



Project funded
by the European Union



European Leadership for Safety Education

University Master Module Development

January 2023

Introduction

Since 2019, Université Côte d'Azur (UCA) has been coordinating a European Project ELSE (European Leadership for Safety Education), funded by the European Commission (DG INTPA), aiming at the development and implementation of a Master level University Diploma in the field of leadership for safety, targeting middle career professionals in the nuclear sector. The project also includes an action aiming to disseminate the ELSE syllabus to Master-level university students, through the setting up of partnerships between UCA and interested EU universities.

Information about the ELSE project and the ELSE syllabus can be found at <https://univ-cotedazur.eu/european-leadership-for-safety-education>. The ELSE syllabus was elaborated by an international team of renowned academics and nuclear sector experts in the fields of risk management, organizational studies and leadership for safety, based on the results of the ELSE International Scientific Workshop. This workshop took place at Université Côte d'Azur in Nice on January 22-24, 2020. The ELSE scientific workshop report is available on the ELSE website [via this link](#). To facilitate the in-depth learning, the ELSE training involves three-phases, spread over a 9-month period: the MOOC, the face-to-face session, and a personal tutored project.

The purpose of this note is to present the partnership that UCA proposes to develop with 3 EU partner universities, based in different countries, in order to make available to their students, as an option, a Master level module on leadership for safety, based on the ELSE syllabus, of around 75 to 90 hours. This Master module would be of particular interest for engineering students aiming for a career in the nuclear sector, or in other sectors (such as, for example, transports, oil and gas, chemistry) characterised by the presence of many hazards, and by strictly regulated operating processes.

ELSE Master Module Content

Whereas many leadership courses are based on the development of personal skills aiming at enhancing individual capacity to influence others, The ELSE educational approach is based on a concept of leadership for safety as “a process of influencing behaviour, so it meets the expectations of safety management”. Hence, the overarching objective is to provide managers and future managers, either in industries or in regulatory organizations, with relevant knowledge enabling them to develop both their capabilities as safety managers and their legitimacy as safety leaders, within a complex organisation structure.

As the process of influence is embedded in an organizational context, the ability to exercise leadership in the context of set work processes depends on the understanding of the expectations of safety management, the organizational dynamics and the process of influence itself (i.e., the leadership process).

The proposed Master module aims to familiarise students with the above three themes (i.e., safety management, organizational dynamics and leadership), which are essential to the development and implementation of effective leadership for safety. The module will be mainly based on the ELSE MOOC entitled "Management and Leadership for Safety", which develops the three themes mentioned above and identifies the key concepts and challenges for each of them. This MOOC is composed of 4 units. Units 1&2 introduce the key concepts; units 3&4 the key challenges. The MOOC duration is estimated to be 60 hours of individual personal work.

The following table details the key concepts presented in Units 1 and 2:

Unit 1	Management and Leadership for Safety: Key Concepts - part 1
1	Managing safety: an evolving problematic
2	Risks and Safety: a technical approach
3	Organizational structure and design
Unit 2	Management and Leadership for Safety: Key Concepts - part 2
1	Safety culture
2	Leadership
3	Fostering learning in organizations: knowledge and learning
4	International nuclear safety standards

The following table details the key challenges presented in Units 3 and 4:

Unit 3	Management and Leadership for Safety: Key Challenges - part 1
1	Management of paradoxes
2	Ethics and Risk Management
3	Building high reliability organizations: from anticipation to resilience
Unit 4	Management and Leadership for Safety: Key Challenges - part 2
1	Dealing with uncertainty in a collective manner: collective cognition
2	Individual factors of dealing with uncertainty
3	Uncertainty, complexity, and organizational limits – implications for safety
4	Leadership for safety in day-to-day practices

In the frame of the Master module, the MOOC will be accompanied by face-to-face or online training sessions, which will help deepen the discussions and help the students assimilate knowledge of the different concepts and challenges.

ELSE Master Module Structure

UCA proposes to partner universities to develop a Master module of approximately 90 hours (equivalent to 3 ECTS¹) composed by:

- 60 hours of the ELSE MOOC

¹ European Credit Transfer and Accumulation System (ECTS)

- 2 or 3 training sessions of 6 hours each. **These training sessions will be adapted to particular Master’s program in coordination with the partner university.** Members of the ELSE pedagogical team will be available to contribute to these training sessions, in cooperation with the partner university faculty.
- The module design will thus be co-constructed with Director of the Master’s program from the partner university.

