ENERGIA para a SUSTENTABILIDADE
ENERGY for SUSTAINABILITY • EfS | UC
UNIVERSIDADE DE COIMBRA
UNIVERSITY OF COIMBRA

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Encontro EfS ♦ Empresas
Formação Avançada
Centro de Investigação do Território, Transportes e Ambiente,
3 dezembro 2014

www.uc.pt/efs
Summary

Last year and
Prospects on
Master Programme on Energy for Sustainability
PhD Programme on Sustainable Energy Systems
Possible new directions
Achievements
Master Programme on Energy for Sustainability

Admissions

64 initiated application
22 did not complete the application
7 did not pay on time
6 were not validated by administrative reasons
Of those accepted, 22 actually enrolled
Msc on EfS – Last year

<table>
<thead>
<tr>
<th>Curso \ Indicador</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEGI</td>
<td>130</td>
<td>76%</td>
<td>3.8</td>
<td>3.6</td>
<td>3.9</td>
<td>3.2</td>
<td>3.4</td>
<td>3.7</td>
<td>3.5</td>
<td>3.3</td>
<td>3.7</td>
<td>3.4</td>
</tr>
<tr>
<td>MEAUTO</td>
<td>4</td>
<td>80%</td>
<td>4.0</td>
<td>4.3</td>
<td>3.7</td>
<td>4.0</td>
<td>3.7</td>
<td>3.7</td>
<td>3.4</td>
<td>4.0</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>MEGI</td>
<td>48</td>
<td>80%</td>
<td>3.7</td>
<td>3.4</td>
<td>3.7</td>
<td>2.8</td>
<td>3.4</td>
<td>3.4</td>
<td>3.3</td>
<td>3.2</td>
<td>3.5</td>
<td>3.2</td>
</tr>
<tr>
<td>MEMAT</td>
<td>7</td>
<td>78%</td>
<td>4.0</td>
<td>3.7</td>
<td>4.4</td>
<td>4.0</td>
<td>3.7</td>
<td>3.9</td>
<td>4.0</td>
<td>4.0</td>
<td>3.9</td>
<td>2.8</td>
</tr>
<tr>
<td>MESUC</td>
<td>10</td>
<td>48%</td>
<td>4.0</td>
<td>4.3</td>
<td>4.0</td>
<td>4.0</td>
<td>3.9</td>
<td>3.7</td>
<td>4.1</td>
<td>4.1</td>
<td>4.0</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Inquiries

1st semester

2nd semester
Msc on EfS – Last year

<table>
<thead>
<tr>
<th>Inquiries</th>
<th>1st semester</th>
<th>2nd semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MESUC: 37</td>
<td>MESUC: 26</td>
</tr>
<tr>
<td>Energy for Sustainability</td>
<td>57% Ade.</td>
<td>75% Ade.</td>
</tr>
<tr>
<td>• Effort</td>
<td>27% Mod.</td>
<td>21% Mod.</td>
</tr>
<tr>
<td>• Perception</td>
<td>11% Pes.</td>
<td>4% Pes.</td>
</tr>
<tr>
<td>• Participation</td>
<td>0% Exc.</td>
<td>4% Exc.</td>
</tr>
<tr>
<td>• Overall satisfaction</td>
<td>0% N. Apli.</td>
<td>0% N. Apli.</td>
</tr>
</tbody>
</table>

5% Lig.  4.0  4.1  4.0  4.1  4.3  4.4  4.2  S/A
57% Ade. 4.1  4.1  4.0  4.1  4.3  4.4  4.2  S/A
27% Mod. 4.0  4.1  4.0  4.1  4.3  4.4  4.2  S/A
11% Pes. 4.1  4.1  4.0  4.1  4.3  4.4  4.2  S/A
11% Pes. 4.1  4.1  4.0  4.1  4.3  4.4  4.2  S/A
21% Mod. 4.4  4.4  4.5  4.4  4.4  4.4  4.4  S/A
0% Exc.  4.3  4.4  4.4  4.4  4.4  4.4  4.4  S/A
4% Exc.  4.3  4.4  4.4  4.4  4.4  4.4  4.4  S/A
Msc on EfS – Dissertations 2013/2014

Indoor Climate and Comfort (1)

Nuno Filipe Vaz Correia

Buildings and Urban Environment (5)

Ana Rita Mendes Amaral, Ashkan Ramezani Ivaki, José Miguel Branco Marques, Roham Torabikalaki; Tito Gonçalo Nunes Vilar Simões

Energy Systems and Policy (10)

Behrang Chenari, Guillermo Ivan de Loureiro Pereira, João Pedro da Silva Pereira, José Eduardo Fernandes Dias, Maximilian Karl Votteler, Mohammad Mohaghar, Nikola Sahovic, Seyedeh Shiva Saadatian, Zeinab Mousavi Karimi, Carlos Paulo Madeira Soares Branco
Msc on EfS – Prospects

Accreditation by A3Es

New regulator demands:

  More stringent criteria for admitting non-engineers
  Mandatory introductory course to fill education gaps

Tuition fees to raise sharply for non-EU students
PhD Programme on Sustainable Energy Systems

**Admissions:**

176 candidates (145 in the previous year), including 2nd phase

31 cases where UC was the 1st option (31 in the previous year)

15 candidates were admitted to the UC

Of these, 7 are ex-MSc-EfS students.

