

Master of Engineering Degree



POSITIONS

FIELDS OF ACTIVITTY

Our **Building Energy-Maintenance and Safety (BEMS) Engineers** provide the internal environmental conditions that enable business processes, all along the **building life cycle**, to function at an optimum level while providing comfort, health, welfare and safety conditions for occupants. They understand how the **engineering, operating and maintaining services** influence the **performances of buildings**, such as **energy efficiency.** 

The BS designers key objective is the trouble-free use of the engineering services of any **property operator** both in terms of economic, reliable performance and ensuring that legislation is complied with. They use **risk assessment methods** allowing to anticipate and mitigate the impact of business, design, operation and disposal risks.

The BS engineers have the ability to produce a maintenance contract. They carry out commissioning and testing to ensure that the design intent is achieved in practice. They also determine how to control the building services, the performance of any engineering installation. They are able to implement the maintenance strategy. They have the ability to perform condition surveys and maintenance audits activities.



## **BUILDING SERVICES AND SAFETY ENGINEERING**

Director of Technical and Security Services – Head of Technical Project Management and Supervision – Building Site supervisor – Project Manager – Building Manager – Infrastructure Operations Supervisor – Facility Management Engineer – Consulting Engineer in Facility Operation - QSE engineer – Head of Operations – Fire Safety Manager – Project Manager– Head of Risk Management and Prevention Department – HSE expert – Work Safety Project Manager

### FACILITIES ET PROPERTY MANAGEMENT

Multitechnical Services – Property management – Building site supervision and organisation – Consultancy – Business center management – Commercial real estate management: shopping malls, conference center, exhibitions – Management of catering patrimonial assets – Banking

- Construction inspection Hospital Security Department
- Risk management and prevention consulting Large

industrial and commercial group building management – Regional Authorities

Our graduates can work as **head of fire safety**; the school is authorised to issue **SSIAP 3 certification** (Security Services for Emergencies and Personal Assistance, level 3) required for high-rise buildings. They are able to **manage** risks, **organise** prevention, **supervise** safety department organisation and **design** crisis management processes.

# More information on www.polytech-angers.fr

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# CURRICULA





#### 3RD YEAR General courses

English – German or Spanish – Sports – Company Economics – Financial Analysis and Accounting – Building Cost Expertise – Computer Network – Communication – Organisational Sociology

#### Fundamentals in Engineering

Quality - Projects - Hygiene and Health - Applied Statistics - Design of Experiments

#### Building Performance

Geotechnical engineering – Safety and Durability of Buildings – Construction Materials – CAD – Building Disorders – Building Site Safety – Fire Protection Fundamentals – Finishing works/Installation

#### Energy, fluids, environment

HVAC Engineering – Electricity – Thermal Building – Functionality, Comfort – Acoustics – Classified Installations for Environmental Protection - Electrical Risks – Waste Management – Electricity Distribution – Low Voltage Systems – Thermal insulation for building

#### Internship abroad (3 months)

#### 4TH YEAR General courses

English – German or Spanish – Project Planning – Sports – Communication – Financial Analysis -Building Cost Estimates

#### Maintenance and Safety Engineering

Functional analysis – Ecodesign – Life Cycle Analysis – Building Rehabilitation Techniques – Commissioning – Computer Assisted Property Management – Risk Analysis – BIM Management – Data Analysis – Risk Management – Fire Modelling – Fire Origin Investigation – Industrial Risks – Environmental Risks – Performance Guarantee – Enhanced Building Performance – Smart Buildings – Continued Activity Planning – CBRN risks – Operation Planning and Safety – Case study

#### Management and Law

Contract law – Public Procurement – Human Resources Management – Contract Requirements – Quality Audits – Customer Satisfaction

#### Steering Tools

Service  $\widetilde{\mathsf{Q}}\mathsf{uality}$  –  $\mathsf{Q}\mathsf{ualification}$  and standards – Energy Manager – Facility Management – Company Policy

Internship (3-4 months)

# 5TH YEAR 6 6 9





# **2 SPECIALISATION PROGRAMMES**

# Real Estate Enhancement and Sustainability

Improvement and Performance – Building Assistance - Sustainable Social Housing – Property Management – Contract and legal Framework – Real Estate Information System – Assets and Cost Management – Maintenance Project

# Operational Risk Management

Security Technical Elements – Fire Safety Engineering – Fire Origin Investigation – Safety of Manufacturing Processes – Improved Safety in Building Operation – Human Reliability – Safety Regulations – Safety-related Documents – Implementation of a Culture of Safety – Safety Project

## **COMPANIES THAT HAVE RECRUITED OUR ENGINEERS:**

Artelia, Eiffage Energies, Apsys, SPIE, Savills, Quadrim Atlantique, BNP Paribas Real Estate, Apave, Unibail Rodamco, CBRE...



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