Subject name: Systems and Circuits	Code EC: DET09-D-CISY
Number of hours per student:	ECTS Number : 4
Reference Teacher: Philippe MARY	

Generalities

Objectives *(2000 characters)*

In this course, students will become familiar with machine learning techniques with a particular focus on their application in the telecommunications domain. In particular, students will be able to recognize a problem where supervised or unsupervised reinforcement learning can be applied. Students will be able to define an agent, a set of states and actions and a reward function to apply a reinforcement learning algorithm. They will be able to design a neural network, determine a suitable cost function and train it. They will be able to implement in Python the methods seen in class. In particular, they will know the PyTorch machine learning library and how to use its main features.

Description *(2000 characters)*

This course consists of two parts: one part on supervised and unsupervised learning approaches and one part on reinforcement learning. The first part will introduce machine learning in a general way, as well as classify the main problems concerned in three large categories (supervised, unsupervised and reinforcement learning). Then, the simplest techniques in supervised and unsupervised learning will be presented (classification, regression, clustering, dimension reduction). Finally, this first part will be concluded by an introduction to neural networks (architecture, optimization, examples). In the second part, the notion of Markovian decision process is introduced as well as that of a decision agent, with sets of states and actions and a reward function. From the definition of the state-value and action-state-value functions, the Bellman equation is proved. The Q-learning and SARSA algorithms are introduced. Finally we conclude with the Bandit algorithms as a special case of reinforcement learning algorithm.

Requirements *(2000 characters)*

Courses DET05-SPB, DET06-SSPB, DET07-DETIC

Course requirements and assessments

Teaching Language *(2000 characters)*

French or english

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 28h
TD:
TP: 12h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Cliquez ou appuyez ici pour entrer du texte.
One exam of 2 hours and one project in small group.

Bibliography

"Deep Learning", Ian Goodfellow, Yoshua Bengio and Aaron Courville

Contacts

Contacts *(2000 characters)*

Philippe.mary@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name: Radiofrequency and Antennas Devices	Code EC: DET09-D-DIRA
Number of hours per student:	ECTS Number : 4
Reference Teacher: Raphaël GILLARD	

Generalities

Objectives *(2000 characters)*

Give a complementary training about RF devices and antennas. Highlight the link between circuits properties and overall performance at system level. Study array antennas (theory, design, synthesis) and associated technologies. Give an overview of the use of periodic structures to control EM radiation. Introduce high-frequency methods for the study of large radiating apertures and scattering.

Description *(2000 characters)*

This module is made of two courses. The first one (RF devices) studies the impact of RF circuits defaults on the overall performance of a communication system. The lecture is followed by a lab showing the effect of high-power amplifier nonlinearities on the quality of a digital transmission. The second course is dedicated to antenna arrays and periodic structures. It also includes material about scattering and associated simulation approaches. A simulation lab illustrates practical aspects of antenna array design.

Requirements *(2000 characters)*

Microwave circuits; Digital Communications; Electromagnetism and Antennas. Specific knowledge about Keysight ADS and Matlab software tools.

Course requirements and assessments

Teaching Language *(2000 characters)*

French or english

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 30h
TD: 4h
TP: 8h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Cliquez ou appuyez ici pour entrer du texte.
Two 1h-examens (Antennas and Periodic Structures; RF devices and Scattering) + Lab tests

Bibliography

Microwave Engineering, POZAR,Wiley - "Antenna Theory", BALANIS, Wiley.

Contacts

Contacts *(2000 characters)*

Raphael.gillard@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name: Advanced Communication Systems	Code EC: DET09-D-SYCA
Number of hours per student:	ECTS Number : 4
Reference Teacher: Philippe MARY	

Generalities

Objectives *(2000 characters)*

The SYCA course aims to provide its audience with an introduction to state-of-the-art techniques in the areas of channel coding, multi-antenna communication techniques and spread spectrum systems. At the end of this course, students will be able to: recognize the structure of a Turbo code, describe the main steps of an iterative MAP decoding, characterize the structure of an LDPC code and implement a bit-flipping decoding algorithm. In spectrum spreading, we study the different techniques used, as well as the different codes implemented for spreading. Finally, we will illustrate these techniques through application examples. For multi-antenna communications, students will be able to: categorize the different multi-antenna techniques (time-space coding, channel formation, spatial multiplexing, SDMA) and know the different types of associated receivers (linear, non-linear, interference cancellation, etc). It will also be necessary to understand the specificities of channel models adapted to multi-antenna systems and to know how to analyze the capacity of these channels (channel rank, propagation eigenmodes). The course will seek to show the use of multi-antenna techniques in current standards (LTE, Wifi, etc.).

Description *(2000 characters)*

The course is divided into three parts: advanced channel coding, MIMO systems, spread spectrum systems. The a coding part contains the following elements: reminder on convolutional codes, Turbo codes (structure and decoding (structure and decoding). For the spread spectrum course, it includes five parts: principle, techniques, coding, sync applications. For the course on MIMO systems, the topics covered are: principles and definitions, MIMO capacity, t coding, beamforming, multi-user MIMO systems.
The course is divided into three parts: advanced channel coding, MIMO systems, spread spectrum systems. The a coding part contains the following elements: reminder on convolutional codes, Turbo codes (structure and decoding (structure and decoding). For the spread spectrum course, it includes five parts: principle, techniques, coding, sync applications. For the course on MIMO systems, the topics covered are: principles and definitions, MIMO capacity, t coding, beamforming, multi-user MIMO systems.

