Module Title:
Please provide a module title which should have only 30 characters including punctuation and spaces .
Laboratory Quality Systems: ISO/IEC 17025

Module Code:
Please code according to the code QM-xx-xx, AM-xx-xx or DA-xx-xx
QM0104

Maximum Number of Students:
Please include any limitation on the number of students able to take the module.
20

Total ECTS Credits
This should be the sum of the credits for each of the semesters in which the module is to run.
2

Notional Learning Hours
(a) Contact Time - 10h
(b) Private Study - 40h

Format of Teaching:

Lectures	10h
Laboratories or Practicals	0h
Other	0h

Teaching Strategy:
Please show how the contact hours are to be allocated in terms of the type of class involved.
Formal lectures in 60/90 min timetable

Convener:
The name of the member of permanent staff responsible for the module.
R. Companyó

University / Department:
The name of the University and Department responsible for the module.
University of Barcelona. Department of Analytical Chemistry

Language of Tuition:
Please state whether module is to be taught through the medium of English or another language. If bi-lingual please indicate % of each language
English

Module Description - The Purpose or Aims:
This should specify the purpose of the module where it fits into the programme specification and what it aims to provide. Please list the Aims in numerical order.

1. To introduce the structure and the content of the ISO/IEC 17025 standard.
2. To explain how this standard is implemented in the analytical laboratories.
3. To teach how this standard is applied to the accreditation process of the analytical laboratories.

Specific Learning Outcomes for this module: (contributing to general learning outcomes GLO 1 – GLO 10)
Learning Outcomes should provide statements which articulate what the student has achieved upon completion of the course. What will a student know, understand or be able to do?

1. Understand the language (terms and expressions) used in the ISO/IEC 17025 standard.
2. Ability to convert the management requirements in practical implications for a laboratory.
3. Ability to convert the technical requirements in practical implications for a laboratory.
4. Understand the accreditation process.
5. Ability to search information about the accreditation bodies and accredited laboratories.

Summary of Course Content:
This should be a summary paragraph of list of the topics to be covered by the module.
The module will start with a brief review of the documents used in the past as references for the accreditation of laboratories. Then a general overview of the ISO/IEC 17025 standard will be presented. Subsequently, the management and the technical requirements will be analyzed in depth and their implications for the organization and the activities of the laboratories will be studied.
The accreditation process will be explained emphasizing this assessment step (audit), the analysis of the causes of nonconformities, and the corrective actions taken. The main documents of the process will be studied. Some examples of fields, such as food and drinking water analysis, which use the accreditation according to the requirements of ISO/IEC 17025 for regulatory purposes, will be proposed. Sources of information about the accreditation bodies and accredited laboratories will be analyzed.

Transferable Skills Taught:

Please list in numerical order the key skills taught e.g. communication, information technology, interpersonal skills, teaching/study skills. Please relate these to benchmark statements.

Information Technology:

Database search for accreditation bodies and accredited laboratories.

Communication:

Oral (participating in classroom discussions) and written (preparing the group assignment) communication skills using the appropriate terminology.

Interpersonal skills:

Elaboration of a group written assignment.

Assessment Methods:

Details of assessment methods should include forms of assessment and the contribution of each to the summative assessment of the module. The relationship to the learning outcomes of the module should be explicit and the numbers of the various learning outcomes should be attached to the assessment methods listed. Please list in numerical order

1. LO1 and LO4 – Written Examination and participation in the classroom discussions (40%)
2. LO2, LO3 and LO5 – Group Written Work assignment (60%)

Assessment Criteria:

Details of assessment methods should include forms of assessment and the contribution of each to the summative assessment of the module. The relationship to the learning outcomes of the module should be explicit and the numbers of the various learning outcomes should be attached to the assessment methods listed. Please list in numerical order.

Treshold:
LO1 and LO4: Describe the content of the ISO/IEC 17025 standard and the accreditation process.
LO2, LO3 and LO5: Demonstrate ability to apply the management and technical requirements in an analytical laboratory.
Good:
LO1 and LO4: Critically discuss the content of the ISO/IEC 17025 standard and the accreditation process, and participate actively in the classroom debates.
LO2, LO3 and LO5: Demonstrate good ability to apply the management and technical requirements in an analytical laboratory.
Excellent:
LO1 and LO4: Demonstrate a profound Knowledge of the ISO/IEC 17025 standard and the accreditation process, and participate actively in the classroom debates.
LO2, LO3 and LO5: Propose a detailed plan for the implementation of a quality system according to the ISO/IEC 17025 standard.
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Resource Implications of Proposal and Proposed Solutions:

Details on any resources required and should be included. Please also list e.g core texts; recommended reading material; equipment; films etc.

Lectures notes and a copy of the ISO/IEC 17025 standard will be available for students.
Recommended reading:
F.M. Garfield, E. Klesta, J. Hirsch. *Quality Assurance Principles for Analytical Laboratories*. AOAC. Gaithersburg, USA, 2000.
H. Günzler. *Accreditation and Quality Assurance in Analytical Chemistry*. Springer 1996.
E. Prichard, V. Barwick. *Quality Assurance in Analytical Chemistry*. Wiley 2007.

Pre-Requisites:

Any module(s) which must have been taken prior to the current module, or any specific background required to take this module.

The modules QM0101, QM0102 and QM0204 must have been previously taken.