

26417 - Stratigraphic Correlation and Synthesis

Información del Plan Docente

Academic Year	2017/18
Faculty / School	100 - Facultad de Ciencias
Degree	296 - Degree in Geology
ECTS	7.0
Year	3
Semester	First semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The course consists of three complementary parts: theory, laboratory practice and field practice. The proposed activities are based on the transmission of basic and essential knowledge through participatory lectures. This knowledge is complemented by practical and field activities in which the student has to demonstrate the degree of understanding of the subject as well as a correct application of concepts, methods and techniques used. In addition, tutorials are a complementary activity in which the student can consult or complete issues. Finally, different useful material related to the subject is available in the ADD.

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5.2.Learning tasks

- Lectures and seminars: They consist on participatory master classes involving a total of 35 hours. Seminars will address some relevant aspects to complement laboratory and field practical classes.

- Laboratory: 11 sessions involving a total of 22 hours. In these classes, students will analyze data taken during the fieldtrips.

- 4 fieldtrips involving a total of 28 hours (13 + 15). In the fieldtrips, students will take the necessary data for some of the practical classes.

- Complementary activities and exercises (personal work, without the presence of the teacher) mainly related to the laboratory classes, and to a lesser extent, theoretical and field aspects. 45 hours.

These activities and exercises will be reviewed, corrected and evaluated by the teacher.

- Querying and study for overcoming the written tests (including examination): 45 hours.

5.3.Syllabus

1- Stratigraphic correlation: objectives and criteria

2- Discontinuities in conformable successions

3- Unconformities and syntectonic sedimentation

4- Architecture of sedimentary bodies

5- Accommodation and sedimentation: lateral and vertical facies changes

6- Events in the stratigraphic register

7- Introduction to the sequential analysis

8- Parasequences

9- Third order cycles

10- Synthesis stratigraphic maps

11- Introduction to the Basin Analysis

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Fieldtrips:

1. JURASSIC MARINE PLATFORMS: ARCHITECTURE AND SEQUENCES
2. LOWER CRETACEOUS CONTINENTAL AND MARINE DEPOSITS: CORRELATION CRITERIA
3. DISCONTINUITIES AND SYNTECTONIC DEPOSITS IN MARINE AND CONTINENTAL ENVIRONMENTS
4. HIGH FREQUENCY SEQUENCES AND ASSOCIATED DISCONTINUITIES IN DIFFERENT CONTEXTS

Laboratory:

1. KIMMERIDGIAN IN JABALOYAS
2. BAJOCIAN IN MOSCARDÓN
3. BERRIASIAN IN GALVE
4. APTIAN IN ALIAGA
5. HETTANGIAN IN OLIETE
6. BARREMIAN IN OLIETE
7. CALLOVIAN-OXFORDIAN IN RICLA-TOSOS
8. KIMMERIDGANSE IN RICLA
9. SINEMURIAN IN ALMONACID DE LA CUBA
10. PLIENSBACHIAN IN ALMONACID DE LA CUBA

5.4.Course planning and calendar

The course consists of 7 ECTS (175 hours of student work) distributed as follows:

Theory classes (35 h). They will be held according to the schedule established by the Sciences Faculty.

Laboratory classes (22 h). They will be held according to the schedule established by the Sciences Faculty.

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Field classes (4 days) coordinated with theoretical and practical classes. The field calendar is available on the website of the Department of Earth Sciences.

- 86 hours of personal work. It includes study as well as implementation of works and practices (20 hours).

- 4 hours of examination. The start time and duration of the global test will be established in the schedule of examinations of the Sciences Faculty and announced at least 3 days before in the ADD and the bulletin board of the Stratigraphy Area.

5.5. Bibliography and recommended resources

BB	Boggs, Sam. Principles of sedimentology and stratigraphy / Sam Boggs, Jr. . - 3rd ed. Upper Saddle River (New Jersey) : Prentice Hall, 2001
BB	Dabrio González, Cristino José. Estratigrafía / Cristino J. Dabrio, Santiago Hernando Madrid : Facultad de Ciencias Geológicas, Universidad Complutense de Madrid, [2003]
BB	Dunbar, Carl O.. Principios de estratigrafía / Carl O. Dunbar, John Rodgers ; [traducido por Manuel Álvarez] . - 1ª ed., 4ª impr. Barcelona [etc.] : Compañía Editorial Continental, 1976
BB	Estratigrafía / Inmaculada Corrales Zarauza...[et al.] Madrid : Rueda, D.L. 1977
BB	Krumbein, W.C.. Stratigraphy and sedimentation / by W.C. Krumbein and L.L. Sloss . - 2nd ed. San Francisco : W.H. Freeman, cop. 1963
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and practice / J. Marvin Weller New York
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BC Allen, Philip A.. Basin analysis : principles
and applications / Philip A. Allen, John R.
Allen . - 2nd ed. Oxford [etc.] : Blackwell
Science, 2005

BC Bishop, M. S.. Subsurface Mapping Wiley
(1967)

BC Einsele, Gerhard. Sedimentary basins :
evolution, facies, and sediment budget /
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changes of sea level, Part 2: The
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stratigraphic analysis. En: Seismic
stratigraphy : applications to hydrocarbon
exploration / edited by Charles E. Payton .
- 1st ed., 8th printing Tulsa, Oklahoma :
American Association of Petroleum
Geologists, 1985

BC The sedimentary record of sea-level
change / edited by Angela L. Coe ;
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published, repr. with corrections
Cambridge : The Open University ;
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