Requirements *(2000 characters)*

Courses DET05-SPB, DET06-SSPB, DET07-DETIC, DET07-CNUM1, DET07-RADIO1, DET08-CNUM2, DET08-RADIO2

Course requirements and assessments

Teaching Language *(2000 characters)*

French or English

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 30h
TD:
TP: 12h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Cliquez ou appuyez ici pour entrer du texte.
A exam of 4 hours and one project in small group

Bibliography

Contacts

Contacts *(2000 characters)*

Philippe.mary@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name: Processing and Architecture of Analog Electronic Systems	Code EC:DET09-D-TASE-ANA
Number of hours per student:	ECTS Number : 4
Reference Teacher: Erwan FOURN	

Generalities

Objectives *(2000 characters)*

Deepen knowledge and skills on microwave circuits and subsystems, dedicated technologies and associated simulation tools.

Description *(2000 characters)*

This module is divided into 2 parts. A first one (lectures, tutorials) will present advanced topologies, architectures and technologies used in integrated front-ends: passive and active circuits, printed antennas, Systems in Package (SiP), reconfiguration technologies, "smart antennas", reconfigurable active arrays, 3D additivie manufacturing and the main associated EM simulation techniques. The second one (practical lab) will be dedicated to the design of advanced circuits and antennas using commercial simulation softwares.
This module is divided into 2 parts. A first one (lectures, tutorials) will present advanced topologies, architectures and technologies used in integrated front-ends: passive and active circuits, printed antennas, Systems in Package (SiP), reconfiguration technologies, "smart antennas", reconfigurable active arrays, 3D additivie manufacturing and the main associated EM simulation techniques. The second one (practical lab) will be dedicated to the design of advanced circuits and antennas using commercial simulation softwares.

Requirements *(2000 characters)*

Microwave circuits; Electromagnetism and Antennas. Specific knowledge about Keysight ADS.

Course requirements and assessments

Teaching Language *(2000 characters)*

French or English

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 14h
TD: 6h
TP: 22h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Cliquez ou appuyez ici pour entrer du texte.
One 2h-examens + project evaluation

Bibliography

"Microwave Engineering", POZAR,Wiley - "Antenna Theory", BALANIS, Wiley.

Contacts

Contacts *(2000 characters)*

Erwan.fourn@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name: Processing and Architecture of Digital Electronic Systems	Code EC:DET09-D-TASE-NUM
Number of hours per student:	ECTS Number : 4
Reference Teacher: Jean-Christophe PREVOTET	

Generalities

Objectives *(2000 characters)*

Deepen knowledge and skills on digital systems, associated technologies and real-time management of these systems

Description *(2000 characters)*

This module is composed of 3 parts. The first part presents SoPC (System On Programmable Chip) architectures by reviewing current technologies as well as associated design methodologies. A second part deals with the real-time management of these circuits by focusing on the concept of embedded OS and the management of peripherals. The third part of the module consists of a 16-hour project implementing all the concepts acquired in class. The project concerns the design of a digital system implementing embedded processors and the management of various sensors (temperature, humidity, brightness, accelerometer, etc.)
This module is composed of 3 parts. The first part presents SoPC (System On Programmable Chip) architectures by reviewing current technologies as well as associated design methodologies. A second part deals with the real-time management of these circuits by focusing on the concept of embedded OS and the management of peripherals. The third part of the module consists of a 16-hour project implementing all the concepts acquired in class. The project concerns the design of a digital system implementing embedded processors and the management of various sensors (temperature, humidity, brightness, accelerometer, etc.)

Requirements *(2000 characters)*

Digital logic, Programmable Logic, C Language

Course requirements and assessments

Teaching Language *(2000 characters)*

French or English

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 14h
TD:
TP: 28h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Cliquez ou appuyez ici pour entrer du texte.
Exam + project evaluation

Bibliography

Contacts

Contacts *(2000 characters)*

Jean-christophe.prevotet@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name : Research and Innovation Culture	Code EC: DET09-I-MARS-CRI
Number of hours per student:	ECTS Number : 4
Reference Teacher : Raphaël GILLARD	

Generalities

Objectives *(2000 characters)*

Get familiar with research environment and practises. Discover regulatory and legal aspects, research work methodology. Participate in a project focused on the production of new scientific knowledge.

Description *(2000 characters)*

This module is made of three parts. The first one (CVM) addresses the general issue of IP and innovation (patent, publication, start-up creation). It is given by external experts on innovationa and value addition. The second one (MR) consists of a bibliographic work, done in small groups, under the supervision of a teacher providing the subject. A fictive journal paper has to be produced and an oral presentation given during an internal mini-conference. The third part (PRJ) is a scientific project, in small groups, aiming at providing a theoretical study supported by relevant simulations/modelizations.

Requirements *(2000 characters)*

English language. Scientific skills from other modules.

