

MAT 6932 SEMINAR IN NUMBER THEORY SPRING 2022

This syllabus is subject to change. Last change was made 9:25pm, December 31, 2021.

Course: MAT 6932 (Seminar in Number Theory) (3 credits)

Topic: Modular Forms and Mock-Theta Functions

Lecturer: Dr. F. Garvan (Office: LIT 498; Email: fgarvan@ufl.edu;
Phone: 294-4305)

Section: 1014 (Spring 2022)

Location: BLDG 105 Room 234

Time: MWF 6 (12:50 – 1:40pm)

Office Hours: TBA or by appointment.

Prerequisites:

A basic knowledge of analysis and complex function theory.

Outline:

Ramanujan introduced mock theta functions in his last to Hardy in 1920. We follow the development of Ramanujan's mock theta functions up until the present time. Along the way we cover some theory of basic hypergeometric functions and classical modular forms. In 1987 Freeman Dyson issued the challenge of developing the group theoretic structure of mock theta functions analogous to the theory of classical modular forms. The first major advance was in 2003 when Sander Zwegers showed how Ramanujan's mock-theta functions fit into the theory of real analytic modular forms. We will study how modern mathematics has taken up Dyson's challenge and cover any needed background material.

Text:

There is no required text. Links to online reading will be given.

Grading:

Grades will be based on either some homework or a class presentation.

Homework Assignments:

Homework assignments will be assigned regularly and graded.

Additional Information:

Grades. Grading will be in accord with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> (<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>). Also see the current UF policy on assigning grade points. (<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>)

Academic Honesty. The course will be conducted in accordance with the University honor code and academic honesty policy

UF students are bound by The Honor Code Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have questions or concerns please consult with the instructor.

Accommodation for students with disabilities. Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://disability.ufl.edu/> (<https://disability.ufl.edu/>)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Online Evaluations. "Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu> (<https://evaluations.ufl.edu>). Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>."

Additional Information- Health and Wellness:

U Matter, We Care:

If you or a friend is in distress, please contact ummatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center:

<https://www.counseling.ufl.edu> (<https://www.counseling.ufl.edu>); 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS):

Student Health Care Center, 392-1161.

University Police Department:

392-1111 or 9-1-1 for emergencies, <http://www.police.ufl.edu/>

Additional Information- Academic Resources:

E-learning technical support
352-392-4357 (option 2)
Learningsupport@ufl.edu

Career Connections Center:
Reitz Union, 392-1601.
Career assistance and counseling, <https://career.ufl.edu>

Library Support:
<http://cms.uflib.ufl.edu/ask>

Additional Information- Diversity Statement:

The Mathematics Department is committed to diversity and inclusion of all students. We acknowledge, respect, and value the diverse nature, background and perspective of students and believe that it furthers academic achievements. It is our intent to present materials and activities that are respectful of diversity: race, color, creed, gender, gender identity, sexual orientation, age, religious status, national origin, ethnicity, disability, socioeconomic status, and any other distinguishing qualities.

[Edit \(https://people.clas.ufl.edu/fgarvan/wp-admin/post.php?post=3014&action=edit\)](https://people.clas.ufl.edu/fgarvan/wp-admin/post.php?post=3014&action=edit)



© 2022 University of Florida (<http://www.ufl.edu/>), Gainesville, FL 32611; (352) 392-3261. Page Updated: December 31, 2021

This page uses Google Analytics (<http://www.google.com/analytics/>) (Google Privacy Policy (http://www.google.com/intl/en_ALL/privacypolicy.html))