

---

# ENGINEERING PROGRAMME

2024-2025

Year 3

---

Professional Option  
Engineering and digital sciences  
for art, culture and heritage

OP INPACT

---

PROGRAMME SUPERVISOR

Florent LAROCHE



ENGINEERING - OP INPACT

# Autumn Semester

---

Course unit	ECTS Credits	Track	Course code	Title
UE 92	4	Core course	INPACTS9 PRINPACTS9	Engineering and digital sciences for art, culture and heritage 1 Project S9

# Spring Semester

---

Course unit	ECTS Credits	Track	Course code	Title
UE 102	1	Core course	INPACTS10 PRINPACTS10	Engineering and digital sciences for art, culture and heritage 2 Project S10

## ENGINEERING - OP INPACT

Year 3 - Autumn Semester - Course Unit 92

# Engineering and digital sciences for art, culture and heritage 1 [INPACTS9]

LEAD PROFESSOR(S): Florent LAROCHE

### Requirements

### Objectives

Objectives:

- The engineer where he/she is least expected
- Discover the world of art and entertainment from the engineering perspective
- Discover history, heritage and archeology from the engineering perspective
- How to combine human sciences and engineering sciences: methods, tools, languages etc.

Skills developed:

- a common professional vocabulary in the field of digital culture (tools, method, epistemology...)
- major skills of the Ecole Centrale skills reference framework = theme 1 (Business and innovation) and theme 3 (design and implementation of transdisciplinary projects)

Career opportunities in:

- Cultural institutions: museums, theatres
- Research laboratories
- Production or engineering companies
- Private companies specializing in media or heritage

### Course contents

Teaching methods:

- Interdisciplinary approach through the creation of interdisciplinary teams: Centrale Nantes, faculty of Arts, Fine Arts Colleges etc. The course is not about creating new technology and / or start-ups in the digital age, but rather understanding the other disciplines to allow for better integration into the fields of art, culture and heritage.
- Examples of technical topics covered: digital archeology, virtual reality, user experience, museography, 3D scanning, Text Encoding Initiative etc
- Training in business methodology and in the management of cultural projects, feedback and project-based learning
- Modules taught in conjunction with partner schools and laboratories:
  - o Master in &guil;Mediation, expertise and cultural development&guil; - dual diploma programme taught by Nantes Fine Arts School and the University of Nantes
  - o Seminar in partnership with ITEM Paris - 1 afternoon / month
  - o Seminar with the François Viète Center for the History of Science and Technology - weekly
- Institutional and industrial partners: University of Nantes, Local Authority Department of Culture, Voyage à Nantes, Stereolux, MG Design, 100 million pixels, liber-D, AMG Fechoz, Museums, RMN, MSH etc
- Planned visits and discovery of cultural sites: Arc'Antique laboratory, Nantes history museum, Nantes theatre, Scopitone, Cie La Machine ...
- Feedback from: BE theatre engineer, stage show project engineer, instrument-maker engineer, photographer engineer etc

Practical arrangements:

- 20 students maximum, Master level
- 96 teaching hours
- 40 project hours
- Place = Centrale Nantes or offsite depending on the interventions (MSH, Beaux-Arts ...)
- NB courses will be taught in French only. An excellent command and understanding of the French language is mandatory.

## Course material

---

## Assessment

---

Individual assessment: EVI 1 (coefficient 1.0)

LANGUAGE OF INSTRUCTION	ECTS CREDITS	LECTURES	TUTORIALS	LAB	PROJECT	EXAM
French	3	51 hrs	17 hrs	0 hrs	0 hrs	2 hrs

## ENGINEERING - OP INPACT

Year 3 - Autumn Semester - Course Unit 92

### Project S9 [PRINPACTS9]

*LEAD PROFESSOR(S): Florent LAROCHE*

#### Requirements

---

#### Objectives

---

INPACT project.