Course requirements and assessments

Teaching Language *(2000 characters)*

French or English

Teaching methods *(500 characters)*

Mainly autonomous work requiring a significant involvement.

Number of hours per course type: *(2000 characters)*

CM: 12h
TD:
TP: 9h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

1 written exam for CVM (1h). Evaluation of produced material (written paper and oral talk) for MR. Evaluation of produced material for PRJ.

Bibliography

Material produced by students in previous years (available in Moodle).

Contacts

Contacts *(2000 characters)*

Raphael.gillard@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name : Smart Networks	Code EC: DET09-M-SNET
Number of hours per student:	ECTS Number : 4
Reference Teacher: Matthieu CRUSSIERE	

Generalities

Objectives *(2000 characters)*

The module aims to give engineering students a culture on the subject of wireless systems and networks through a description of the main techniques used and their applications, with an emphasis on their physical layer.

Description *(2000 characters)*

The module is structured as follows:
- Introduction to the fundamental bases of wireless networks (mobile radio, local networks, core networks, etc.)
- Cellular networks and the associated transmission techniques from 1G to 5G (8H)
- Conference on emerging xG cellular technologies (2H)
- Network deployment in urban areas (Course + 8h practical work)
- WLAN/WPAN/WBAN local networks (4H)
- Fiber technologies for core networks (4H)
- Core and IP networks (course + 8H practical work)
- IoT communicating object systems (Course + 8H practical work)

Requirements *(2000 characters)*

Signal processing and Telecommunications training

Course requirements and assessments

Teaching Language *(2000 characters)*

French or English

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 30h
TD:
TP: 12h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Cliquez ou appuyez ici pour entrer du texte.
2 hour exam at the end of the module (Multiple Choice Questions exam type) + practical lab evaluation

Bibliography

Contacts

Contacts *(2000 characters)*

Matthieu.crussiere@insa-rennes.fr

Other information

Other information

Cliquez ou appuyez ici pour entrer du texte.

5th year E&T

Subject name : **Space Electronic Systems**	**Code EC: DET09-M-SPES**
Number of hours per student:	**ECTS Number : 4**
Reference Teacher : Renaud LOISON	

Generalities

Objectives *(2000 characters)*

The module aims to give a basic culture to engineering students on the wide subject of space electronic systems.

Description *(2000 characters)*

The module is organized as follows:
- Introduction to space systems (6h)
- Earth observation systems (8h)
- Satellite communications (2h)
- Architectures of radiofrequency systems (2h)
- Antennas: BFN and multibeam antennas (3h)
- Antennas: future technologies (4h)
- Radio astronomy and numerical aspects (4h)
- Fault tolerance of spatial digital systems (4h)
- Measurement and analysis of GNSS signals with USRP maps (10h practical work)

Requirements *(2000 characters)*

Electronics and Telecommunications training (low and high frequency analog electronics, digital electronics, signal processing for telecommunications)

Course requirements and assessments

Teaching Language *(2000 characters)*

French or English

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 33h
TD:
TP: 10h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

2 short exams (Multiple Choice Questions exam type) + practical lab evaluation

Bibliography

Contacts

Contacts *(2000 characters)*

Renaud.loison@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name : **Industrial project**	**Code EC: DET09-PROJ**
Number of hours per student:	**ECTS Number : 4**
Reference Teacher : Mickaël DARDAILLON	

Generalities

Objectives *(2000 characters)*

Carry out a technical project team and applying concrete scientific methods of project management. Enhance training through technical conferences.

Description *(2000 characters)*

1. The main objectives of these projects are to carry out scientific work requiring specific organizational efforts. The proposed topics involve reflection, literature and theoretical studies, experimental developments in the form of actions or concrete achievements. Students work in dedicated time slots and have free access to experimental resources including those of the IETR research laboratory "Institute of Electronics and Telecommunications of Rennes
The work of each group leads to a report and to an oral presentation. The idea of these projects relies in putting the students in a situation as close as possible to the industrial reality. They are sometimes carried out in the framework of collaborations with industry.

Requirements *(2000 characters)*

Course requirements and assessments

Teaching Language *(2000 characters)*

Project and deliverables can be done either in French or English

Teaching methods *(500 characters)*

This module involves a great deal of personal input.

Number of hours per course type: *(2000 characters)*

CM:
TD: 8h
TP:
PR:
CONF:
Autres:

Evaluation *(200 characters)*

One marks corresponding to the evaluation of the work that has been performed

Bibliography

Previous years reports.

Contacts

Contacts *(2000 characters)*

Mickael.dardaillon@insa-rennes.fr

Other information

Other information

5th year E&T

Subject name : System and Network Security	Code EC: DET09-M-SYNS
YNS	ECTS Number : 4
Reference Teacher : Jean-Christophe PREVOTET	

Generalities

Objectives *(2000 characters)*

The objective of this module is to present the issues and basic principles of the security of communicating systems..

Description *(2000 characters)*

The module is composed of three parts. The first part provides basic knowledge in computer and network security while illustrating the course with real use cases. The second part of the module gives the fundamentals in software security by focusing on embedded aspects. Finally, a third part of the module focuses on the hardware security of connected objects by presenting current attacks and planned countermeasures. Practical work will be carried out to implement the acquired concepts on embedded hardware platforms.

