The Hebrew University of Jerusalem

Syllabus

INFINITESIMAL CALCULUS 3 - 80415

Last update 09-12-2021

<u>*HU Credits:*</u> *6*

<u>*Degree/Cycle:*</u> *1st degree (Bachelor)*

<u>*Responsible Department:*</u> *Mathematics*

<u>*Academic year:*</u> *0*

<u>*Semester:*</u> *1st and/or 2nd Semester*

<u>*Teaching Languages:*</u> *Hebrew*

<u>*Campus:*</u> *E. Safra*

<u>*Course/Module Coordinator:*</u> *Dr. Cy Maor*

<u>*Coordinator Email:*</u> [*cy.maor@mail.huji.ac.il mozes@math.huji.ac.il*](cy.maor@mail.huji.ac.il)

<u>*Coordinator Office Hours:*</u>

<u>*Teaching Staff:*</u>

Dr. Cy Maor,
Prof Shahar Mozes,
Mr. Daniel Ofner,
Mr. Deutsch Arye

Course/Module description:
  Rigorous course in calculus of functions in several real variables.

Course/Module aims:
  Familiarity with basic metric space theory, differentiation and Riemann integration of functions in R^N.

Learning outcomes - On successful completion of this module, students should be able to:
  Familiarity with basic concepts in metric space theory.
Familiarity with calculus of functions in several variables.
Familiarity with mathematical notions.

Attendance requirements(%):

Teaching arrangement and method of instruction: Lecture + recitation

Course/Module Content:
  Metric and normed spaces, open and closed sets, continuity, compactness and completeness, functions between Euclidean spaces, partial derivatives and differentiability, Taylor's theorem, classification of critical points, inverse function theorem, inverse- and implicit-function theorems, Lagrange multipliers, Riemman integration in R^N, Fubini theorem, change of variable theorem.
Other topics may be taught.

Required Reading:
 none

 Additional Reading Material:
  none

Course/Module evaluation:
End of year written/oral examination 90 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 10 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
  Other or additional topics may be studied.