**UE 3.7C – Smart molecules for biology – 3 ECTS**

**Instructors’ names:**
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**Pedagogical objectives:**
This course will focus on the conception of molecules used as probes in biological media and the various associated methods of detection as well as synthetic methods for the modification of proteins.

**Course pre-requisites:**
Master 1 validation

**Program:**
I. **Chemistry of Peptides and Proteins:** (14h)
   - Solid phase synthesis
   - Native chemical ligation
   - Biorthogonal labelling of Proteins by chemical modification or by the ribosomal machinery

II. **Fluorescence spectroscopy** (10h)

Colloidal chemistry
Nano biotechnologie

III. **Probes associated to other detection methods** (6h)
   - Luminescence
   - Molecular probes and nanochemistry

IV. **Article Analysis**

**Acquired skills:**
Knowledge and understanding of the strategies for the conception of molecular probes for biology.

**Evaluation:**
Final written exam (50%)