Requirements *(2000 characters)*

Basic Networks architecture, hardware architectures

Course requirements and assessments

Teaching Language *(2000 characters)*

French or English

Teaching methods *(500 characters)*

Number of hours per course type: *(2000 characters)*

CM: 24h
TD:
TP: 18h
PR:
CONF:
Autres:

Evaluation *(200 characters)*

MCQ -like exam + Lab evaluation

Bibliography

The Hardware Hacking Handbook, Jasper van Woudenberg and Colin O'Flynn, no starch press

Contacts

Contacts *(2000 characters)*

Jean-christophe.prevotet@insa-rennes.fr

Other information

Other information

5th year E&T

Nom de la matière : Allemand	**Code EC: EC-HUMF09-ALL**
Volume horaire total par étudiant: 21heures	**Nombre crédits ECTS :**
	1,5 ECTS
Responsable(s) : Cecile Hölzner-Jacques	

Généralités

Objectives, aims *(2000 caracters)*

Targeted skills:
Mastering a foreign language
Ability to communicate/progress/work in an international and intercultural context
Cultural openness
Communicating/interacting with others, working in a team
Working autonomously
German Level A1: Acquiring the basics of the German language. Be able to understand and hold a simple conversation about everyday life.
German Level A2-B1: Be able to communicate in German, acquire intercultural skills, demonstrate cultural openness. Work in a group on a project, speak up.
German Level B2/C1: Work in a group on a project, speak up, communicate in German, acquire intercultural skills, acquire basic scientific and technical vocabulary. Ask questions, become a responsible engineer, think about the world of tomorrow in an international context.

Description *(2000 caracters)*

Practising written and oral comprehension. Developing oral expression through exercises in small groups and whole-class discussions. Acquire everyday German vocabulary for daily life and professional life.
German Level A2-B1: Grammar revision, consolidate knowledge. Practise reading and listening comprehension using multimedia resources. Develop oral expression skills through small group exercises, presentations or whole class discussions. Prepare students to progress independently in languages. Preparing mobility.
German B2-C1: Practise reading and listening comprehension using multimedia resources. Acquire technical and scientific German vocabulary. Develop oral expression skills through small group exercises, presentations or whole class discussions. Use and improve German language skills in the context of a project. Preparing mobility.

Pré-requis *(2000 caractères)*

German Level A1: none

German Level A2-B1: mastery of the basics of German (A2), second foreign language at secondary school (B1)

German B2-C1: good language skills, first foreign language or bilingual class at secondary school, ABIBAC

Modalités du cours et des évaluations

Langue d'enseignement *(2000 caractères)*

Cliquez ou appuyez ici pour entrer du texte.

Modalités d'enseignement *(500 caractères)*

1.5–2 hours of classes per week.
IAutonomous study time: 14-16 hours Total: 35 hours. Students are encouraged to read German newspapers regularly and watch videos, series and films, in addition to the work assigned between sessions.

Volume horaire par type de cours : *(2000 caractères)*

CM :
TD : 19 hours for the first cycle, 21 hours for the second cycle.
TP :
PR :
CONF :
Autres :
Autonomous study time: 14-16 hours
7 hours of optional project work in the second cycle

Modalités d'évaluation / coefficient *(200 caractères)*

Continuous assessment, oral examination

Bibliographie

Bibliographie *(2000 caractères)*

MOODLE course page
Deutsch für Ingenieure, Maria Steinmetz/Heiner Dintera, VDI/Springer Vieweg, 2014
Deutsch Perfekt, periodical
online: Deutsche Welle, ARD, Der Spiegel, FAZ, die Zeit, das Handelsblatt, VDI (Verein Deutscher Ingenieure), Nachrichten, ZDF Logo
French-German dictionary le visuel, Editions de la Martinière
Übungsgrammatik für die Mittelstufe Hueber-Verlag
Na also! Waltraud Legros, Ellipses
multimedia resources

Contacts

Contacts *(2000 caractères)*

Cecile Hölzner-Jacques : cecile.holzner-jacques@insa-rennes.fr

Autres

Autres informations

Cliquez ou appuyez ici pour entrer du texte.

Subject name: ANGLAIS / TOEIC	Code EC: EC-HUM09-ANGL-TOEIC
Number of hours per student: 20 h	ECTS Number: 1.5
Reference Teacher: Philippe LE VOT	

Generalities

Objectives *(2000 characters)*

Improving communication skills in everyday life situations as well as in company and business context.
Obtaining or reinforcing the B2 level requested by the CTI.
Obtaining 800 score at the final TOEIC test.

Description *(2000 characters)*

Learning by doing : students will have to be able to speak and listen, write a document while showing they can solve problems, reason, convince and demonstrate in an articulate manner.
Expressing oneself accurately and fluently : students will engage in activities requiring creative and reactive skills such as debates, role-plays, individual oral Power Point presentations, projects, based on scientific topics and current events.

Requirements *(2000 characters)*

Not having already taken and passed the TOEIC test during the previous two years
B1/B2 level advised

Course requirements and assessments

Teaching Language *(2000 characters)*

Teaching methods *(500 characters)*

Each class lasts two hours and most classrooms are equipped with video and audio. A multimedia lab and computer rooms are also available for the students to work in a stimulating environment.

