in France:
- professionnal and interpersonal relations in the work place

BIBLIOGRAPHY

PRE-REQUISITES

B1 level

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE :IBENG-3-S1-EC-ENDPROJ

ECTS : undefined

HOURS

Cours :	0h
TD :	38h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	38h
Travail personnel :	0h
Total :	38h

ASSESMENT METHOD

Written report: 100%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Students are given the opportunity to work on a real industrial problem by groups of 3-4 and interact with engineers and specialists in the field. They are also given the responsibility of managing their time, the organisation and the deliverables.
Non-francophone students will have to practice French in a professional context.
The final projects enables students to make informed career decision concerning the field they want to study or work in after the course.

CONTENT

BIBLIOGRAPHY

PRE-REQUISITES

IDENTIFICATION

CODE :IBENG-3-S1-EC-PROPULS

ECTS : undefined

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Intermediate exam: 40%
Final exam: 40%
Project presentations: 20%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Acquire solid knowledge on the different jet propulsion related technologies, applied to various types of vehicles. Ability to use an isentropic model of a nozzle to design the latter for a specific purpose (thrust). Ability to apply a thermodynamic approach to analyse the behaviour and performance of propulsion systems based on air-breathing turbomachines (turbojets and turbofans).

CONTENT

• Jet propulsion systems and their performance criteria applied to Air-Breathing and Rocket engines: Thrust; Specific Impulse; Propulsion efficiency; Tsiolkovsky rocket equation; Breguet aircraft equation.
• Fundamental of Compressible flows: Mach number and thermodynamics of compressible flows; Shockwaves; Conservation laws; application to Isentropic flows.
• Rocket engine design: Stagnation and critical states; operating mode of nozzles in rocket engines; influence of combustion pressure and temperature and of nozzle geometry on the thrust finally produced. Calculation of the resulting specific impulse.
• Propulsion systems combustion processes: influence of fuel composition and of Air-Fuel Ratio on the performance of air-breathing combustion processes; use of liquid and solid propellants in rocket engine combustion processes.
• Air-breathing propulsion turbomachines: Thermodynamic cycles used in turbojet or turbofans engines; influence of pressure ratios, air and fuel mass flow rates, blades geometries on the engine performances (specific impulse, propulsion efficiency and specific fuel consumption).

BIBLIOGRAPHY

• J. D. Anderson Jr., Modern Compressible Flow with Historical Perspective, 3rd edition, McGraw-Hill, 2003.
• E. A. Baskharone, Principles of Turbomachinery in Air-Breathing Engines, Cambridge University Press, 2006.
• G. P. Sutton & O. Biblarz, Rocket Propulsion Elements, 9th edition, Wiley, 2017.

PRE-REQUISITES

IBENG-1-MATHS-S1, IBENG-1-MATHS-S2, IBENG-2-MATHS-S3
IBENG-2-FLUID-S3, IBENG-2-FLUID-S4
IBENG-1-THERM-S2

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE IBENG-3-S1-EC-MACHELEM

ECTS : undefined

HOURS

Cours :	24h
TD :	38h
TP :	8h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	70h
Travail personnel :	0h
Total :	70h

ASSESMENT METHOD

Test 1: 30%
Test 2: 30%
Project: 40%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Students should
a) acquire strong capacities in designing machines and machine elements particularly in the field of mechanical transmissions and aeronautical systems
b) be able to define the relevant materials and dimensions with regard to resistance, fatigue
c) acquire the fundamentals of contact mechanics and lubrication
d) be able to use FE software and calculate stresses and deflections in mechanical parts assuming elastic behaviour

CONTENT

• Introduction to mechanical transmissions
• The law of gearing, focus on involute spur and helical gears, introduction to gear manufacturing, the strength calculation methods, some basics about Noise and Vibration Harshness, efficiency of gears and concludes with a simplified overview how to develop gears and select relevant profile and lead modification.
• Introduction to trouble shooting in mechanical transmission based on case studies
• Hertzian contacts and gear lubrication. Failure analysis.
• Reminders on Strength of Materials, resistance criteria, Theory of fatigue, Stress – Number of cycles (S-N) diagrams, Endurance diagrams, fatigue resistance criteria. Theory of cumulative damage
• Bearings, types of bearings, calculation of bearing loads, bearing life,
• Theoretical foundations of finite element analysis in linear elasticity
• Analysis of boundary conditions
• Applications to practical case studies

BIBLIOGRAPHY

Machine Design: An Integrated Approach, 5th Edition, Robert L. Norton, Worcester Polytechnic Institute, Prentice Hall, Copyright 2014, 1060 pp. ISBN 0-13-335671-7
Shigley's Mechanical Engineering Design, Mc Graw-Hill series in mechanical engineering, Joseph Edward Shigley, McGraw-Hill, 2011, 1088 pp. ISBN 0071077839, 9780071077835
Machine Elements in Mechanical Design, Mott, R. L., Prentice Hall, 5th Edition, 2013.
Fundamentals of Machine Elements, Schmid, S. R. and Hamrock, B. J., CRC Press, 3rd Edition, 2013.

