MU4BM113	ESTABLISHED AND EMERGING MODEL ORGANISMS FOR MARINE SCIENCE – SCHMID TRAINING COURSE

UE MU4BM113
Schmid Training Course
Established and emerging model organisms for Marine Science

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Modalités	Semestre	ECTS	Présentiel / Distanciel		Effectif maximal
	S2	**6**	**Présentiel**		**20**
Volume horaire (H)	**Cours**	**TD**	**TP**	**Travail personnel**	**Site**
	10	**6**	**44**	**20 (ahead of the course)**	**Station Biologique de Roscoff (Northern Brittany)**
Langue d'enseignement	**Cours**	**TD**	**TP**		**Supports de cours**
Français/Anglais	**english**	**english**	**english**		**english**
Evaluations	See below				

Type d'UE	**Orientation vers le(s) parcours**
UE orientation au choix (partagée avec le master BIP)	**BCBDBCS** BCD

Présentation pédagogique de l'UE

Objectifs	This teaching is a two-week course taking place at the **Roscoff** marine station IN BRITTANY (from **16 to 27 March 2026**) Historically, **marine organisms have fascinated biologists**. During this training, students will meet scientists working with a broad range of marine organisms (acoels, brown algae, annelids, marine bacteria, cephalochordates, cartilaginous fish, cnidarians, echinoderms, sponges, placozoa, tunicates) and will discover with them why these models are central for research in biology.
Thèmes abordés	Students will learn, for each model, life cycle, anatomy, embryogenesis and reproduction strategy together with descriptive and functional approaches that have been developed successfully. An up-date concerning available genomic data will also be made. As for experiments, students will perform immunohistochemistry, embryonic development table, egg micro-injection, phototaxy test, dissection and regeneration experiment. All organisms will be available for observation.

	A foreshore excursion is also organized to appreciate the biodiversity present on the shoreline of this region. The way of teaching for this training is **hybrid** meaning that it comprises a preparation time ahead of the course (to learn fundamental knowledge autonomously) and an in-person course with the different scientists for the practical and conceptual parts of the teaching. A**n online distance learning platform** (https://digital-marine.sorbonne-universite.fr/index.php/digitalmarine) has been designed specifically for students participating to this training. This platform hosts dedicated web pages for each marine organism with several learning materials (video lectures, interviews with researchers, virtual labs, 2D and 3D animations, interactive diagrams and scientific literature). This autonomous learning allows to free up time during the in-person course for practical lab work and discussion with the scientists. Three types of evaluation are proposed - A multiple-choice test to assess fundamental knowledge acquired through the platform (/30) - A journal club session where students make an oral presentation of a selected research paper related to studies on one of the models (/30) - A final exam where students have to write the abstract of a selected paper to show that they have understood the background, main results, methodology and conclusion of a research paper. The original abstract will have been removed beforehand (/40) In order to avoid an overload programme and to dedicate more time to experiments and scientific exchanges, marine models presented each year undergo a rotation.
Prérequis	Participation to the course requires good knowledge in: - tree of life (particularly metazoan phylogeny) - molecular biology and developmental genetics - developmental biology - animal biology - english (for scientists)
Compétences acquises à l'issue de l'UE (concepts, méthodologie et outils)	- Cellular and molecular knowledge on a wide range of marine organisms - Learn how to read a scientific paper and how to analyze it - Learn to speak in front of a scientific audience - Learn methodology about how to address a scientific project - Recognize marine organisms - Experiment on marine organisms

Equipe pédagogique

- responsible: Agnès Boutet - tutorial classes : Agnès Boutet - experts and practical lab work : Alexandre Alié (CNRS, OOV), Xavier Bailly (CNRS - Roscoff), Stéphanie Bertrand (SU - Banyuls), Agnès Boutet (SU - Roscoff), Jean-Philippe Chambon (SU), Bénédicte Charrier (CNRS - Roscoff), Patrick Cormier (SU - Roscoff), Salvatore D'Aniello (Stazione Zoologica Anton Dohrn - Naples), Eve Gazave (Institut Jacques Monod), Julia Morales (CNRS - Roscoff), Nicolas Rabet (SU -

MNHN), Bernd Schierwater (Hannover University), Simon Sprecher (University of Fribourg), Sébastien Darras (CNRS, OOB), Stefano Tiozzo (CNRS, OOV)