Teaching resources include press articles, audio and video documents (TV reports, extracts from films and series)as well as the Internet. B2 level tests are also taken throughout the course.

Number of hours per course type: *(2000 characters)*

CM:
TD: 20 heures
TP:
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Final mark based on : TOEIC score at final exam + attendance (more than 4 non justified absences result in 0/20 mark).

Bibliography

Bibliography *(2000 characters)*

English grammar in Use, Intermediate Edition (CUP)
Robert and Collins bilingual dictionary or Collins Cobuild

Contacts

Contacts *(2000 characters)*

Other information

Other information

5th year students who haven't already passed their TOEIC

INSA RENNES : 2025/2026

Course Name: ENGLISH

Course Code: EC-HUM09-ANGL-CONV

Total Student Workload: 10 hours

ECTS Credits: 1.5

Instructor(s): Philippe Le Vot

General Information

This course is intended for 5th-year students who have already obtained their TOEIC certification (B2 level required by the CTI). At the start of the module, students choose between two options:

• ECIU Courses (European online university). These allow students to register for courses delivered by our European university partners and compare different approaches to engineering.

• Audio or video project/challenge (production of an individual or group final product), based on a common theme that changes every year.

Description

The courses offered on the ECIU European platform cover a very wide range of specialities and allow our students to participate in micro-challenges, take courses taught by a European network of partner universities, and compare perspectives on the engineering world.

Prerequisites

• A strong command of the 3rd- and 4th-year English curriculum is required.

Teaching and Assessment Methods

Language of Instruction: English

Teaching Method: Self-directed learning. Students choose a module and validate it with the European university offering the course. This is carried out under the supervision and in collaboration with the internal ECIU team at INSA Rennes.

Course Type and Hours:

Tutorials (TD): 10 hours

Assessment:

The final grade is the grade awarded by the institution responsible for the selected module.

Bibliography

Only reference:

https://www.eciu.eu/

Contacts

plevot@insa-rennes.fr

Ellea.Lhermite@insa-rennes.fr (ECIU support at INSA)

INSA RENNES : 2025/2026

Course Name: ENGLISH

Course Code: EC-HUM09-ANGL-CONV

Total Student Workload: 10 hours

ECTS Credits: 1.5

Instructor(s): Philippe Le Vot

General Information

This course is intended for 5th-year students who have already obtained their TOEIC certification (B2 level required by the CTI). At the start of the module, students choose between two options:

• ECIU Courses (European online university). These allow students to register for courses delivered by our European university partners and compare different approaches to engineering.

• Audio or video project/challenge (production of an individual or group final product), based on a common theme that changes every year.

Description

The courses offered on the ECIU European platform cover a very wide range of specialities and allow our students to participate in micro-challenges, take courses taught by a European network of partner universities, and compare perspectives on the engineering world.

Prerequisites

• A strong command of the 3rd- and 4th-year English curriculum is required.

Teaching and Assessment Methods

Language of Instruction: English

Teaching Method: Self-directed learning. Students choose a module and validate it with the European university offering the course. This is carried out under the supervision and in collaboration with the internal ECIU team at INSA Rennes.

Course Type and Hours:

Tutorials (TD): 10 hours

Assessment:

The final grade is the grade awarded by the institution responsible for the selected module.

Bibliography

Only reference:

https://www.eciu.eu/

Contacts

plevot@insa-rennes.fr

Ellea.Lhermite@insa-rennes.fr (ECIU support at INSA)

Subject name: CHINESE LV2-LV3	**Code EC: EC-HUMF09-CHI**
Number of hours per student: 21 hours	**ECTS Number: 1,5**
Reference Teacher: Cécile Hölzner-Jacques	

Generalities

Objectives *(2000 characters)*

Targeted skills:

- Mastering a foreign language
- Ability to communicate/develop/work in an international and intercultural context
- Cultural openness
- Communicating/interacting with others, working in a team
- Working independently
- Acquiring the basics of the Chinese language, essential structures and vocabulary
- Comprehension, expression, pronunciation
- Using the language in everyday contexts.

Description *(2000 characters)*

Oral skills:
Corrective phonetics (pinyin system),
Listening to and analysing simple texts and complex sentences,
Oral exercises (learners with each other / learners with teacher)
Learning new characters (pronunciation and tone accentuation).

Written skills:
Theme/version
Written production of simple texts and complex sentences,
Learning and reinforcement of grammatical mechanisms and vocabulary for oral and written production,
Learning new characters (stroke order, keys),
Reading and analysis of texts, commentary on texts.

Requirements *(2000 characters)*

Chinese 1: None
Chinese 2: Completion of Chinese 1
Chinese 3: Completion of Chinese 2

Course requirements and assessments

Teaching Language *(2000 characters)*

Teaching methods *(500 characters)*

Reading lesson texts (in characters), rewriting new characters, exercises applying grammar points, lexical and morphological points, theme and version exercises...