PRE-REQUISITES

IBENG-1-MATER-S1, IBENG-1-MATER-S2, IBENG-1-MECH-S1, IBENG-1-MECH-S2, IBENG-2-STRENMAT-S3, IBENG-1-DES-S1, IBENG-1-DES-S2, IBENG-2-KINE-S3

IDENTIFICATION

CODE : IBENG-3-S1-EC-MEASURE

ECTS : undefined

HOURS

Cours :	13h
TD :	27h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	40h
Travail personnel :	0h
Total :	40h

ASSESMENT METHOD

Assignments: 40%
Laboratory sessions: 20%
Final exam: 40%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Appreciate the importance of sensor systems, and their evolution, to advances in aviation. Acquire fundamental understanding of a range of common sensors and their associated conditioning circuitry.
Ability to propose a sensor system design capable of meeting the demands/constraints of a given situation.
Ability to predict, measure and analyse the performances of various sensor systems

CONTENT

- Introduction to sensors: History and future of sensor systems in Aviation; from Sensors, to Smart Sensors, to Sensor Networks to the Internet of Things.
- Key sensor characteristics, sources of artefacts, etc.
- Sensor Circuits: Key transduction mechanisms and the associated signal conditioning required. Impedance bridges; impedance loading; Filters; Amplifiers; etc.
- Measurement Equipment and Power Sources
- Temperature Sensing
- Proximity, Distance, Velocity Sensing
- Acceleration, Force, Pressure Sensing
- A range of other sensing applications

BIBLIOGRAPHY

A comprehensive range of detailed notes and material will be provided

PRE-REQUISITES

IBENG-1-ELEC-S1, IBENG-1-MATHS-S1, IBENG-1-MATHS-S2, IBENG-2-MATHS-S3

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S1-EC-HEAT
ECTS : undefined

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Quizzes: 10%
Laboratory sessions: 20%
Intermediate exam: 30%
Final exam: 40%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Acquire solid knowledge on various modes of heat transfer (conduction, convection, radiation) and on heat exchangers. Ability to reason on one-dimensional problems and to be able to solve them by using an electrical analogy: thermal networks method.

CONTENT

- Conduction: Fourier's law, general three-dimensional heat conduction equation for steady state and unsteady conditions, concept of thermal resistance.
- Convection: Newton's law, dimensionless numbers, empirical and practical relationships for free and forced convection problems.
- Radiation: properties used to quantify thermal radiation (black body and gray body), Stefan-Boltzmann's law, radiation-network method to quantify the heat flow.
- Application to insulation problems and to conduction-convection systems (study of fins).
- Heat exchangers: types of heat exchangers and calculation methods (log mean temperature difference, effectiveness and NTU method of analysis)

BIBLIOGRAPHY

J.P. Holman (2010). Heat Transfer, 10th edition, Mac Graw-Hill book company, New York

PRE-REQUISITES

IBENG-1-MATHS-S1, IBENG-1-MATHS-S2, IBENG-2-MATHS-S3
IBENG-2-FLUID-S3, IBENG-2-FLUID-S4
IBENG-1-THERM-S2

IDENTIFICATION

CODE IBENG-3-S1-EC-CONTROL-FLIGHT

ECTS : undefined

HOURS

Cours :	0h
TD :	30h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	30h
Travail personnel :	0h
Total :	30h

ASSESMENT METHOD

Homework assignment: 10%
Project work: flight control design: 45%
Final exam (2h): 45%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

The course proposes an introduction to the mechanics of atmospheric flight. After this class, the students will be able to understand the design drivers of an aeroplane, evaluate some basic performance, including its static stability properties, and understand the future directions for aircraft design.
The course also addresses the topic of flight controls, making the student capable of designing and tuning the different feedback loops in an aeroplane, based on standard control synthesis techniques.

CONTENT

- Principles of aerodynamics, aerodynamical forces, airfoils, wings
- Elements of aeroplane design and specifications
- Aeroplane performance and manoeuvres
- Load factor, flight envelope
- Static stability
- Linear equations of flight
- Flight controls.

BIBLIOGRAPHY

Paolo Massioni, Fundamentals of flight dynamics. Lecture notes.
Michael V. Cook, Flight dynamics principles: a linear systems approach to aircraft stability and control. Butterworth-Heinemann, 2012 (optional).

PRE-REQUISITES

IBENG-1-ELEC-S1, IBENG-1-MATHS-S1, IBENG-1-MATHS-S2, IBENG-1-MECH-S2, IBENG-2-MATHS-S3

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODEIBENG-3-S1-EC-CONTROL-FUND

ECTS : undefined

HOURS

Cours :	10h
TD :	18h
TP :	10h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	38h
Travail personnel :	0h
Total :	38h

ASSESMENT METHOD

Micro-project: 20%
Test 1: 40%
Test 2: 40%

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

Control engineering is the engineering discipline that focuses on the modelling of a diverse range of dynamic systems (e.g. mechanical systems) and the design of controllers that will cause these systems to behave in the desired manner.
The objectives of this course are: a) help students to model and understand simple dynamic systems and, b) to provide guidelines in designing control systems for industry

