

## Course 2: Key Elements for Addressing the Global Dimension of Engineering

**Academic coordinator:** Dr. Jordi Peris, professor at Universitat Politècnica de València

### Syllabus

#### Overview

The practice of engineering involves much more than the mastery of technical subjects; in engineering design, non-technical factors and interactions can be just as significant. This is especially true when considering engineering from the perspective of international development work.

This course will provide participants with an overview of “international development” in its multitude of forms. The first three sessions will introduce new conceptions of development and provide a framework by which more specialized concepts of “sustainable” and “human” development can be understood.

Following this, the sessions will discuss theories and ideas such as gender, civic participation and citizenship, and analyse how these related to the definitions of development discussed earlier.

All discussions around development will relate back to engineering - what role does technology play in facilitating or contradicting ideas about development discussed within this course? When discussing specific ideas such as gender and citizenship in international development, the participant will be given the opportunity to reflect on the relationships between these and engineering practice in their own personal contexts.

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#### Learning outcomes:

By the end of the course the participant will be able to:

1. Analyse and examine critical debates on contemporary development practice, especially where these relate to engineering.
  2. Discuss the relationship between ideas such as citizenship and gender to development practice. Reflect on how these same ideas are represented in the engineering profession.
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**The course at a glance:**

Session	Week	Topic covered
1	1	New visions on development and cooperation
2	1	The capabilities approach to human development
3	2	Sustainable development
4	2	Participation, governance and citizenship
5	3	Gender perspectives and interculturality
0	3	Final Exam

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**Estimated time commitment**

This course will run for 3 weeks beginning on April 21<sup>st</sup>, 2014. In total, the course should take approximately 20-25 hours to complete, including readings, assignments and activities. Each session is equivalent to two hours in the classroom plus 3 hours of personal study, broken down as follows.

N.	Activity	Estimated time commitment
1	Reading & Coursework	100 minutes
2	Explore Further Materials	60 minutes
3	Review Quizzes	20 minutes
4	Academic Activity	90 minutes
5	Participation in Discussion Forums	(Minimum of) 30 minutes



## Course structure:

New lecture materials will be posted every Monday. Once posted, materials will be up for the duration of the course.

Each week, lecture material for two sessions will be posted. The lecture materials for each session will be comprised of one assigned reading, an Academic Activity, and a set of web resources, carefully selected to help participants deepen their understanding of the topics covered.

Session Review Quizzes will be posted online twice per week. They will be graded and passing the Review Quizzes is a requirement for passing the course. (For more information on course grading, please read the section entitled "Passing the Course").

The Academic Activity, included with each session, is designed to test your ability to put into practice what you have learnt during the sessions. **Only 2 of the 5 available Academic Activities will be graded. The course coordinator will announce the Academic Activities to be graded at the beginning of the course.** You will only be required to complete the 2 graded activities.

The Final Exam will take place in the last week of the course. It will be comprised of 30 questions covering all of the course material. Passing the Final Exam is a requirement of the course.

In addition to the graded activities, a discussion forum will run throughout the duration of the course. Each week, the course coordinator will post a discussion question related to the session topics. Participation in the discussion forum is not required to pass the course, and participants' discussion contributions will not be graded. However, students are **strongly encouraged** to participate in the discussion forum as the discussion and debate which will take place in the forums will greatly enhance student learning and topic engagement.

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## Quizzes/Assignments/Final exam:

### *Review Quizzes*

There are 5 quizzes in total, each comprised of 10 questions and worth 10 possible points. 2 review quizzes will be posted each week, evaluating participants understanding of the weekly session topics. All quizzes count towards the final grade and can be attempted twice. The quiz format is a mixture of True/False and Multiple Choice questions.

### *Academic activities*

Each session includes an academic activity for practicing key concepts learnt. Only 2 academic activities will be evaluated for grading. The course coordinator will indicate at the beginning of the course which activity will be evaluated, as well as provide detailed instructions and evaluation criteria. The completed activity must be uploaded on the

platform upon completion. Activities can be attempted only once; they worth a maximum of 10 points each, for a total of 20 points.

### *Final exam*

The final exam consists of a mix of 30 True/False and Multiple Choice questions covering all the course topics. It worth a maximum of 30 points. It can be attempted twice.

