



## 1. General information

**Course:** SEMINAR IN MATHEMATICAL BIOLOGY WITH APPLICATIONS IN BIOTECHNOLOGY

**Code:** 310937

**Type:** ELECTIVE

**ECTS credits:** 6

**Degree:** 2351 - MASTER DEGREE PROGRAMME IN PHYSICS AND MATHEMATICS-FISYMAT

**Academic year:** 2021-22

**Center:**

**Group(s):** 20

**Year:** 1

**Duration:** C2

**Main language:** Spanish

**Second language:** English

**Use of additional languages:**

**English Friendly:** Y

**Web site:**

**Bilingual:** N

**Lecturer:** HELIA DA CONCEICAO PEREIRA SERRANO - Group(s): 20

| Building/Office              | Department  | Phone number | Email                  | Office hours |
|------------------------------|-------------|--------------|------------------------|--------------|
| Margarita Salas/Despacho 327 | MATEMÁTICAS | 926052237    | heliac.pereira@uclm.es |              |

## 2. Pre-Requisites

It is necessary to know about mathematical analysis as well as ordinary and partial differential equations.

## 3. Justification in the curriculum, relation to other subjects and to the profession

Not established

## 4. Degree competences achieved in this course

## Course competences

| Code | Description                                                                                                                                                                                                                                        |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CE02 | Develop the ability to decide the appropriate techniques to solve a specific problem with special emphasis on those problems associated with the Modeling in Science and Engineering, Astrophysics, Physics, and Mathematics                       |
| CE03 | Have the ability to build and develop advanced mathematical reasoning, and delve into the different fields of mathematics                                                                                                                          |
| CE04 | Have the ability to build and develop advanced physical reasoning, and delve into the various fields of physics and astrophysics                                                                                                                   |
| CE05 | Know how to obtain and interpret physical and/or mathematical data that can be applied in other branches of knowledge                                                                                                                              |
| CE06 | Prove the necessary capacity to perform a critical analysis, evaluation and synthesis of new and complex results and ideas in the field of astrophysics, physics, mathematics and biomathematics                                                   |
| CE07 | Ability to understand and apply advanced knowledge of mathematics and numerical or computational methods to problems of biology, physics and astrophysics, as well as to build and develop mathematical models in science, biology and engineering |
| CE08 | Ability to model, interpret and predict from experimental observations and numerical data                                                                                                                                                          |

## 5. Objectives or Learning Outcomes

## Course learning outcomes

Description

## 6. Units / Contents

## Unit 1: BIOMAT course

## 7. Activities, Units/Modules and Methodology

| Training Activity                        | Methodology                                     | Related Competences (only degrees before RD 822/2021) | ECTS                              | Hours      | As | Com | Description |
|------------------------------------------|-------------------------------------------------|-------------------------------------------------------|-----------------------------------|------------|----|-----|-------------|
| Class Attendance (theory) [ON-SITE]      | Lectures                                        | CE02 CE03                                             | 1.04                              | 26         | Y  | Y   |             |
| Class Attendance (practical) [ON-SITE]   | Workshops and Seminars                          | CE04 CE05                                             | 0.4                               | 10         | Y  | Y   |             |
| Project or Topic Presentations [ON-SITE] | Individual presentation of projects and reports | CE07 CE08                                             | 0.24                              | 6          | Y  | Y   |             |
| Individual tutoring sessions [ON-SITE]   | Guided or supervised work                       | CE02 CE03 CE04 CE05 CE06 CE07 CE08                    | 0.32                              | 8          | Y  | N   |             |
| Study and Exam Preparation [OFF-SITE]    | Self-study                                      | CE02 CE03 CE04 CE05 CE06 CE07 CE08                    | 4                                 | 100        | N  | -   |             |
| <b>Total:</b>                            |                                                 |                                                       | <b>6</b>                          | <b>150</b> |    |     |             |
| <b>Total credits of in-class work: 2</b> |                                                 |                                                       | <b>Total class time hours: 50</b> |            |    |     |             |

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

| Evaluation System                  | Continuous assessment | Non-continuous evaluation* | Description                                                                   |
|------------------------------------|-----------------------|----------------------------|-------------------------------------------------------------------------------|
| Assessment of active participation | 40.00%                | 0.00%                      | Assessment of student attendance and participation in class and in seminars.  |
| Portfolio assessment               | 60.00%                | 100.00%                    | Realization of reports, works and/or projects made individually or in groups. |
| <b>Total:</b>                      | <b>100.00%</b>        | <b>100.00%</b>             |                                                                               |

## 9. Assignments, course calendar and important dates

|       |       |
|-------|-------|
| Hours | hours |
|-------|-------|

| Author(s)                                          | Title/Link | Publishing house | Citv | ISBN | Year | Description |
|----------------------------------------------------|------------|------------------|------|------|------|-------------|
| No se ha introducido ningún elemento bibliográfico |            |                  |      |      |      |             |