CONTENT

1 – Introduction:
• Basic mathematical tools:
o Elementary functions
o Convolution product
• Frequency domain representations
o Fourier transform
o Laplace transform
2 – First and second order systems:
• Models
• Impulse and step responses
• Frequency Response Function
o Bode diagrams
• Matlab Simulations
3 – Controlled systems:
• Feedback loop
o Principles of open and closed loop
• Performance
• Stability
4 – Basic compensators:
• PID
• Lead & Lag Compensators
• Matlab Simulations

BIBLIOGRAPHY

G. F. FRANKLIN, ‘Feedback Control of Dynamics Systems”, 4th edition, Prentice Hall, 2002, 910 pages.

PRE-REQUISITES

IBENG-1-ELEC-S1, IBENG-1-MATHS-S1, IBENG-1-MATHS-S2, IBENG-1-MECH-S2, IBENG-2-MATHS-S3

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for IBENG students -Level B2 to C1 - 2 hours/week

IDENTIFICATION

CODE : HU-3-S1-EC-L-FLE-B2C1
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-Reading comprehension, listening comprehension, writing, oral production/interaction
OR
-Project

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enablling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.understand and write long and complex documents of all kinds such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
.use more or less complex structures of the scientific language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

-L'écrit, stratégies et pratiques(CLE Collection Savoir-Faire)
-Le résumé (CLE Collection Savoir-Faire)
-Vocabulaire (CLE Collection: Entraînez-vous niveau Avancé)
-Quotidiens et magazines d'information disponibles à la bibliothèque Marie Curie
-Francoscopie
-Resources available online at: https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B2 level

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S1-EC-IEP-HU
ECTS : 2

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Continuous assessment based on written assignments: GRE essay, CVs and cover letters, and personal statements, oral communication activities: interview simulations with question and answer techniques, elevator pitches and management role-play activities.

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

This module aims to provide students with the essential tools to: i) perform well during a professional interview in English, ii) develop students' knowledge of company cultures and ethics, iii) write professional documents for Master's applications

CONTENT

i) Students will produce a CV in English and find an entry-level job/internship offer in their field. These will form the basis for interview simulations. Students will have the opportunity to interview fellow students and be interviewed in turn. The course will focus on interview techniques such as story-telling for job interviews (STAR) and look at common interview questions and how to reply to them effectively. Students will also create their own 'elevator pitch' videos. Constructive feedback will be given throughout the module to hone interview skills.
ii) Students will study basic management theory and different models of company culture. They will then draw on this input to participate in meetings and negotiations via role plays. They will also create Serious Games for professional situations.
iii) Students will be given practice in the verbal reasoning and essay sections the GRE (Graduate Record Examination) test in order to optimise their scores in these areas.
Students will compare and contrast covering letters and personal statements and will prepare one of these documents.

BIBLIOGRAPHY

GRE preparation workbooks e.g. The Official Guide to the GRE General Test 3rd edition, Barron's GRE 21st edition

PRE-REQUISITES

Validation of Professional Studies module (semester 4 University of Strathclyde)

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : HU-3-S1-EC-L-ALL
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. MADER Berthold :
berthold.mader@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (B1-B2+) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-ESP
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

The average is made up of half (50%) continuous assessment (assessments of the 5 skills carried out in class) and a common exam (50% of the average) which assesses Written Comprehension, Oral Comprehension, Grammatical and Lexical Skills and Written Expression. This common exam does not have the value of level validation.

TEACHING AIDS

Authentic and/or didactic documents related to the selected topics.
- "Pink" grammar and exercise booklets
- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. Suarez Lopez Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

AIMS

The targeted and mobilized skills are those of both the INSA Humanities Skills Framework (specifically skills 3 and 7) and the CEFR.
Consistent description of the CEFR skills.
http://www.sciencespo-lille.eu/sites/default/files/cecrl.pdf

CONTENT

The five skills recognized by the Common European Framework of Reference for Languages (CEFR) are practiced and assessed several times throughout the semester/ year, ensuring regular practice of the various skills and knowledge acquired.

The themes, grammar, and vocabulary covered in class are adapted to the target level (indicated in the group code) and are at the discretion of the teacher.

BIBLIOGRAPHY

Web resources:
- for listening comprehension, grammar, and vocabulary training (all levels): http://www.ver-taal.com/index.htm
- grammar and vocabulary exercises (all levels): https://www.espagnolfacile.com/
- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

None. Courses range from beginner to advanced level. Each student will be placed in a group corresponding to their level, either through a test at the beginning of the year (for new students) or based on their level from the previous year for students already attending INSA

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Oyarzo Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Strelow Antunes Isabel : isabel.strelow-antunes@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

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In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-ITA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
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CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
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--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

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CONTENT

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In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

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--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

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In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Tandem and intercomprehension course S1

IDENTIFICATION

CODE : HU-3-S1-EC-L-TAN
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

Evaluation in TANDEM consists in continuous assessment of their preparation and oral work in class, as well as written work and an oral presentation.