Number of hours per course type: *(2000 characters)*

CM:
TD: 1h30
TP:
PR:
CONF:
Autres:

Evaluation *(200 characters)*

S1: Final mark
S2: Oral examination

Bibliography

Bibliography *(2000 characters)*

1. Chinese as spoken in China, Bernard Allanic, Presses Universitaires de Rennes, 2009
2. Contemporary Chinese, WU Zhongwei, Sinolingua, 2010
3. Experiencing Chinese, ZHANG Rumei, AI Xin, Higher Education Press, 2006
Chinese Language Method (Second Level), Zhitang Yang-Drocourt - Liu Hong – Fan Jianmin
Short Stories for Learning Mandarin Chinese, Zhang Xiaoli, 2025
Standard Course HSK Workbook, Jiang Liping
Other tools will complement these basic textbooks to provide students with a wide range of practical exercises.

Contacts

Contacts *(2000 characters)*

Other information

Other information

Learning Chinese isn't just about tones and characters. It's about connection — to a culture, to people, and to the stories that make language come alive.

Subject name: French foreign language	**Code EC: EC-HUMF09-FLE**
Number of hours per student: 21 hours (or 2 x 21 hours for the Exchange programme)	**ECTS Number: 1,5**
	3 credits for the Exchange
Reference Teacher: FOURE Dominique	

Generalities

Objectives *(2000 characters)*

The various activities in the FLE and FOS (French for Specific Purposes) programme aim to develop optimal language proficiency and the use of language as a cultural and intercultural vehicle, a tool for work and communication adapted to the context. Students will develop their autonomy through group work and individual work.
Targeted skills/humanities (SHS): ▪ Knowing oneself, managing oneself physically and mentally▪ Working, learning and developing independently▪ Interacting with others, working in a team▪ Demonstrating creativity, innovation and initiative▪ Acting responsibly in a complex world▪ Developing in a professional and social environment▪ Working in an international and intercultural
context

Description *(2000 characters)*

Level A1/A2
1- Language, culture and communication: Help learners feel comfortable in all everyday situations. Language learning is organised around observing how the language works, practising a variety of activities in class and carrying out projects in real or simulated contexts to promote autonomy.

2- Scientific and academic French: Facilitate integration into scientific studies, student life and social life.

Level B1/B2
1- Language, culture and communication: Help learners express themselves fluently in writing and orally on a wide range of general and specialised topics.
Key themes: Studying and living in France/ Understanding and exercising critical thinking in various fields: current affairs/history/art/science and technology, urban planning, the environment, etc.
Social sciences and humanities: socio-ecological transition, business and innovation.

2- Preparation for DELFB2 or DALFC1, compulsory French language diploma required to obtain an engineering degree**.**

Level B2/C1
1- Interculturality - Study of European and international current affairs and in-depth exploration of issues related to SHS
- Communicate and interact
- Decode intercultural references in speech, attitudes and behaviour
- Put one's values, beliefs and behaviour into perspective
- Integrate cultural diversity into group work

2- Professional French
- Prepare effectively for finding an internship or job
- Understand complex issues within the company
- Master societal, political, economic, environmental, ethical and philosophical aspects, etc.
- Act responsibly in the professional world

Requirements *(2000 characters)*

None
Courses range from beginner to advanced levels.
Each student will be placed in a group corresponding to their level and needs
- based on a test at the beginning of the year for new entrants
- based on the level acquired and assessed the previous year for existing students

Course requirements and assessments

Teaching Language *(2000 characters)*

Learners are trained and assessed on the five skills recognised by the Common European Framework of Reference for Languages (CEFR).

Teaching methods *(500 characters)*

Language, communication and intercultural skills are tailored to the target level and the needs of the group (indicated in the group code).

Number of hours per course type: *(2000 characters)*

CM:
TD:
TP:
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Continuous assessment in line with the skills to be validated: CE, CO, PE, PO
INSA student programme: 21 hours/semester (1.5 credits)
Exchange programme: Students studying for a semester at INSA Rennes have the opportunity to obtain a total of 4 credits
- 1 Language Project (7 hours/semester) = 1 ECTS
- 2 FLE courses (2X21 hours/semester) e.g. Language, Culture and Communication + Interculturality

Bibliography

Bibliography *(2000 characters)*

Materials selected by the teacher based on the level and objectives to be achieved

Contacts

Contacts *(2000 characters)*

Dominique.foure@insa-rennes.fr

Other information

Other information

https://fle.insa-rennes.fr/

Subject name: ITALIAN LV2-LV3	**Code EC: EC-HUMF09-ITA**
Number of hours per student: 21h	**ECTS Number: 1,5**
Reference Teacher: Cécile HÖLZNER-JACQUES	

Generalities

Objectives *(2000 characters)*

Targeted skills:
Mastering a foreign language
Ability to communicate/develop/work in an international and intercultural context
Cultural openness
Communicating/interacting with others, working in a team
Working independently

Level 1 beginner: Introducing Italian language and culture, expressing ideas in writing and orally.
Level 2 advanced beginner: By the end of the course, students should be able to converse and write in Italian.
Level 3 intermediate: Give students the opportunity to explore topics related to art, civilisation, literature and cinema in greater depth.

Description *(2000 characters)*

Oral expression and comprehension: reading the course material with phonetic and grammatical corrections with the teacher, reading the situations found in the text, watching films and reading literary texts and press articles.
Written expression and comprehension: doing the exercises in the text with particular attention to difficulties, summarising the situations without the text available and the films studied.