More information: <https://www.ec-nantes.fr/engineering-programme-diplome-dingenieur/course-specialisations-yrs-23/engineering-and-digital-sciences-for-art-culture-and-heritage>

#### Course contents

---

#### Course material

---

#### Assessment

---

Collective assessment: EVC 1 (coefficient 1)

LANGUAGE OF INSTRUCTION	ECTS CREDITS	LECTURES	TUTORIALS	LAB	PROJECT	EXAM
French	1	0 hrs	0 hrs	0 hrs	20 hrs	0 hrs

## ENGINEERING - OP INPACT

Year 3 - Spring Semester - Course Unit 102

# Engineering and digital sciences for art, culture and heritage 2 [INPACTS10]

LEAD PROFESSOR(S): Florent LAROCHE

### Requirements

### Objectives

Objectives:

- The engineer where he/she is least expected
- Discover the world of art and entertainment from the engineering perspective
- Discover history, heritage and archeology from the engineering perspective
- How to combine human sciences and engineering sciences: methods, tools, languages etc.

Skills developed:

- a common professional vocabulary in the field of digital culture (tools, method, epistemology...)
- major skills of the Ecole Centrale skills reference framework = theme 1 (Business and innovation) and theme 3 (design and implementation of transdisciplinary projects)

Career opportunities in:

- Cultural institutions: museums, theatres
- Research laboratories
- Production or engineering companies
- Private companies specializing in media or heritage

### Course contents

Teaching methods:

- Interdisciplinary approach through the creation of interdisciplinary teams: Centrale Nantes, faculty of Arts, Fine Arts Colleges etc. The course is not about creating new technology and / or start-ups in the digital age, but rather understanding the other disciplines to allow for better integration into the fields of art, culture and heritage.
- Examples of technical topics covered: digital archeology, virtual reality, user experience, museography, 3D scanning, Text Encoding Initiative etc
- Training in business methodology and in the management of cultural projects, feedback and project-based learning
- Modules taught in conjunction with partner schools and laboratories:
  - o Master in &guil;Mediation, expertise and cultural development&guil; - dual diploma programme taught by Nantes Fine Arts School and the University of Nantes
  - o Seminar in partnership with ITEM Paris - 1 afternoon / month
  - o Seminar with the François Viète Center for the History of Science and Technology - weekly
- Institutional and industrial partners: University of Nantes, Local Authority Department of Culture, Voyage à Nantes, Stereolux, MG Design, 100 million pixels, liber-D, AMG Fechoz, Museums, RMN, MSH etc
- Planned visits and discovery of cultural sites: Arc'Antique laboratory, Nantes history museum, Nantes theatre, Scopitone, Cie La Machine ...
- Feedback from: BE theatre engineer, stage show project engineer, instrument-maker engineer, photographer engineer etc

Practical arrangements:

- 20 students maximum, Master level
- 96 teaching hours
- 40 project hours
- Place = Centrale Nantes or offsite depending on the interventions (MSH, Beaux-Arts ...)
- NB courses will be taught in French only. An excellent command and understanding of the French language is mandatory.

## Course material

---

## Assessment

---

Individual assessment: EVI 1 (coefficient 1)

LANGUAGE OF INSTRUCTION	ECTS CREDITS	LECTURES	TUTORIALS	LAB	PROJECT	EXAM
French	0.5	23 hrs	0 hrs	0 hrs	0 hrs	2 hrs

# ENGINEERING - OP INPACT

Year 3 - Spring Semester - Course Unit 102

## Project S10 [PRINPACTS10]

LEAD PROFESSOR(S): Florent LAROCHE

### Requirements

### Objectives

INPACT project.

More information: <https://www.ec-nantes.fr/engineering-programme-diplome-dingenieur/course-specialisations-yrs-23/engineering-and-digital-sciences-for-art-culture-and-heritage>

### Course contents

### Course material

### Assessment

Collective assessment: EVC 1 (coefficient 1)

LANGUAGE OF INSTRUCTION	ECTS CREDITS	LECTURES	TUTORIALS	LAB	PROJECT	EXAM
French	0.5	0 hrs	0 hrs	0 hrs	20 hrs	0 hrs