TEACHING AIDS

-Diverse authentic documents, both written and audiovisual

TEACHING LANGUAGE

French

CONTACT

Mme Davila Lozano Monica : monica.davila-lozano@insa-lyon.fr
Mme Rivoire Camille : camille.rivoire@insa-lyon.fr
Mme Vincensini Catherine : catherine.vincensini@insa-lyon.fr
Mme Strelow Isabel : isabel.strelow-antunes@insa-lyon.fr
Mme Raymond Camille : camille.raymond@insa-lyon.fr
Mme Fradois Delphine : delphine.fradois@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills valued by INSA:
CT7: Work in an international, intercultural context
7.1 Communicate in a foreign language
7.2 Decode cultural references in speech, attitudes and behaviors.
7.3 Put one's own values, beliefs and behaviors into a cultural perspective.

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

THE STUDENT CAN:
--talk about themselves and their country
--talk about a social phenomenon OR
--talk about a cultural phenomenon OR
--talk about a scientific phenomenon OR
--have a conversation appropriate to the context; communicate in an appropriate manner
--give an oral presentation AND/OR write clear expository prose
--learn and apply usage and vocabulary discovered in class
--understand and apply diverse linguistic and social codes

CONTENT

The TANDEM modules offer linguistic and cultural exchanges between French-speaking students and German-speaking, English-speaking, Spanish-speaking and Portuguese-speaking students in each of the languages.

The INTERCOMPREHENSION module is all about learning to understand native speakers of a Romance language different to one's own. Each student speaks their native language and learns to understand the others.

The work is carried out by organizing a debate around a controversial subject, by writing a story, by presenting an element belonging to the specific culture, by playing board games ... in short, by interacting permanently and in any form possible with other students fluent in the different working languages.

Of course, oral comprehension is also at the heart of this course. It is a living, authentic learning in the spirit of sharing. Everyone has something to learn and to pass on.

BIBLIOGRAPHY

PRE-REQUISITES

FOR THE TANDEMS
For francophone students:
.B2 in German, English, Spanish
.B1 in Portuguese
For anglophone students: B1 minimum in French

FOR INTERCOMPREHENSION
Must be native speaker of a romance language (French, Spanish, Catalan, Italian, Portuguese, Romanian)

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-CHI
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Jiang Chunyan :
chunyan.jiang-huang@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language
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--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class
The target level of acquisition (A1-B2) is dependent on the level of group

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks
that require the students to engage in the 5 linguistic activities, at a level and with linguistic
input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.
In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-JAP
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mihara Norio :
norio.mihara@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
The student CAN:
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--produce diverse types of written expression
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--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

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CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.
In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S1-EC-IEP-HU
ECTS : 2

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Continuous assessment based on written assignments: GRE essay, CVs and cover letters, and personal statements, oral communication activities: interview simulations with question and answer techniques, elevator pitches and management role-play activities.

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

This module aims to provide students with the essential tools to: i) perform well during a professional interview in English, ii) develop students' knowledge of company cultures and ethics, iii) write professional documents for Master's applications

CONTENT

i) Students will produce a CV in English and find an entry-level job/internship offer in their field. These will form the basis for interview simulations. Students will have the opportunity to interview fellow students and be interviewed in turn. The course will focus on interview techniques such as story-telling for job interviews (STAR) and look at common interview questions and how to reply to them effectively. Students will also create their own 'elevator pitch' videos. Constructive feedback will be given throughout the module to hone interview skills.
ii) Students will study basic management theory and different models of company culture. They will then draw on this input to participate in meetings and negotiations via role plays. They will also create Serious Games for professional situations.
iii) Students will be given practice in the verbal reasoning and essay sections the GRE (Graduate Record Examination) test in order to optimise their scores in these areas.
Students will compare and contrast covering letters and personal statements and will prepare one of these documents.

BIBLIOGRAPHY

GRE preparation workbooks e.g. The Official Guide to the GRE General Test 3rd edition, Barron's GRE 21st edition

PRE-REQUISITES

Validation of Professional Studies module (semester 4 University of Strathclyde)

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-5-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education concerns the teaching of Sports and Artistic Physical Activities (APSA), and will take the form of continuous assessment with half-yearly marking.

The mark depends on the degree of acquisition of the skills expected in each of the activities, and the progress made over all the sessions in the cycle. The mark takes into account :

Individual and/or team performance
mastery of execution
Progress in the sports project
Responsibility and autonomy

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

MME JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: SHS and contributes to the development of the School's transversal competences

1*Auto-evaluating one's own performance
Knowledges :
- Fundamentals, principles of action and terminology of sports activities
- Criteria for observation, achievement and success.
Abilities :
- Assess your level of practice
- Build up a warm-up
- Set goals for progress
- Manage physical and mental potential

2* Work, learn and develop independently
Knowledge :
- PSAA rules
- Observation criteria
- Principles of warm-up and cool-down
Abilities :
- Mobilise resources
- Analyse, observe, question
- Take on different roles (referee, choreographer)

3* Interact with others, work as part of a team
Knowledges :
- Roles and functions in each sports activity
Abilities :
- Communicate appropriately: verbal, non-verbal and postural communication.
- Integrate into a group
- Take part in and develop a group project
- Take the initiative
- Be a good listener

