VNIVERSITAT DE VALÈNCIA

Course Guide
44992 Surface and interface chemistry: experiment and modelling

COURSE DATA

Data Subject	
Code	44992
Name	Surface and interface chemistry: experiment and modelling
Cycle	Master's degree
ECTS Credits	6.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
2245 - Master's Degree Erasmus Mundus in Theoretical Chemistry and Computational M	Faculty of Chemistry	2	Annual

Subject-matter

Degree	Subject-matter	Character
2245 - Master's Degree Erasmus Mundus in Theoretical Chemistry and Computational M	4 - Optativas de segundo	Optional

Coordination

Name	Department
TUÑON GARCIA DE VICUÑA, IGNACIO NILO	315 - Physical Chemistry

SUMMARY

This course aims at acquiring a comprehensive set of knowledge to deal with the chemistry of material surfaces. It will be offered by the Sorbonne University of Paris who will be the organisers.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

2245 - Master's Degree Erasmus Mundus in Theoretical Chemistry and Computational M

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Students are able to foster, in academic and professional contexts, technological and scientific progress within a society based on knowledge and respect for: a) fundamental rights and equal opportunities between men and women, b) The principles of equal opportunities and universal accessibility for persons with disabilities, and c) the values of a culture of peace and democratic values.
- Students know the theories and calculation methods for the study of solids and surfaces. Critical evaluation of its applicability to problems of catalysis, magnetism, conductivity, etc.
- Students know the existence of advanced computational techniques such as instruction and data channeling, superscalar and multiscalar processors, chain operations, parallel platforms, etc.
- Students are able to work as a team both at multidisciplinary level and with their own peers respecting the principle of equality of men and women.
- Students develop a critical thinking and reasoning and know how to communicate them in an egalitarian and non-sexist way both in oral and written form, in their own language and in a foreign language.
- Students are organized at work demonstrating that they know how to manage their time and resources.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

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WORKLOAD

ACTIVITY	Hours	% To be attended
Computer classroom practice	20,00	100
Theory classes	20,00	100
Tutorials	5,00	100
TOTAL	45,00	

TEACHING METHODOLOGY

English version is not available

EVALUATION

Regular assessment

The final mark for the course will be based on: 20% final exam of the course and 80% corresponding to the delivery of a report of exercises proposed by the professor.

Resit

The evaluation will be based on the delivery of a report with the proposed exercises.

REFERENCES

Basic

- H.-J. Butt, K. Graf, M.Kappl, Physics and Chemistry of Interfaces, 2003 WILEY-VCH Verlag GmbH & Co. ISBN 3-527-40413-9.
  G.T. Barnes, I.R. Gentle, Interfacial Science: an introduction (2 ed.), 2010 Oxford University Press, ISBN on 978-0-19-657118-5.
  A. J. Bard, L. R. Faulkner, Electrochemical Methods: Fundamentals and Applications (2 ed.) 2001 John on Wiley and Sons, ISBN: 978-0471043720.