For example, the design could be as following:

Module’s presentation	Unit 1	Unit 2	Debriefing	Unit 3	Unit 4	Selected theme	Selected theme
3h	15h	15h	2h+2h by group	15h	15h	6h	6h
Online	Online	Online	Online	Online	Online	F2F	F2F

The design of the ELSE MOOC’s units and the training sessions is modular, allowing for a personalized design of a Master’s module (MOOC units and training sessions) adapted to the partner university’s expectations and needs.

University partnership development

A partnership agreement will be developed in cooperation between each interested university and UCA, on the following basis:

- UCA will provide free access to the ELSE MOOC (including its future revised versions, in the English language). Each student will however have to pay a small fee to obtain access to the MOOC and its on-line certification system (currently 60€).
- Upon request from the Director of the partner university Master’s program, UCA can participate in the design of the module, and suggest some lecturer(s) from the ELSE pedagogical team to complement the partner university’s own pedagogic team, for the first year of implementation of the Module. For further years, the partner university may liaise directly with the ELSE lecturer(s) in case their contribution would further be needed.
- The Partner university will seek the appropriate academic accreditation of the module, and will introduce the module within the relevant Master program for at least one academic year.
- The partner University may translate the ELSE pedagogical materials into other languages, as required. However, the translation of MOOC contents would require a specific agreement with UCA, and with INSA (University of Toulouse, France), which operates the online platform on which the MOOC is hosted.

- The Partner university will cover all costs related to the contribution of ELSE lecturers according to current good practice.
- During the period of validity of the Agreement (to be decided between partners, to cover a minima one academic year of implementation of the module), the partner university will provide to UCA the key information elements about the Module implementation (Module accreditation process, number of students, academic evaluation results, etc.). The partnership agreement may be prolonged as necessary, as required by the signatories.

The time framework of the ELSE project requires a signature of the partnership agreement before 31 august 2023, formalising the partners' joint intention to cooperate towards the implementation of a ELSE-based leadership for safety Master module. The first Module implementation should take place in the academic year 2023/2024, or the following one at the latest.

Please do not hesitate to contact UCA for any further information and to develop the module adapted to your Master's programme (UCA contact : Natalia Jubault Krasnopevtseva natalia.krasnopevtseva@univ-cotedazur.fr). A more detailed presentation of the ELSE training can be found in the following appendix:

Appendix 1: ELSE University Diploma Presentation

ELSE Training Content

The ELSE training content was developed by an international team of renowned academics and nuclear sector experts, based on the ELSE International Scientific Workshop. This workshop took place in Nice on January 22-24, 2020. The ELSE scientific workshop report is available on the ELSE website (<https://univ-cotedazur.eu/european-leadership-for-safety-education/else-workshop>). This workshop allowed to identify the key concepts and challenges of three themes: safety management, organizational dynamics, and leadership. Key concepts and challenges are detailed in the following table:

Training Content Table		
Safety Management	<p>1.1: Current approaches</p> <p>Key concepts</p> <ul style="list-style-type: none"> - Managing Safety: an evolving problematic - Risks and Safety: a technical approach - Safety culture - International safety standards 	<p>1.2: Dealing with uncertainty</p> <p>Key challenges</p> <ul style="list-style-type: none"> - Building high reliability organizations: from anticipation to resilience - Dealing with uncertainty in a collective manner: collective cognition - Individual factors of dealing with uncertainty
Organizational Dynamics & Leadership	<p>2.1: Organizational dynamics</p> <p>Key concepts</p> <ul style="list-style-type: none"> - Organizational structure and design - Fostering learning in organizations: knowledge and learning <p>Key challenges</p> <ul style="list-style-type: none"> - Management of paradoxes - Uncertainty, complexity, and organizational limits – implications for safety 	<p>2.2: Leadership as a process of influence</p> <p>Key concept</p> <ul style="list-style-type: none"> - Leadership <p>Key challenges</p> <ul style="list-style-type: none"> - Ethics and Risks Management - Leadership for safety in day-to-day practices