4* Be creative, innovative and enterprising
Knowledge :
- Artistic disciplines
Abilities :
- Draw on knowledge and resources from different artistic fields to produce an original work.
- Mobilise the imagination and sensibility and make them visible through dance movement
- Access the symbolism of the body

5* Act responsibly in a complex world
Knowledge :
- Safety and operating rules
Abilities :
- Identify uncertainties and risks and act to reduce them
- Integrate a responsible dimension into their actions
- Show respect and fair play in a power struggle

6* Working in an international context
Knowledge :
- Socio-cultural differences
Abilities :
- Integrate cultural diversity into group work
- Act with respect for self and others

CONTENT

Physical Education and Sport lessons are organised around traditional Physical Education lessons, or advanced lessons, or appropriate practices (EPSA), or competitive practices within the framework of the Section Sportive Haut Niveau.

1. Physcical Education lessons :
Students choose one or two physical and sporting activities per year from among the activities offered by the sports centre (individual, group, dual).
2. Appropriate Physical Education lessons: For all students who are exempt from physical activity for at least 2 months:
Swimming, Body-building, Nordic Walking, Somatic Exercise, Sophrology, Wheelchair Basketball, Pilates, Table Tennis, etc.
3. Advanced Physical Education courses :
Specialisation in a sporting activity, University training and competitions
4. SSHN (High-Level Athlete section)

University training and competitions

EPS5 GMPP OYONNAX :Group cohesion project
Autonomy Lessons at S1 on Wednesday afternoons
Hiking outing

BIBLIOGRAPHY

OTTAWA Charter (1986): ‘health is seen as a resource for everyday life; it is a positive concept that highlights social and individual resources, as well as physical abilities’.

PRE-REQUISITES

- EPS: none
- Appropriate Physical Education: subject to medical advice
- Advanced courses and competitive practice: previous practice required subject to specific selection according to each activity
- SHN: ministerial list

Levels 1 and 2: Physical Education, Appropriate physical education
Level 3: Advanced courses and competitive practice, SHN

INSA LYON
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20, avenue Albert Einstein - 69621 Villeurbanne cedex - France
Tél.+ 33 (0)4 72 43 83 83 - Fax + 33 (0)4 72 43 85 00
www.insa-lyon.fr

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : HU-3-S1-EC-L-ALL
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. MADER Berthold :
berthold.mader@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

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--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (B1-B2+) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

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--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-ESP
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

The average is made up of half (50%) continuous assessment (assessments of the 5 skills carried out in class) and a common exam (50% of the average) which assesses Written Comprehension, Oral Comprehension, Grammatical and Lexical Skills and Written Expression. This common exam does not have the value of level validation.

TEACHING AIDS

Authentic and/or didactic documents related to the selected topics.
- "Pink" grammar and exercise booklets
- "Yellow" booklet: conjugation guides
- The CRL

TEACHING LANGUAGE

French

CONTACT

M. Suarez Lopez Gonzalo :
gonzalo.suarez-lopez@insa-lyon.fr

AIMS

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Consistent description of the CEFR skills.
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CONTENT

The five skills recognized by the Common European Framework of Reference for Languages (CEFR) are practiced and assessed several times throughout the semester/ year, ensuring regular practice of the various skills and knowledge acquired.

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- grammar and vocabulary exercises (all levels): https://www.espagnolfacile.com/
- https://moodle.insa-lyon.fr/course/index.php categoryid=353

PRE-REQUISITES

None. Courses range from beginner to advanced level. Each student will be placed in a group corresponding to their level, either through a test at the beginning of the year (for new students) or based on their level from the previous year for students already attending INSA

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

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20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-ARA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Garay Oyarzo Edicto :
edicto.garay-oyarzo@insa-lyon.fr

AIMS

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It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language

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The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-POR
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Strelow Antunes Isabel : isabel.strelow-antunes@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-ITA
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Cognet Anne :
anne.cognet@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

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In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-RUS
ECTS : 2

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations

-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Iakovlev Maxime :
maxime.iakovlev@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :

CT7: Work in an international, intercultural context

--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

The student CAN:

-- understand and apply social codes from different countries

--have a conversation appropriate de the context

--confront communicational challenges of increasing difficulty

--produce diverse types of written expression

--understand authentic documents (written and audiovisual)

--talk about a society or a social phenomenon

--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.

In the first semester, themes covered include:

--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)

--oral presentation skills

--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Tandem and intercomprehension course S1

IDENTIFICATION

CODE : HU-3-S1-EC-L-TAN
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

Evaluation in TANDEM consists in continuous assessment of their preparation and oral work in class, as well as written work and an oral presentation.

