Universidad
Carlos III de Madrid
www.uc3m.es

## COURSE: ENERGY AND WATER

## DEGREE: ENERGY ENGINEERING

YEAR: 4
TERM: 2

| WEEKLY PLANNING |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \tilde{\sim} \\ & \tilde{\sim} \\ & 0 \\ & 2 \end{aligned}$ | DESCRIPTION | GROUPS (mark X) |  | Special room for session (computer classroom, audio-visual classroom...) | WEEKLY PROGRAMMING FOR STUDENT |  |  |
|  |  |  | LECTURES | SEMINARS |  | DESCRIPTION | CLASS HOURS | HOMEWORK HOURS (Max. 7h week) |
| 1 | 1 | Introduction: Water for society | X |  |  |  | 1,5 |  |
| 2 | 2 | Water for Energy <br> Fossil-fuel plants |  | X |  |  | 1,5 | 6 |
| 3 | 3 | Water use in fossil fuel power plants | X |  |  |  | 1,5 |  |
| 4 | 4 | Presentations of students of scientific papers |  | X |  |  | 1,5 | 7 |
| 5 | 5 | Laboratory 1 <br> Simulation of energy conversion processes | X |  | Computer room |  | 1,5 |  |
| 6 | 6 | Water use in renewable power plants and biofuels |  | X |  |  | 1,5 | 7 |
| 7 | 7 | Strategies to reduce water use - Efficiency enhancement measures | X |  |  |  | 1,5 |  |
| 8 | 8 | Energy for water |  | X |  |  | 1,5 | 7 |


|  |  | Main energy users in water processes |  |  |  |  |  |  |
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| 9 | 9 | Processes for desalination | X |  |  |  | 1,5 |  |
| 10 | 10 | Laboratory 2 <br> Energy requirement of the generation of water through desalination |  | X | Computer room |  | 1,5 | 7 |
| 11 | 11 | Presentations of students of scientific papers | X |  |  |  | 1,5 |  |
| 12 | 12 | a) Wastewater treatment and water purification <br> b) The role of renewable energy sources in the generation/purification of water |  | X |  |  | 1,5 | 7 |
| 13 | 13 | Test | X |  |  |  | 1,5 |  |
| 14 | 14 | Final Project presentation |  | X |  |  | 1,5 | 7 |
| Total 1 (Hours of class plus student homework hours between weeks 1-7) Subtotal 1 |  |  |  |  |  |  | 21 | 48 |
|  |  |  |  |  |  |  | 69 |  |



