Advanced Manufacturing & Engineering Technologies

Your expertise is needed for developing new courses with a priority for the skills **highlighted in red**. Submit your course idea in the Call for Proposal.

Skill *(ranked by urgency and number of respondents)*	**What a course should teach** *(highlighted in red are the topics currently missing from the existing course portfolio)*	**Existing courses in the EPFL Extension School portfolio** *(links to webpages)*
Deploy AI in computer vision systems for quality control	Practical skills to label data, train and evaluate CV models, deploy on cameras/edge devices; monitoring model drift; documenting performance to operations and management.	Image Analysis in the Age of AI;
Understand basic AI concepts and relevance to industrial processes	Core AI/ML concepts; typical industrial data and use cases; **how AI integrates into robotics, vision, and production lines; limits and risks; case studies from manufacturing.**	AIML Essentials; AIPM; Innovate with AI and Tech
Program industrial robotics for automation	**Basics of industrial robotics; coordinate systems, motion planning, safety; programming paradigms (teach pendants, scripting, APIs); integrating robots with sensors**	
Operate 3D printing systems	Overview of additive manufacturing technologies, materials and design constraints; preparing models (CAD to STL), slicing, machine setup and calibration, safety, quality control and basic maintenance; linking 3D printing to prototyping and small-series production.	3D Printing
Design semiconductor devices and apply photonic technologies	Fundamentals of semiconductor physics; basic device architectures; photonic components and integration; design workflows and simulation basics; links to sensing and imaging.	