TEACHING AIDS

-Diverse authentic documents, both written and audiovisual

TEACHING LANGUAGE

French

CONTACT

Mme Davila Lozano Monica : monica.davila-lozano@insa-lyon.fr
Mme Rivoire Camille : camille.rivoire@insa-lyon.fr
Mme Vincensini Catherine : catherine.vincensini@insa-lyon.fr
Mme Strelow Isabel : isabel.strelow-antunes@insa-lyon.fr
Mme Raymond Camille : camille.raymond@insa-lyon.fr
Mme Fradois Delphine : delphine.fradois@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES

It contributes to the development of the following transversal skills valued by INSA:
CT7: Work in an international, intercultural context
7.1 Communicate in a foreign language
7.2 Decode cultural references in speech, attitudes and behaviors.
7.3 Put one's own values, beliefs and behaviors into a cultural perspective.

by allowing the student-engineer to develop and be evaluated on the following learning outcomes:

THE STUDENT CAN:
--talk about themselves and their country
--talk about a social phenomenon OR
--talk about a cultural phenomenon OR
--talk about a scientific phenomenon OR
--have a conversation appropriate to the context; communicate in an appropriate manner
--give an oral presentation AND/OR write clear expository prose
--learn and apply usage and vocabulary discovered in class
--understand and apply diverse linguistic and social codes

CONTENT

The TANDEM modules offer linguistic and cultural exchanges between French-speaking students and German-speaking, English-speaking, Spanish-speaking and Portuguese-speaking students in each of the languages.

The INTERCOMPREHENSION module is all about learning to understand native speakers of a Romance language different to one's own. Each student speaks their native language and learns to understand the others.

The work is carried out by organizing a debate around a controversial subject, by writing a story, by presenting an element belonging to the specific culture, by playing board games ... in short, by interacting permanently and in any form possible with other students fluent in the different working languages.

Of course, oral comprehension is also at the heart of this course. It is a living, authentic learning in the spirit of sharing. Everyone has something to learn and to pass on.

BIBLIOGRAPHY

PRE-REQUISITES

FOR THE TANDEMS
For francophone students:
.B2 in German, English, Spanish
.B1 in Portuguese
For anglophone students: B1 minimum in French

FOR INTERCOMPREHENSION
Must be native speaker of a romance language (French, Spanish, Catalan, Italian, Portuguese, Romanian)

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-CHI
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

Mme Jiang Chunyan :
chunyan.jiang-huang@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language
by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
--understand authentic documents (written and audiovisual)
--talk about a society or a social phenomenon
--apply grammar and vocabulary covered in class
The target level of acquisition (A1-B2) is dependent on the level of group

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks
that require the students to engage in the 5 linguistic activities, at a level and with linguistic
input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.
In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Centre des Humanités
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE
Foreign Languages

IDENTIFICATION

CODE : HU-3-S1-EC-L-JAP
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-2 written evaluations
-2 oral evaluations

TEACHING AIDS

Authentic and/or instructional documents, linked with chosen themes

TEACHING LANGUAGE

French

CONTACT

M. Mihara Norio :
norio.mihara@insa-lyon.fr

AIMS

This EC belongs to the UE: HUMANITIES
It contributes to the development of the following transversal skills :
CT7: Work in an international, intercultural context
--CT7.1: Communicate in a foreign language by allowing the student-engineer to develop and be evaluated on the following learning outcomes:
The student CAN:
-- understand and apply social codes from different countries
--have a conversation appropriate de the context
--confront communicational challenges of increasing difficulty
--produce diverse types of written expression
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--apply grammar and vocabulary covered in class

The target level of acquisition (A1-B2) is dependent on the level of group.

CONTENT

Instructors use CEFR methodology to design lessons toward the completion of complex tasks that require the students to engage in the 5 linguistic activities, at a level and with linguistic input that are appropriate for the group. In-class and/or guided independent study of the forms and functions of the language is regular and adapted to the level of the group.
In the first semester, themes covered include:
--language learning methodology (RC, OC, WP, vocabulary learning and grammar training)
--oral presentation skills
--a topic about a society or a social phenomenon

BIBLIOGRAPHY

PRE-REQUISITES

None

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for IBENG students -Level B2 to C1 - 2 hours/week

IDENTIFICATION

CODE : HU-3-S1-EC-L-FLE-B2C1
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

-Reading comprehension, listening comprehension, writing, oral production/interaction
OR
-Project

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anaïs :
anais.debove@insa-lyon.fr
Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking

The course aims at giving you all the language skills you need to feel at ease in your daily life then at enablling you to express yourself in such a way that writing or talking to a native speaker about a wide range of subjects both general and technical in details is natural for you.

You will observe how the language works, you will practice a wide range of various activities, you will actively take part in projects that will lead you to be more autonomous and that will greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.understand and write long and complex documents of all kinds such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
.use more or less complex structures of the scientific language

CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

-L'écrit, stratégies et pratiques(CLE Collection Savoir-Faire)
-Le résumé (CLE Collection Savoir-Faire)
-Vocabulaire (CLE Collection: Entraînez-vous niveau Avancé)
-Quotidiens et magazines d'information disponibles à la bibliothèque Marie Curie
-Francoscopie
-Resources available online at: https://fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B2 level

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S1-EC-IEP-HU
ECTS : 2

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Continuous assessment based on written assignments: GRE essay, CVs and cover letters, and personal statements, oral communication activities: interview simulations with question and answer techniques, elevator pitches and management role-play activities.

