

Génie civil

Research project

IDENTIFICATION

CODE : GCU-5-S1-EC-PIRD30
ECTS : 30.0

HOURS

Lectures : 0.0 h
Seminars : 10.0 h
Laboratory : 0.0 h
Project : 0.0 h
Teacher-student
contact : 10.0 h
Personal work : 740.0 h
Total : 750.0 h

ASSESSMENT METHOD

The general outcomes are, at least:
- a literature review;
- a final report;
- an oral defense.

Specific expected deliverables may be:

- experimental set-up;
- database;
- model;
- software;

TEACHING AIDS

Electronic documents available

TEACHING LANGUAGE

English

CONTACT

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AIMS

This module is part of the course unit GCU-S9-PIRD-30 and contributes to:

Competences in Engineering Science:

- A1- Analyze a real or virtual system [or problem] [level 3]
- A2- Operate a model of a real or virtual system [level 3]
- A3- Implement an experimental approach [level 3]
- A5- Process data [level 3]
- A6- Communicate a scientific analysis or approach [level 3]

Competences in Humanities, Documentation and Physical and Sports Education:

- B2- Work, learn, progress autonomously [level 3]
- B3- Interact with others, work as a team [level 3]

Competences specific to the specialty:

[depend on the research laboratory that hosts the R&D project]

Mobilizes the following competences:

- B4- Demonstrate creativity, innovate and undertake

Allows the student to work and be evaluated on the following knowledge:

- knowledge in civil engineering or urban planning, specific to the field of the R&D project;
- even knowledge in related fields;

Allows the student to work and be evaluated on the following abilities:

- contribute effectively to the organization of the R&D study, that is to say: show initiative, work autonomously, work as a team, contribute to the project management (organization and animation of meetings, reports ...), check the relevance of the work with the tutor;
- contribute effectively to the scientific approach of the study, that is to say: reformulate questions, translate engineering problems into questions and hypotheses of research, co-build a study process;
- conduct and use a literature review, support its research on sufficiently numerous and relevant sources and correctly cited in the text and in the list of references, evaluate these sources, compare them;
- produce original results (method, model, experimental device, results of experiments ...) and know how to exploit them, evaluate them, define perspectives;
- communicate effectively and rigorously orally;
- communicate effectively and rigorously with a report.

CONTENT

The PIRD project is supervised by one (or two) faculty member(s) within one of these five research axes:

- Heat & Mass Transfers in Buildings;
- Materials and Structures;
- Soils, Geo-materials;
- Urban Techniques & Society [a high level in French can be required for this domain];
- Urban Water Management.

Projects generally deal with engineering problems defined by faculty members together with industrial partners.

For the academic exchange students, please contact the departemental coordinator upon academic exchange acceptance notification

BIBLIOGRAPHY

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- Couture M., Fournier R.-P. (sous la direction de) [1997] La recherche en sciences. Guide pratique pour les chercheurs. Paris : De Boeck Université, 250 p.
- Pagé, J., Boisclair, G., Mathieu, R. [1998] Guide des sciences expérimentales. Méthodes et démarches. Paris : De Boeck Université, 197 p.
- Walliser, B. [1977] Systèmes et modèles. Paris : Seuil.
- Boudia, D., Nadji, F. [2012] Rédiger et citer des références bibliographiques. [En ligne]. Lyon (France) : Institut National des Sciences Appliquées. Disponible sur [consulté le 01/10/2014]: <http://referencesbibliographiques.insa-lyon.fr/sites/refbibli.insa-lyon.fr/files/RefBibli.pdf> .
- Butler, A. [2006] Comment rédiger un rapport ou une publication scientifique ? [En ligne]. Lausanne(Suisse) : Ecole Polytechnique Fédérale de Lausanne. Disponible sur [consulté le 01/10/2014] : <http://ecos.epfl.ch/files/content/sites/ecos/files/Teaching%20material/Comment%20rediger%20v2.2.pdf> .

PRE-REQUISITE

M1 level in the field of the research project.

Application has to be validated by the departmental coordinator of the international mobility.

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