820038 - ATMB - Medical Technology Evaluation. Technical, Ethical and Social Aspects

Degree competences to which the subject contributes

Transversal:
1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
2. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.
3. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.

Learning objectives of the subject

Understand the relationship between efficacy and safety in medical procedures. Ability to apply mathematical tools to the evaluation of medical technology. Understand the ethical dimension of medical technologies. Ability to critically analyze the evidences supporting the use medical technologies.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 45h</th>
<th>30.00%</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hours small group: 15h</td>
<td>10.00%</td>
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<tr>
<td></td>
<td>Self study: 90h</td>
<td>60.00%</td>
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Expositive classes, group work, group discussions, project based learning, public presentations
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## Introduction to the evaluation of medical technologies

| Description: | Technology types. Evaluation aspects: efficacy, safety, ethical, ... |
| Specific objectives: | Understand the relationship between the different aspects in the evaluation of medical technology. |

### Learning time: 8h
- Theory classes: 4h
- Self study: 4h

## Assessing efficacy and safety

| Description: | Terminology. Assessment methodologies. Likelihood, relative probability, conditional probabilities, Receiver Operating Characteristics - ROC |
| Specific objectives: | Understand the differences between assessment methods. Ability to apply statistic procedures to different assessment situations and to understand the results. |

### Learning time: 15h
- Theory classes: 7h
- Self study: 8h

## Evidence Based Healthcare

| Specific objectives: | Understand the statistic requirements of clinical essays. Understand the different ethical aspects of clinical studies. Ability to apply statistical tools to particular cases and to analyze the conclusions. |

### Learning time: 15h
- Theory classes: 7h
- Self study: 8h
### Ethical aspects in the assessment of medical technologies

**Learning time:** 15h
- Theory classes: 7h
- Self study: 8h

**Description:**

**Specific objectives:**
Understand the need for ethical evaluation of medical devices. Gain knowledge on the different evaluation models. Ability to apply the models to specific cases and draw conclusions.

### Case-studies: well established medical technologies

**Learning time:** 48h 30m
- Theory classes: 10h
- Laboratory classes: 7h 30m
- Self study: 31h

**Description:**
Analysis of evaluation of daily use medical technologies (mammography, CT-Scan, prostate screening, nuclear medicine).

**Related activities:**
Group work and public presentation.

**Specific objectives:**
Understand the assessments of current medical technologies and draw conclusions on different aspects: benefit, cost, safety, efficacy, ethics, ...

### Case-studies: incipient medical technologies

**Learning time:** 48h 30m
- Theory classes: 10h
- Laboratory classes: 7h 30m
- Self study: 31h

**Description:**
Analysis of evaluation of incipient medical technologies. Evidence and scientific credibility of the technology.

**Specific objectives:**
Understand the assessment of incipient of dubitrous medical procedures and draw critical conclusion on different aspects: scientific evidence, benefit, efficacy, safety, cost, ethics.
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Qualification system

Final exam: 20%
Work presentation along the semester: 40%
work reports: 20%
Specific tests: 20%

Bibliography

Basic:


Others resources:

Hyperlink
http://www.inahta.net/

http://www.cochrane.org/