ELSE Training Syllabus

These key concepts and challenges are developed in three modules:

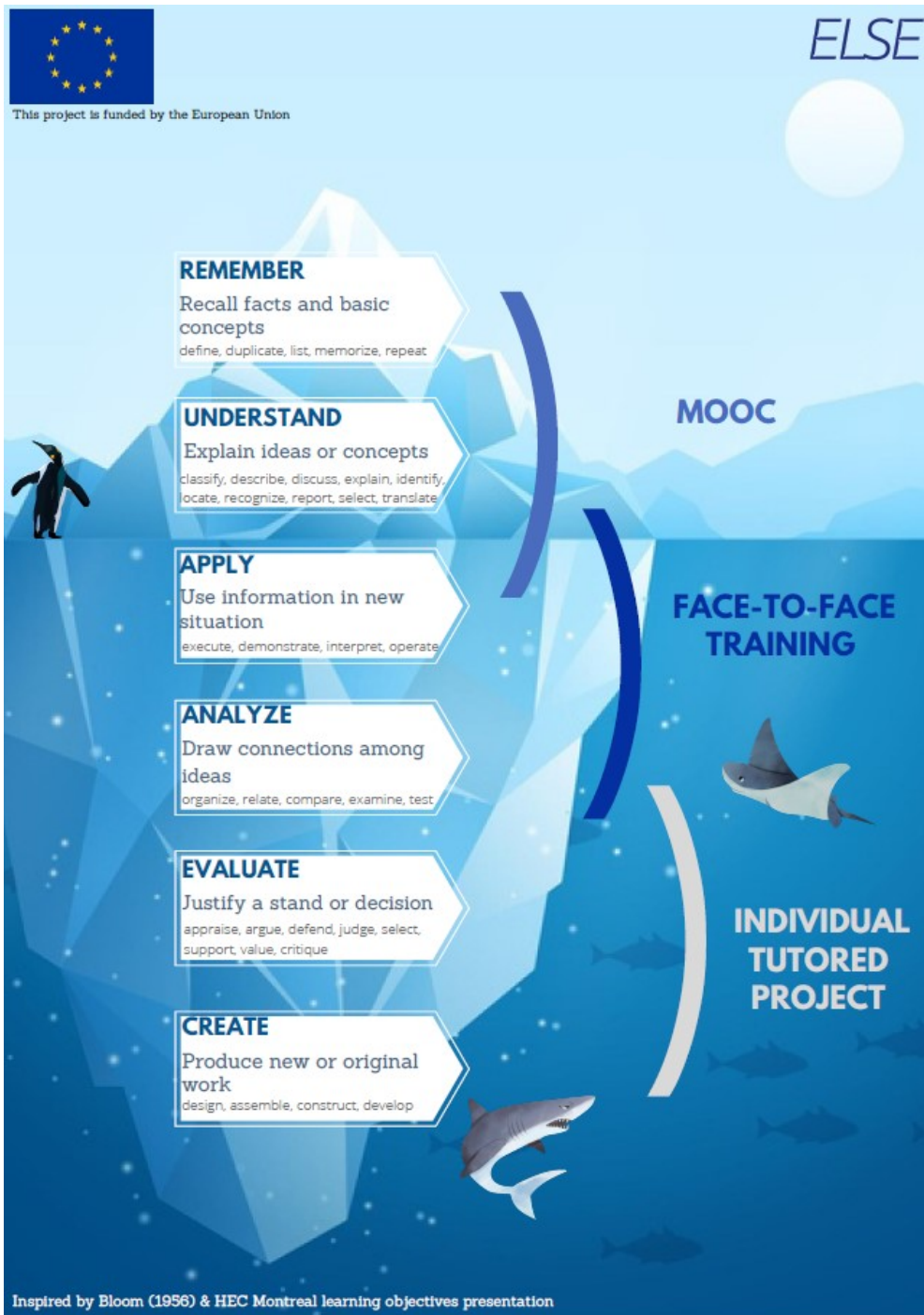
- **MODULE 1: From regulated to managed safety in high-risk environments**
 1. Managing human and organizational risk factors
 2. Dealing with uncertainty in high-reliability organizations (HROs)