Requirements *(2000 characters)*

Beginner level: none.
Advanced beginner level A2: must have attended the beginner Italian course.
Intermediate level B1/advanced level B2: must have a good knowledge of the Italian language.

Course requirements and assessments

Teaching Language *(2000 characters)*

Italian language

Teaching methods *(500 characters)*

The course will cover:.
Grammar concepts;.
Exercises to understand basic linguistic mechanisms;.
Building vocabulary using keywords and translations;.
Presentations and discussions on given topics;.
Asking questions and knowing how to respond;.
Creating dialogues, stories, and discussions based on given keywords;
(All of this will be adapted to the average level of the course.)

1.5 hours of face-to-face lessons per week, 21 hours per semester.
Personal work: 14 hours Read the texts provided in the handouts; 7 hours create a dialogue or short story using the keywords provided and express yourself with them.

Number of hours per course type: *(2000 characters)*

CM:
TD: 21h
TP:
PR:
CONF:
Autres:

Evaluation *(200 characters)*

S1: Final mark
S2: Oral examination

Bibliography

Bibliography *(2000 characters)*

Loesher Archivio di Grammatica, https://italianoperstranieri.loescher.it/archivio-di-grammatica

Harraps, Italian Express Method, Vittoria Bowles and Paul Coggle

Texts taken from Italian novels, poems, essays, daily and weekly newspapers, and films by famous directors

Contacts

Contacts *(2000 characters)*

Paolo Procesi: Paolo.Procesi@insa-rennes.fr

Other information

Other information

Subject name: Japanese	**Code EC: EC-HUMF09-JAP**
Number of hours per student:	**ECTS Number: 1.5**
Reference Teacher: Cécile Hölzner-Jacques	

Generalities

Objectives *(2000 characters)*

Targeted skills:

Mastering a foreign language
Ability to communicate/develop/work in an international and intercultural context
Cultural openness
Communicating/interacting with others, working in a team
Working independently

Beginner level (A1):

-Awareness of specific features (phonetics, syntax)
-Discovering Japanese culture, traditions and customs
-Learning two writing systems (Hiragana and Katakana)
-Mastering spoken Japanese in everyday situations.

Intermediate level (A2):

- Introduction to ideograms (30-60 kanji)
- Reading simple texts (using manga, etc.)
- Writing simple texts
- Mastering spoken Japanese in everyday situations.

Advanced level (B1, B2):

- Learning kanji (60-200)
- Acquiring four skills (reading, listening, writing and speaking) for travelling and studying in Japan.

Description *(2000 characters)*

Description (2000 characters)
Level 1 beginner (A1):
- Improvement of Hiragana and Katakana
- Mastery of Japanese in everyday situations (Marugoto A1).
Lesson 3: Me_ Nice to meet you
Lesson 4: Me_ There are three of us in my family
Lesson 5: Food_ What kind of food do you like?
Lesson 6: Food_ Where shall we eat?
Lesson 7: The house_ It's a three-room flat
Lesson 8: The house_ What a beautiful room you have!

Lesson 9: Everyday life_ What time do you get up?
Lesson 10: Everyday life_ When are you available?
Level 2 Intermediate (A2):
- Continuation of the Marugoto textbook (Lessons 11 to 18)
- Learning new basic grammar points (past tense, potential tense, volitional tense, etc.)
- Improving and discovering new particles (で、に、から/まで, etc.)
- Discovering and learning 30-60 kanji
- Reading and writing simple texts
- Learning to communicate in everyday situations.

Intermediate level (B1, B2):

- Reading manga
- Acquiring four skills (reading and listening comprehension, writing and speaking).

Requirements *(2000 characters)*

Beginner level A1: none.
Beginner level A2: completion of beginner level A1.
Intermediate/advanced level: completion of beginner levels A1/A2.

Course requirements and assessments

Teaching Language *(2000 characters)*

Teaching methods *(500 characters)*

Teaching takes the form of tutorials. Each session consists of an explanation of concepts, which are then illustrated with examples and conversation exercises in which the students participate.

Number of hours per course type: *(2000 characters)*

CM:
TD:21h
TP:
PR:
CONF:
Autres:

Evaluation *(200 characters)*

A1
S1 and S2: Final mark

A2 and B1
S1: Final mark
S2: Oral examination

Bibliography

Bibliography *(2000 characters)*

Level 1 beginner (A1): Margoto A1, Japan Foundation, 2013, Japan.

Level 2 beginner (A2): Margoto A2, Japan Foundation, 2014, Japan.

Contacts

Contacts *(2000 characters)*

Other information

Other information

Subject name: Intercultural Modul	**Code EC: EC-HUMF09-LV2-OI**
Number of hours per student: 21h par semestre	**ECTS Number: 1.5**
Reference Teacher: Cécile Hölzner-Jacques	

Generalities

Objectives *(2000 characters)*

The course aims to develop students' fluency in both written and spoken communication while fostering philosophical reflection. It not only enhances reading, listening, and expressive skills but also cultivates critical thinking and confident public speaking. Particular emphasis is placed on rigorous reasoning, clear argumentation, and the ability to connect philosophical inquiry with linguistic precision.

