



Syllabus

Stability conditions - 80970

Last update 14-10-2020

HU Credits: 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: Mathematics

Academic year: 0

Semester: 1st Semester

Teaching Languages: English

Campus: E. Safra

Course/Module Coordinator: Dr. Jake P. Solomon, Dr. Yoel Groman

Coordinator Email: ygroman@gmail.com

Coordinator Office Hours: By appointment.

Teaching Staff:

*Dr. Yoel Groman,
Prof Jake Solomon*

Course/Module description:

We will discuss stability conditions on triangulated categories following the work of Douglas and Bridgeland. Concrete examples of stability conditions will be given from symplectic and algebraic geometry, which will also illustrate mirror symmetry. An effort will be made to give a gentle introduction to the relevant background material from category theory, symplectic geometry and algebraic geometry. We will also discuss the motivation for the study of stability conditions, especially the existence problem for special Lagrangian submanifolds, moduli spaces of stable objects, and monodromy actions.

Course/Module aims:

Same as in learning outcomes.

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

Ability to prove and apply the theorems presented in the course.

Ability to apply correctly the mathematical methodology in the context of the course.

Acquiring the fundamentals as well as basic familiarity with the field which will assist in the understanding of advanced subjects.

Ability to understanding and explain the subjects taught in the course.

Attendance requirements(%):

Teaching arrangement and method of instruction: Participation in Tutorials

Course/Module Content:

See course description

Required Reading:

none

Additional Reading Material:

Gelfand-Manin, "Methods of homological algebra".

Weibel, "Introduction to homological algebra".

Mcduff-Salamon, "Introduction to symplectic topology".

<http://arxiv.org/abs/math/0207021>

<http://arxiv.org/abs/math/0212214>

<http://arxiv.org/abs/1606.02169>

<http://arxiv.org/abs/1607.01262>

Course/Module evaluation:

End of year written/oral examination 0 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %

Assignments 100 %

Reports 0 %

Research project 0 %

Quizzes 0 %

Other 0 %

Additional information: