

## Faculty of Economic, Social and Political Sciences



### INGE1314 Technological Research and Development

[80h] 8 credits

**Teacher(s):** Anne-Marie Anckaert, Pierre Godard, Hervé Jeanmart, David Johnson, Benoît Macq, Bernard Nysten  
**Language:** French  
**Level:** First cycle

#### Aims

This course aims to give students the technological basics in the fields of energy and the environment, electronics and telecommunications, materials and processes in the chemical and mechanical industry and up to date mechanisms to help them understand the scientific jargon used and collaborate and dialogue with specialists in these fields. This course also aims to give students the necessary means to carry out a practical project.

#### Main themes

The course is divided into 4 parts.

The first part is an introduction to the principal concepts of thermodynamics; heat and energy transfer and key issues surrounding the environment.

The second part is devoted to the study of electric circuits, integrated circuit technology, key concepts in analogue and digital electronics and basic concepts and techniques in telecommunications, including network architecture.

The third part defines the basic concepts and tools in the material and process sciences and outlines the major steps involved in taking a material from its raw state to finished product; particular stress is put on the relations between synthetic processes and the structure and properties of the resulting materials.

The fourth part gives students training in statics, an introduction to materials resistance and the most common mechanisms, such as those used in car design.

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite: The Physics and Chemistry courses taught in BAC1 and BAC2 or equivalent.

Evaluation: Written examination during the examination session.

#### Other credits in programs

<b>INGE13BA</b>	Troisième année de bachelier en ingénieur de gestion	(8 credits)	Mandatory
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