Description *(2000 characters)*

Each semester is devoted to a specific philosophical concept. For the first semester of 2025, the theme is *violence*.
The course is divided into two distinct parts. The first part focuses on language development. Each session begins with a warm-up activity designed to encourage oral participation and group interaction. Students engage in creative writing exercises — such as recounting a memory or imagining a story — to stimulate imagination and improve expressive skills. Regular reading of newspaper articles helps strengthen reading comprehension, pronunciation, and vocabulary.
The second part of the course is dedicated to project work, which constitutes the final graded assignment. Through these projects, students synthesize language practice and philosophical reflection, applying both to a concrete and personally meaningful topic.

Requirements *(2000 characters)*

Students should be able to express themselves in English with a reasonable degree of confidence. Mistakes in grammar or pronunciation are not a problem, but a solid foundation in vocabulary and basic grammar is necessary to follow the course. The class usually includes both bilingual students and others with more limited proficiency, so the activities are designed to allow everyone to participate meaningfully and progress at their own pace.

Course requirements and assessments

Teaching Language *(2000 characters)*

The course is conducted primarily in English, although French may occasionally be used for clarification or discussion when necessary.

Teaching methods *(500 characters)*

This is not a traditional lecture-based course but an interactive class built around students 'interests. It is designed as a space for expression and reflection. Written and video materials are regularly used, and students are encouraged to take an active role through role-playing activities and short theatrical performances.

Number of hours per course type: *(2000 characters)*

CM:
TD: 20 h par semestre
TP:
PR:
CONF:
Autres:

Evaluation *(200 characters)*

Assessment is based on attendance and participation, but mainly on a creative end-of-term project demonstrating linguistic skills and critical thinking, completed individually or in groups

Bibliography

Bibliography *(2000 characters)*

Books

Camus, Albert. *The Stranger*. Translated by Stuart Gilbert. New York: Vintage Books, 1942.
Dostoevsky, Fyodor. *Crime and Punishment*. Translated by Constance Garnett. New York: Modern Library, 1866.
Flock, Elizabeth. *The Furies: Women, Vengeance, and Justice*. New York: Harper, 2024.
Malm, Andreas. *How to Blow Up a Pipeline: Learning to Fight in a World on Fire*. London: Verso Books, 2021.
Manne, Kate. *Down Girl: The Logic of Misogyny*. Oxford: Oxford University Press, 2017.
Motz, Anna. *If Love Could Kill: The Myths and Truths of the Women Who Commit Violence*. New York: Knopf, 2024.
Thoreau, Henry David. *Civil Disobedience*. Boston: David R. Godine, 1849.
Zinn, Howard. *A People's History of the United States*. New York: Harper & Row, 1980.

Articles and Essays

King, Martin Luther, Jr. "Letter from Birmingham Jail." April 16, 1963.
Schwartz, Alexandra. "When Women Commit Violence." *The New Yorker*, 2024.
Zinn, Howard. "The Problem is Civil Obedience." Speech delivered at Johns Hopkins University, Baltimore, November 1970.

Films and Television

Bong Joon-ho, dir. *Parasite*. Seoul: Barunson E&A, 2019.
Coen, Joel, and Ethan Coen, dirs. *Fargo*. Los Angeles: PolyGram Filmed Entertainment, 1996.
Coen, Joel, and Ethan Coen, dirs. *No Country for Old Men*. Los Angeles: Miramax Films, 2007.
Demme, Jonathan, dir. *The Silence of the Lambs*. Los Angeles: Orion Pictures, 1991.
Fincher, David, dir. *Gone Girl*. Los Angeles: 20th Century Fox, 2014.
Fincher, David, dir. *The Girl with the Dragon Tattoo*. Culver City: Columbia Pictures, 2011.
Fincher, David, dir. *Zodiac*. Los Angeles: Paramount Pictures, 2007.
Gilligan, Vince, creator. *Breaking Bad*. Los Angeles: AMC, 2008–2013.
Kelly, Richard, dir. *Donnie Darko*. Los Angeles: Newmarket Films, 2001.
Lanthimos, Yorgos, dir. *The Killing of a Sacred Deer*. London: A24, 2017.
Lynch, David, and Mark Frost, creators. *Twin Peaks*. Los Angeles: CBS Television Distribution, 1990–1991, 2017.
Martin, Steve, and John Hoffman, creators. *Only Murders in the Building*. Los Angeles: Hulu, 2021–.
Miller, George, dir. *Furiosa: A Mad Max Saga*. Burbank: Warner Bros., 2024.
Miller, George, dir. *Mad Max: Fury Road*. Burbank: Warner Bros., 2015.
Penhall, Joe, creator. *Mindhunter*. Los Gatos: Netflix, 2017–2019.
Pizzolatto, Nic, creator. *True Detective*. Los Angeles: HBO, 2014.
Tarantino, Quentin, dir. *Kill Bill: Vol. 1* and *Kill Bill: Vol. 2*. Los Angeles: Miramax Films, 2003–2004.
Wan, James, dir. *Saw*. Santa Monica: Lions Gate Films, 2004

Contacts

Contacts *(2000 characters)*

Other information

Other information