2 MPP scholarships (both ex-MSc-EfS students)

12 actually enrolled

Guillermo Pereira
Maria Gomes
Ana Amaral
Roham Torabikalaki
Thiago Vasques
Catarina Matos
Seyedmasoud Taheri
Flavio Orlandin
Amir Goodarzvand Chegini
Rodrigo da Silva
Joao Pereira
Juliana Gomes
PhD Programme on SES – Last year

Weakest items (<= 3.5 on the survey results)

There is no significant overlap between different modules

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>3.5</td>
<td>3.1</td>
<td>3.3</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Strongly Agree - 5
Strongly disagree - 1
PhD Programme on SES – Last year

Strongest items (<= 4.75 on the survey results)

The administrative support staff was readily available and was very efficient

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>4.8</td>
<td>4.8</td>
<td>4.3</td>
<td>5.0</td>
</tr>
</tbody>
</table>

The information (written and spoken) made available before the decision to attend and enter the course was easily accessible and of very high quality

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>5.0</td>
<td>4.0</td>
<td>3.4</td>
<td>4.3</td>
</tr>
</tbody>
</table>
PhD Programme on SES – Last year

Strongest items (<= 4.75 on the survey results)

The general conditions in the class room (lighting, acoustics, furniture, etc.) were very good

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>4.8</td>
<td>3.4</td>
<td>3.7</td>
<td>4.5</td>
</tr>
</tbody>
</table>

The course structure provided valuable opportunities to engage in interdisciplinary work

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>4.8</td>
<td>4.1</td>
<td>4.1</td>
<td>4.7</td>
</tr>
</tbody>
</table>
**PhD Programme on SES - Last year**

**Elective courses - general picture**

<table>
<thead>
<tr>
<th>Module/Question</th>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>The module was complex and difficult</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>This module has helped me to advance my abilities in understanding the whole of the subject matter and enabled me to apply the subject concepts to work beyond the classroom</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>The work load of this module was appropriate to the contents given</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Please evaluate the overall quality of teaching</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>The teaching methods and support material (slides, articles and information on website) were fully appropriate in achieving the course learning goals</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>The evaluation method that was used (assignments, exams, presentations, etc) was appropriate to the module objectives</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>The professor was available outside of class in person or via email/phone and provided appropriate and timely feedback on my work</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Please make an overall evaluation of the module</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>
## PhD Programme on SES – Last year

### Thesis 2013/2014

<table>
<thead>
<tr>
<th>Thesis</th>
<th>Ph.D</th>
<th>Supervisor(s)</th>
<th>Exam date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life cycle optimization model for integrated cogeneration and photovoltaic systems</td>
<td><strong>Amir Safaei</strong></td>
<td>C. Henggeler Antunes, F. Freire</td>
<td>Novembro</td>
</tr>
<tr>
<td>Conceptual BPS tools for Architects</td>
<td><strong>Eugénio Rodrigues</strong></td>
<td>A. Gaspar, J. Hensen</td>
<td>Julho</td>
</tr>
<tr>
<td>Environmental sustainable assessment of bioenergy: A life cycle multi-criteria decision-support approach</td>
<td><strong>Érica Geraldes Castanheira</strong></td>
<td>F. Freire</td>
<td>Junho</td>
</tr>
<tr>
<td>A Retrofit Decision Support Approach for Improving Energy Efficiency and Indoor Environmental Quality in Buildings</td>
<td><strong>Ehsan Asadi</strong></td>
<td>M.C. Gameiro da Silva, C. Henggeler Antunes, L. Dias</td>
<td>Novembro</td>
</tr>
<tr>
<td>Energy and exergy assessments for an enhanced use of energy in buildings</td>
<td><strong>Pedro Gonçalves</strong></td>
<td>A. Gaspar, M.C. Gameiro da Silva</td>
<td>Novembro</td>
</tr>
</tbody>
</table>
PhD Programme on SES – Prospects

New Joint Programme (doutoramento em associação)

4 years (240 ects) instead of 3, more realistic

Mandatory courses (the same at all three universities): 30 ECTS

**Research Methodologies** (6ECTS) 1st S
Luis Adriano, Manuel Heitor

**Thesis Project** (12ECTS) 2nd S
Luis Dias, Peças Lopes, João Serra

**Innovation and Entrepreneurship** (6ECTS) 1st S
MIT Portugal

**Energy Environment and Sustainability** (6ECTS) 1st S
Paulo Ferrão, Fausto, Vítor Leal
Specialization programme on EfS

12 candidates started the application process
8 did not complete the application
2 did not pay on time
Of the 2 actually admitted, 1 enrolled
New education and training options - prospects

Non awarding degree programmes

- As a public service to stakeholders
- As a source of income
- As a way of further stimulating demand for the Msc Programme

Some possibilities

- Specific modules (including e-learning)
- Promoting specific existing courses
- New specialization courses, based on the existing Msc areas
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