- MODULE 2: Leadership for safety
 1. Understanding organizational dynamics
 2. Leadership: definition, mechanisms, practices
 3. Developing leadership for safety
- MODULE 3: Developing efficient leadership practices for improving safety in the nuclear sector (personal project)

Module 1 and 2 combines the MOOC and face-to-face trainings. The MOOC was implemented in partnership with INSA (Institut National des Sciences Appliquées, University of Toulouse, France) using innovative pedagogical and multimedia tools on a dedicated platform : SEAMonline (<https://seamonline.insa-toulouse.fr/>) and available via this [link](#). The face-to-face training sessions includes case studies, exercises, mentor-led discussions, and debriefing.

ELSE Training Structure

The ELSE training is developed through three-phases to enable in-depth learning: MOOC, face-to-face session, and personal tutored project. The progression and complementarity of learning between the MOOC, the face-to-face training and the personal project carried out in the trainee's company are detailed in the following figure.



The MOOC presents and explain the main concepts of the training. Knowing and understanding these concepts constitutes the first level of knowledge appropriation.

The face-to face training will strengthen the appropriation process by discussing the concepts with the different professors and experts and applying them in numerous case studies (10). Applying these concepts and analysing concrete situations in which they are mobilised constitutes the second level of knowledge appropriation.

Finally, the individual tutored project allows to apply these new concepts learned into day-to-days practices. The aim is to develop a critical look at the processes and practices implemented to increase safety. Evaluate current safety processes and practices and create new ones constitutes the third level of knowledge appropriation.

ELSE Training Pedagogical Team

The ELSE pedagogical team is composed of renowned international researchers and nuclear industry experts:

- **DECHY Nicolas:** Organisational and human factors specialist at IRSN, Institute for nuclear safety and radiation protection, (France).
- **ERMINE Jean-Louis:** Professor emeritus at Institut Mines-Telecom & International consultant in Knowledge Management (France).
- **FLIN Rhona:** Professor of Industrial Psychology, Aberdeen Business School, Robert Gordon (Scotland, UK).
- **GUNTZBURGER Yoann:** B. Eng., M.A.Sc., Ph. D. Assistant Professor in risk management & ethics, SKEMA Business School (France).
- **JOURNE Benoit:** Professor of Management at the University of Nantes, specialized in safety management (France).
- **JUBAULT KRASNOPEVTSEVA Natalia:** Ph.D. ELSE Research and Training assistant and Université Côte d'Azur/ SKEMA Business School (France).
- **KAMINSKA Renata:** Professor of Strategy and Innovation, SKEMA Business School (France).
- **KUDESI Ravi S:** Assistant Professor of Human Resource Management (Mindfulness expert), Temple University, Fox School of Business (USA)
- **LAGRANGE Valérie:** Expert in Safety Leadership and Human Factors – Strategic adviser for the EDF's Directorate of Nuclear Generation and Engineering, Electricité de France (France)
- **LOUVAT Didier:** Former Managing Director of the European Nuclear Safety Training and Tutoring Institute, ENSTTI, (France).
- **PILBEAM Colin:** Professor of Human Resource Management (specialized in Safety Leadership) Cranfield University (SATM) (UK).
- **POTOCHNIK Kristina:** Associate Professor in Human Resource Management and Head of Organisation Studies Group, University of Edinburgh Business School (Scotland, UK).
- **REPUSSARD Jacques:** Former Director General of IRSN, France, Chair of the Institute for Risk Management, and AIEA Expert (France).
- **ROUBY Evelyne:** Associate Professor in Management (specialized in organizational theory and resilience), Université Côte d'Azur (France).
- **THOMAS Catherine:** Professor in Management (specialized in organizational dynamics and knowledge management), Université Côte d'Azur (France).

How to find more information about the ELSE project

ELSE site (Université Côte d'Azur)

<https://univ-cotedazur.eu/european-leadership-for-safety-education>

ELSE project page on the site of the ENEN

<https://enen.eu/index.php/portfolio/else-project/>

ELSE LinkedIn Page:

<https://www.linkedin.com/in/else-project/>