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

This module aims to provide students with the essential tools to: i) perform well during a professional interview in English, ii) develop students' knowledge of company cultures and ethics, iii) write professional documents for Master's applications

CONTENT

i) Students will produce a CV in English and find an entry-level job/internship offer in their field. These will form the basis for interview simulations. Students will have the opportunity to interview fellow students and be interviewed in turn. The course will focus on interview techniques such as story-telling for job interviews (STAR) and look at common interview questions and how to reply to them effectively. Students will also create their own 'elevator pitch' videos. Constructive feedback will be given throughout the module to hone interview skills.
ii) Students will study basic management theory and different models of company culture. They will then draw on this input to participate in meetings and negotiations via role plays. They will also create Serious Games for professional situations.
iii) Students will be given practice in the verbal reasoning and essay sections the GRE (Graduate Record Examination) test in order to optimise their scores in these areas.
Students will compare and contrast covering letters and personal statements and will prepare one of these documents.

BIBLIOGRAPHY

GRE preparation workbooks e.g. The Official Guide to the GRE General Test 3rd edition, Barron's GRE 21st edition

PRE-REQUISITES

Validation of Professional Studies module (semester 4 University of Strathclyde)

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

CENTRE DES SPORTS
Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

Sports

IDENTIFICATION

CODE : CDS-5-S1-EC-EPS
ECTS :

HOURS

Cours :	0h
TD :	1.5h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	1.5h
Travail personnel :	0h
Total :	1.5h

ASSESMENT METHOD

Assessment in Physical Education concerns the teaching of Sports and Artistic Physical Activities (APSA), and will take the form of continuous assessment with half-yearly marking.

The mark depends on the degree of acquisition of the skills expected in each of the activities, and the progress made over all the sessions in the cycle. The mark takes into account :

Individual and/or team performance
mastery of execution
Progress in the sports project
Responsibility and autonomy

TEACHING AIDS

All physical, sporting, artistic and competitive activities

TEACHING LANGUAGE

French

CONTACT

MME JAUSSAUD Marie :
marie.jaussaud@insa-lyon.fr

AIMS

This EC is part of the Teaching Unit: SHS and contributes to the development of the School's transversal competences

1*Auto-evaluating one's own performance
Knowledges :
- Fundamentals, principles of action and terminology of sports activities
- Criteria for observation, achievement and success.
Abilities :
- Assess your level of practice
- Build up a warm-up
- Set goals for progress
- Manage physical and mental potential

2* Work, learn and develop independently
Knowledge :
- PSAA rules
- Observation criteria
- Principles of warm-up and cool-down
Abilities :
- Mobilise resources
- Analyse, observe, question
- Take on different roles (referee, choreographer)

3* Interact with others, work as part of a team
Knowledges :
- Roles and functions in each sports activity
Abilities :
- Communicate appropriately: verbal, non-verbal and postural communication.
- Integrate into a group
- Take part in and develop a group project
- Take the initiative
- Be a good listener

4* Be creative, innovative and enterprising
Knowledge :
- Artistic disciplines
Abilities :
- Draw on knowledge and resources from different artistic fields to produce an original work.
- Mobilise the imagination and sensibility and make them visible through dance movement
- Access the symbolism of the body

5* Act responsibly in a complex world
Knowledge :
- Safety and operating rules
Abilities :
- Identify uncertainties and risks and act to reduce them
- Integrate a responsible dimension into their actions
- Show respect and fair play in a power struggle

6* Working in an international context
Knowledge :
- Socio-cultural differences
Abilities :
- Integrate cultural diversity into group work
- Act with respect for self and others

CONTENT

Physical Education and Sport lessons are organised around traditional Physical Education lessons, or advanced lessons, or appropriate practices (EPSA), or competitive practices within the framework of the Section Sportive Haut Niveau.

1. Physcical Education lessons :
Students choose one or two physical and sporting activities per year from among the activities offered by the sports centre (individual, group, dual).
2. Appropriate Physical Education lessons: For all students who are exempt from physical activity for at least 2 months:
Swimming, Body-building, Nordic Walking, Somatic Exercise, Sophrology, Wheelchair Basketball, Pilates, Table Tennis, etc.
3. Advanced Physical Education courses :
Specialisation in a sporting activity, University training and competitions
4. SSHN (High-Level Athlete section)

University training and competitions

EPS5 GMPP OYONNAX :Group cohesion project
Autonomy Lessons at S1 on Wednesday afternoons
Hiking outing

BIBLIOGRAPHY

OTTAWA Charter (1986): ‘health is seen as a resource for everyday life; it is a positive concept that highlights social and individual resources, as well as physical abilities’.

