האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Evidence-based medicine - 96215

Last update 27-02-2019

HU Credits: *2.5*

Degree/Cycle: *1st degree (Bachelor)*

Responsible Department: *Medicine*

Academic year: *0*

Semester: *Yearly*

Teaching Languages: *English*

Campus: *Ein Karem*

Course/Module Coordinator: *Dr. Tom Axelrod*

Coordinator Email: *Tom.axelrod@mail.huji.ac.il*

Coordinator Office Hours: *Most of the day by Email*

Teaching Staff:

Prof Matan JOEL Cohen,
Mr. Michael Hauzer,
Dr. Tom Axelrod

Course/Module description:

The course is constructed around a series of exercises in which the participants are required to read clinically oriented scientific research publications. Through the exercises, the participants will be exposed to the challenges of processing and critiquing of data in the clinical scientific literature; the participants will, thereby, be introduced to epidemiological and biostatistical principles; and the hierarchy pyramid of clinical information will be presented. Additionally, the concept of diagnosis and the rational use of diagnostic tests will be taught and the methods of probabilistic diagnosis will be presented. These knowledge and skills will serve to teach the fundamental principles of EBM. The course will be delivered through self-study exercises, class exercises and small group work, class debates, lectures and online material.

Course/Module aims:

Provision of knowledge, tools and honing of skills in the field of clinically oriented epidemiology in order to provide a platform for active and critical learning of the medical professions as students and doctors.

Learning outcomes - On successful completion of this module, students should be able to:

1. Read and critically appraise clinical research publications
2. Compare scientific reports, assess their quality and the validity of their findings
3. Appreciate the utility of diagnostic tests in differentiating between the sick and healthy
4. Critically appraise information with regard to diagnostic and therapeutic decisions and with regard to associations between exposure and disease and health protection.

Attendance requirements(%):

80

Teaching arrangement and method of instruction: Reading, exercises, active class participation, peer assessment exercise, lectures, small group tutoring and online learning.

Course/Module Content:

Tools:

Searching literature
Quantification of uncertainty:
Precision, accuracy, Validity, reliability: sensitivity, specificity, LR, ROC
Quantification of effect or difference: RR, RD, OR, RRR, NNT, NNH
Basic statistics – reminder: Type 1 & 2 errors, hypothesis testing, correlation

Concepts:
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1. Clinical uncertainty: probabilistic thinking vs. deterministic thinking
2. Random errors, cognitive biases; confounding
3. Hierarchy of evidence: different research designs
4. Meta-analysis & systematic reviews of evidence
5. Causality
6. Industry-driven distortion of evidence
7. Problem of multiple testing and data dredging
8. Research ethics & scientific integrity
9. Screening, disease mongering, public health
10. Principles of decision analysis
11. Principle of cost-effectiveness
12. Examples of rational clinical examination

Required Reading:
Papers from scientific medicine journals + texts from the course anthology.

Additional Reading Material:
1. Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB & Richardson WS. Evidence based medicine: what is it and what it isn't. BMJ 1996;312:71-72

2. Sackett DL, Straus SE, Richardson WS, Rosenberg WMC & Haynes RB. Evidence-based medicine. How to Practice & Teach EBM. Curchill Livingstone, Edinburg, 2000, 2nd edition

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 0 %
Participation in Tutorials 30 %
Project work 30 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 40 %

Other 0 %

Additional information: