EPFL

Description of the Microcredential (MC) obtained as part of continuing education " **Image Analysis in the Age of AI : Designing Efficient Imaging Workflows** "

This document, together with the attached study plan, supplements the “Framework regulations for the award of an MC as part of a continuing education program” and sets out the terms and conditions applicable to the program mentioned in the title.

Target Audience

This course is aimed at engineers, technicians, CTOs, R&D consultants, and scientists who use imaging (in engineering, life sciences, manufacturing, etc.) and are seeking to gain skills in image analysis algorithms and AI-based approaches.

Learning objectives and acquired competencies

The overall objectives, in terms of skills and knowledge to be acquired, are as follows:

- Gain insights into cutting-edge imaging techniques and into the latest trends shaping the imaging industry
- Develop the visual expertise required to capture, process, enhance, and interpret image data
- Acquire hands-on skills in open-source software and AI models for effective image analysis
- Explore the opportunities and risks of AI-powered image analysis workflows in industry
- Learn the best practices in image analysis for industrial and scientific applications

Admission requirements

To ensure optimum teaching conditions, the course committee sets a maximum number of participants and may reject candidates if the number of applications is too high.
The course takes place only if the budgeted minimum number of participants is reached. The committee is responsible for this decision.

Academic lead(s)

This course is under the responsibility of Professor Michael Unser, Academic Director, Center for Imaging, EPFL.

Taught subjects and associated instructors

The subjects covered in this programme are as follows:

- Day 1 - Working with Image Data
- Day 2 - Mastering Image Analysis
- Day 3 - Shifting to AI for Image Segmentation
- Day 4 - Understanding Computational Imaging

Instructors :

- Dr. Daniel Sage, EPFL Lecturer
- Dr. Edward Andò, EPFL Lecturer

Teaching language

The programme is delivered in English.

Assessment

a) Type of examination and examination procedure: Multiple-choice questionnaire and application-based questions.

b) Examination period : During the training for the first attempt, 4 weeks later for the second and last attempt.

c) Assessment attested by a « acquired/not acquired » designation.

d) Requirements for successful completion: To obtain the « acquired » designation.

e) In the event of a « not acquired » designation (including failure to meet the deadline), the assessment is considered unsuccessful. The participant is entitled to a second attempt, which will be organized 4 weeks after the announcement of the failure. The second attempt will consist of a new written exam, the modalities of which will be specified at the same time as the announcement of the precise date of the exam. Failure to pass will result in permanent elimination.

f) A grade of 0 (zero) is assigned in cases of unjustified absence from the assessment and in cases of plagiarism, fraud, or attempted fraud. Any unjustified absence or minor plagiarism results in failure of the assessment. The participant is then entitled to a second and final attempt.

g) Definitive failure occurs in the following situations:

   a. if the second attempt is insufficient (assessment is “not acquired”)
   b. if the participant fails to attend the second examination on the announced date
   c. if the work is not submitted within the deadline and in situations covered by Article 13 of the aforementioned framework regulations.

In the event of non-attainment of the Certificate, the Steering Committee may decide to issue a certificate of participation, provided that a minimum attendance of 80% has been verified.

Statutory duration and maximum duration of the programme

The programme has a statutory duration of four days. The maximum period allowed to fulfil all assessment requirements (including any resit sessions) is two months from the date of initial enrolment. The first enrolment in the course « Image Analysis in the Age of AI : Designing Efficient Imaging Workflows » marks the start of the study period.

Award of the Microcredential

On completion of continuing training « Image Analysis in the Age of AI : Designing Efficient Imaging Workflows », an MC is awarded if the following two conditions are met, subject to the situations provided for in article 11 of the above-mentioned framework regulations:

a) having attended at least 80% of the training course (attested by attendance lists),
b) have passed the assessment of skills acquired during the program as described above.

Stackability / Accumulation

N/A

Study plan, ECTS credits and level of the programme within the European Qualifications Framework (EQF)

The program represents a workload of 50 hours equivalent to 2 ECTS

The level according to the European Qualifications Framework (EQF) is 7

Current study plan (subject to change)

Title of the Microcredential"	**Module**	Number of days of in-person instruction	Instruction [Hours] 1 day = 7 hours	Remote supervision [Hours]	Individual work [Hours]	Total hours	Assessment method (written/oral/ report/MCQ/ …)	ECTS credits awarded
Image Analysis in the Age of AI : Designing Efficient Imaging Workflows	Day 1 - Working with Image Data Day 2 - Mastering Image Analysis Day 3 - Shifting to AI for Image	4	28	0	22	**50**	Multiple-choice questionnaire and application-based questions.	2

	Segmentation Day 4 - Understanding Computational Imaging							