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### **Passing the Course**

To pass the course you should:

- Have submitted all review quizzes before the due date
- Have submitted the academic activities before the due date
- Have submitted the final exam before the due date
- Obtain a grade of at least 70 points in total

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### **Grading Policy**

Students who successfully complete the course will be offered a Statement of Accomplishment according to the following grading policy.

Grading Policy	
Statement of accomplishment	at least 70 points
Statement of accomplishment with distinction	at least 90 points

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Course 2: Key Elements for Addressing the Global Dimension of Engineering – COURSE TIMELINE

Course Start: April 21<sup>st</sup>

Sessions	Learning Outcomes By the end of the course you will be able to:		Due GA (Graded Activity)
Orientation	<ul style="list-style-type: none"> <li>Navigate the course</li> <li>Test your prior knowledge of course’s topics</li> <li>Know the other participants</li> </ul>	WEEK 0	<ul style="list-style-type: none"> <li>Read carefully the Syllabus</li> <li>Complete the orientation questionnaire</li> <li>Attempt quiz “test your knowledge” (ungraded)</li> <li>Introduce yourself to others participants (Forum)</li> </ul>
1. New visions on development and cooperation	<ul style="list-style-type: none"> <li>Identify critical perspective on the idea of development and aid.</li> <li>Present an overview of the historical evolution of the Development.</li> <li>Understand development education as a strategy for a more politicized view of development.</li> <li>Identify different alternative paradigms to economic development.</li> </ul>	WEEK 1	<ul style="list-style-type: none"> <li>Reading &amp; Coursework 1 (Release 21.04)</li> <li>Quiz 1 (Release 22.04 – Due 25.04) GA</li> <li>Discussion Forum (Release 22.04)</li> <li>Reading &amp; Coursework 2 (Release 21.04)</li> <li>Quiz 2 (Release 25.04 – Due 29.04) GA</li> <li>Academic Activity 1 (Release 24.04 – Due 30.04) GA</li> </ul>
2. The capabilities approach to human development	<ul style="list-style-type: none"> <li>Will learn the core elements of the capabilities approach to development</li> <li>Will be able to place the capabilities approach to human development in relation to other theories of development and assess the novelty of its contribution.</li> <li>Will be familiar with some examples of its operationalization ranging from more instrumental views to others that account for the multidimensionality of the concept.</li> </ul>		



3. Sustainable development	<ul style="list-style-type: none"><li>• To identify different discourses, images and approaches related to sustainability.</li><li>• To critically assess look critically at the discourses and actions of different actors and stakeholders within the current ecological crisis.</li><li>• To develop a political description of the concept 'sustainable development'.</li><li>• To understand alternative proposals challenging the concept 'sustainable development'.</li><li>• To understand opportunities for the introduction of sustainability principles into individual and organizational practices, especially in the field of engineering.</li></ul>	<b>WEEK 2</b>	<ul style="list-style-type: none"><li>• Reading &amp; Coursework 3 (Release 28.04)</li><li>• Quiz 3 (Release 29.04 – Due 02.05) <b>GA</b></li><li>• Discussion Forum (Release 29.04)</li><li>• Reading &amp; Coursework 4 (Release 28.04)</li><li>• Quiz 4 (Release 02.05– Due 06.05) <b>GA</b></li><li>• Academic Activity 2 (Release 30.04 – Due 07.05) <b>GA</b></li></ul>
4. Participation, governance and citizenship	<ul style="list-style-type: none"><li>• Recognize participation as a key element of sustainable human development</li><li>• Define democratic governance and acknowledge the implications of power relations</li><li>• Link participation with the notion of citizenship</li></ul>		



5. Gender perspective and interculturality	<ul style="list-style-type: none"><li>• To understand gender as a socially constructed category, and to become aware of the implications of this.</li><li>• To understand the conceptual foundations and implications of interculturality.</li></ul>	WEEK 3	<ul style="list-style-type: none"><li>• Reading &amp; Coursework 5 (Release 05.05)</li><li>• Quiz 5 (Release 06.05 – Due 09.05) GA</li></ul>
<b>Final exam</b>			