GENERAL INFORMATION					
Course name	RO3. Enhanced robotic cells				
Semester	2	Character	Compulsory	Type of module	Specialisation
ECTS	6		Modality	Face-to-face	
Higher Education Institution(s)			ESTIA		
Lecturer(s)			Maylis Uhart, Joseph Canou, Emmanuel Duc, Vincent Magimel		

LEARNING AND TEACHING	
ESCO Occupation(s)	Manufacturing engineer Chief technology officer
ESCO Skill & Competences (*no ESCO)	Apply numeracy skills Define technical requirement Ensure health and safety in manufacturing Coordinate technological activities Ensure adherence to standards* Operate precision measuring equipment Review development process of an organization
Learning outcomes (Please refer to Appendix 4 for the interpretation of the acronym)	KU1, EA2, EP1, EP3, EP4, IN3
Teaching methods	Lectures Tutorials Case Studies Simulation-Based Learning Flipped Classroom
Assessment methods	Technical reports Oral presentation & defence Examinations Case studies Problem sets and exercises Lab experiments Simulations and modelling exercises

CONTENTS
Previous requirements (if necessary)
RO2 Industrial cells implementation
Content index
Integration of end-effectors on a robotic structure - Robot / task matching - Sensor-based control - Sensors and real-time monitoring - Practical application
Health and safety - Industrial risk management and assessments
Standard and regulations
Integration of cobotics - Practical application - Applications of cobotics - Standards in cobotics - Architecture of a cobotics platform - Human-robot interaction (physical and non-physical) for cobotics - Processing sensor information for cobotics - Control strategies in cobotics: perception-decision-action loop - Practical application

SUPPORTING BIBLIOGRAPHIC REFERENCES

SOFTWARE
Matlab, equipment-based specific software