Syllabus

Riemannian geometry of diffeomorphism groups - 80833

 Last update 14-09-2020

HU Credits: *2*

Responsible Department: *Mathematics*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *Hebrew*

Campus: *E. Safra*

Course/Module Coordinator: *Dr. Cy Maor*

 Coordinator Email: cy.maor@mail.huji.ac.il

Coordinator Office Hours: *By Appointment*

Teaching Staff:
  Dr. Cy Maor

Course/Module description:

Riemannian geometry of diffeomorphism groups (and related spaces) arises naturally in a variety of different contexts ⬡ from completely pure to applied and even computational mathematics. I will give an introduction to the topic, with a tentative outline as follows:

1. Introduction to infinite dimensional Riemannian geometry
2. Spaces of interest and metrics of interest (mainly in shape analysis and mathematical hydrodynamics)
3. Metric properties of diffeomorphism groups: vanishing distance phenomenon, diameter, metric completeness
4. Geodesic equations: short time existence, regularity of geodesics (following Ebin⬡Marsden), geodesic completeness

Course/Module aims:
Same as in learning outcomes.

Learning outcomes - On successful completion of this module, students should be able to:
Familiarity with the subject and open questions in it.

Attendance requirements(%):
100

Teaching arrangement and method of instruction: Irrelevant - determined between the teacher and the student.

Course/Module Content:
See course description

Required Reading:
Course notes

Additional Reading Material:
Irrelevant

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 0 %

Participation in Tutorials 0 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 100 %
100

<u>*Additional information:*</u>