PRE-REQUISITES

- EPS: none
- Appropriate Physical Education: subject to medical advice
- Advanced courses and competitive practice: previous practice required subject to specific selection according to each activity
- SHN: ministerial list

Levels 1 and 2: Physical Education, Appropriate physical education
Level 3: Advanced courses and competitive practice, SHN

INSA LYON
Campus LyonTech La Doua
20, avenue Albert Einstein - 69621 Villeurbanne cedex - France
Tél.+ 33 (0)4 72 43 83 83 - Fax + 33 (0)4 72 43 85 00
www.insa-lyon.fr

Bachelor en sciences et ingénierie - génie mécanique, des matériaux et aérospatial (Mechanical, Materials and Aerospace Engineering)

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

IDENTIFICATION

CODE : IBENG-3-S1-EC-IEP-HU
ECTS : 2

HOURS

Cours :	0h
TD :	0h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	0h
Travail personnel :	0h
Total :	0h

ASSESMENT METHOD

Continuous assessment based on written assignments: GRE essay, CVs and cover letters, and personal statements, oral communication activities: interview simulations with question and answer techniques, elevator pitches and management role-play activities.

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

AIMS

This module aims to provide students with the essential tools to: i) perform well during a professional interview in English, ii) develop students' knowledge of company cultures and ethics, iii) write professional documents for Master's applications

CONTENT

i) Students will produce a CV in English and find an entry-level job/internship offer in their field. These will form the basis for interview simulations. Students will have the opportunity to interview fellow students and be interviewed in turn. The course will focus on interview techniques such as story-telling for job interviews (STAR) and look at common interview questions and how to reply to them effectively. Students will also create their own 'elevator pitch' videos. Constructive feedback will be given throughout the module to hone interview skills.
ii) Students will study basic management theory and different models of company culture. They will then draw on this input to participate in meetings and negotiations via role plays. They will also create Serious Games for professional situations.
iii) Students will be given practice in the verbal reasoning and essay sections the GRE (Graduate Record Examination) test in order to optimise their scores in these areas.
Students will compare and contrast covering letters and personal statements and will prepare one of these documents.

BIBLIOGRAPHY

GRE preparation workbooks e.g. The Official Guide to the GRE General Test 3rd edition, Barron's GRE 21st edition

PRE-REQUISITES

Validation of Professional Studies module (semester 4 University of Strathclyde)

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international IBENG students -Level B1 to B2 - 4 hours

IDENTIFICATION

CODE : HU-3-S1-EC-L-FLE-B2-2B
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

Mme Sassiat Anais :
anais.debove@insa-lyon.fr

Mme Fradois Delphine :
delphine.fradois@insa-lyon.fr

AIMS

Language skills : writing, written and oral comprehension, speaking
The course aims at giving you all the language skills you need to feel at ease in your daily
life then at enabling you to express yourself in such a way that writing or talking to a native
speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.
You will observe how the language works, you will practice a wide range of various activities,
you will actively take part in projects that will lead you to be more autonomous and that will
greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours,
student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

A2 /B1 You will find a selection of resources available online at the following address https://
fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level

INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

Domaine Scientifique de la DOUA
20 Avenue Albert Einstein - 69100 VILLEURBANNE

French course for international IBENG students -Level B1 to B2 - 4 hours

IDENTIFICATION

CODE : HU-3-S1-EC-L-FLE-B2-2A
ECTS : undefined

HOURS

Cours :	0h
TD :	26h
TP :	0h
Projet :	0h
Evaluation :	0h
Face à face pédagogique :	26h
Travail personnel :	0h
Total :	26h

ASSESMENT METHOD

- Reading Comprehension, Listening Comprehension, writing : 25 %
- Project: 25%
- Final exam Writing and Oral Interaction: 50 %

TEACHING AIDS

Various documents (on paper, audio, video,..)

TEACHING LANGUAGE

French

CONTACT

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AIMS

Language skills : writing, written and oral comprehension, speaking
The course aims at giving you all the language skills you need to feel at ease in your daily
life then at enabling you to express yourself in such a way that writing or talking to a native
speaker about a wide range of subjects both general and technical in details is natural for you.
It also aims at giving you tools to understand what is expected of you in your science classes.
You will observe how the language works, you will practice a wide range of various activities,
you will actively take part in projects that will lead you to be more autonomous and that will
greatly help you in your studies, in your student and social life.

CONTENT

At the end of the course, you will be able to:
.tell about an event, a short news item, a personal experience, a story
.compare
.express feelings such as wills, interdictions, wishes, doubts, necessities, possibilities, advices)
.talk about the future
.make assumptions
.convince
.use the most common structures of the scientific language
.understand and write long and complex documents of all kinds such as administrative or professional mails and essays
.tell about real or imaginary events and experiences in details
.understand and particpate in an animated conversation in between natives, debate
.respect the speech codes when conversing or debating
.make a detailed oral presentation about a news item, or a field of study, a personal project
.use all what is culturaly implicit both orally and when writing
.use an appropriate body language
CULTURAL KNOWLEDGE - At the end of the course, you will be able to:
.find your way around Lyon and around the campus
.understand the principal aspects of the socio-cultural French ways such as social behaviours, student life rythm
.understand the news
.have a basic talk about the francophone world
.talk about different scientific fields

BIBLIOGRAPHY

A2 /B1 You will find a selection of resources available online at the following address https://
fle.satellite.insa-lyon.fr/content/pourquoi-travailler-en-autonomie

PRE-REQUISITES

B1 level