









GENERAL INFORMATION							
Course name RO5. Metho				s for advanced and robotized processes			
Semester	2	Character		Compulsory	Type of module	Specialisati on	
ECTS 4				Modality	Face-to-face		
Higher Education Institution((s)	ESTIA			
Lecturer(s)				Pierre Michaud, Pierre Joyot, Pierre Diaz, Simon Deseur			
LEARNING AND TEACHING							
ESCO Occupation(s)			Calculation engineer Chief technology officer				
ESCO Skill & Competences (*no ESCO)			Provide modelling and simulation of the process* Analyse production processes for improvement Industrial research and development Business strategy concepts Process-based management				
Learning outcomes (Please refer to Appendix 4 for the interpretation of the acronym)			EA1, EP1, EP3, EP6				
Teaching methods			Lectures Tutorials Case Studies Simulation-Based Learning Collaborative and Problem-Based Learning (PBL).				
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)							
RU4 Robotics application for Advanced processes							
Connesite parts							
 Composite materials Specific features of composite structures: implications for design and manufacturing processes Behaviors of composite structures and assistance with architectural or layered design; Design for Manufacturing (integration of manufacturing into structural design) or Simulation for better design 							
Processing of composite structures:							
 Prepreg, Intusion, KIM, thermoplastic stamping Process simulation and decision support 							
- Tooling selection and design							
- composite part inspection and model registration							
- Design methods for manufacturing sequences - Requirements for robotization							
Additive manufacturing parts (ALM)							
 Materials Specific features of ALM parts: implications for design and manufacturing 							
- Thermo-mechanical behaviour and metallurgy of AM parts							
Processing methods for ALM parts:							
- SLM, DED Powder, DED Wire, WAAM							
 manufacturing range Requirements for robotization 							
Practical application							
SUPPORTING BIBLIOGRAPHIC REFERENCES							









SOFTWARE

Adaone