



MATH 8398 Interdisciplinary Research Syllabus

Course Information

Edinburg ROOM NOT NEEDED

Traditional Face-to-Face

This is an Interdisciplinary Research Course for PhD students.

Instructor Information

Zhijun Qiao

Email: zhijun.qiao@utrgv.edu

Office Phone: 956 665 3460

Office Location

EMAGC 3.722

Office Hours: Office Hours: M & W 3:30pm-4:30pm (via Zoom at <https://utrgv.zoom.us/j/2824166420>) or by appointment.

BIO: Dr. Zhijun Qiao, President's Endowed Professor, University of Texas Rio Grande Valley. Dr. Qiao received PhD degree of Mathematics 1997 from Fudan University. His research interests include nonlinear partial differential equations, integrable systems and nonlinear cusp solitary waves, KdV equations and soliton theory, integrable symplectic mapping, R-matrix theory, radar image processing and inverse problems in mathematical physics. In 1999, he won one of the hundred best doctoral dissertations in all natural and social sciences in China. From 1999 to 2001, he was Humboldt fellow in Kassel University, Germany. He was awarded the University of Texas Distinguished Research Award in

2013 and the University of Texas President's Endowed Professor in 2016. Dr. Qiao was awarded a Fulbright Specialist in 2023. Dr. Qiao was the PI of more than 20 national and international research grants. He published more than 150 academic papers and 2 books including top ranking journals Communications in Mathematical Physics, IEEE Transaction on Geoscience and Remote Sensing (TGRS). He is currently serving on the editorial board of Studies in Applied Mathematics and editor-in-chief of Journal of Nonlinear Mathematical Physics. He advised more than 40 graduate students doing master thesis and doctoral dissertation. See more details at <https://faculty.utrgv.edu/zhijun.qiao/>

Course Description

This is a 3-credit hour course that will prepare students for interdisciplinary research and the Ph.D. candidacy exam in the field of expertise of their advisor(s). The coursework will include contributions from academic disciplines such as physics, engineering, computer science, biology, biomedical science, environmental science, or economics, that build knowledge requisite for research in multiple areas. By the end of the course sequence, the student must present the dissertation research proposal before the Ph.D. candidacy committee. This course is an independent study for a student to begin their research and prepare for their candidacy exam under the supervision of their advisor(s). Prerequisite: Graduate standing and consent of the instructor or program director.

Credit Hours: 3

Tentative Calendar of Activities

This is an interdisciplinary research course. We gonna meet at least two times a week during summer 3.

Course Learning Objectives

This is an interdisciplinary research course for doctoral students. Student needs to get well-prepared for the PhD candidacy exam.

Assessment of Learning

Grading Components:

Grading Scale

Letter	Numerical Value
A	90 - 100
B	80 - 89
C	70 - 79
D	60 - 69
F	Below 60

Required Readings and Materials

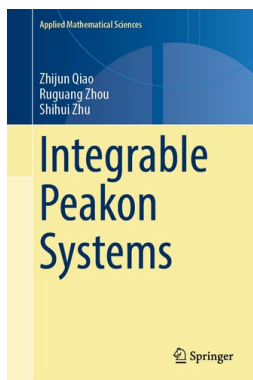
Integrable Peakon Systems

ISBN: 978-3032177797

Authors: Zhijun Qiao

Publisher: Springer

Technology Needs



Integrable Peakon Systems

University Attendance Policy

[UTRGV's attendance policy.](#)

University Policy on Recordings in Class

The use of classroom recordings is governed by the Federal Educational Rights and Privacy Act (FERPA), UTRGV's acceptable-use policy, and UTRGV HOP Policy STU 02-100 Student Conduct and Discipline. A recording of class sessions will be kept and stored by UTRGV, in accordance with FERPA and UTRGV policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. You may not share recordings outside of this course. As referenced in [UTRGV HOP Policy STU 02-100 Student Conduct and Discipline](#), doing so may result in disciplinary action. This is an instruction from university officials.

Course Use of Artificial Intelligence (AI)

N/A

University Academic Integrity Statement

Academic integrity is fundamental in our actions, as any act of dishonesty conflicts as much with academic achievement as with the values of honesty and integrity. Violations of academic integrity constitute academic dishonesty and include, but are not limited to: [cheating, plagiarism \(including self-plagiarism\), and collusion](#); submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts ([UT System Board of Regents Rules and Regulations](#), [UTRGV Handbook of Operating Procedures STU 02-100](#), and [UTRGV Academic Integrity Guidelines](#), Academic Dishonesty Guidelines).

All violations of Academic Dishonesty will be reported to Student Rights and Responsibilities in accordance with [HOP STU 02-100, Student Code of Conduct](#).

Student Support Resources

Student Support Services

Center Name	E-Mail
Advising Center	AcademicAdvising@utrgv.edu
Career Center	CareerCenter@utrgv.edu
Counseling Center	Counseling@utrgv.edu
Food Pantry	FoodPantry@utrgv.edu
Learning Center	LearningCenter@utrgv.edu
University Library	circulation@utrgv.edu
Writing Center	WC@utrgv.edu
UCentral	ucentral@utrgv.edu
Brightspace Assistance (COLTI)	Ticket Portal

University Policy Statements

SEXUAL MISCONDUCT AND MANDATORY REPORTING

In accordance with UT System and institutional policies, your instructor is a “Responsible Employee” for mandatory reporting purposes under Title IX regulations and Texas Education Code sections 51.251-252 and must report any instance of sexual misconduct by or against a student or employee of the institution, which includes sexual assault, stalking, dating violence, domestic violence, and sexual harassment to the [Office of Title IX and Equal Opportunity](#) (otixeo@utrgv.edu). More information can be found on the [OTIXEO website](#). If students, faculty, or staff would like confidential assistance, or have questions, they can contact OAVP ([Office for Advocacy & Violence Prevention](#)).

STUDENT ACCESSIBILITY SERVICES

[Student Accessibility Services](#) has offices on Brownsville and Edinburg campuses. [Visit the SAS web page to learn more and explore accessibility services.](#)

STUDENTS WITH DISABILITIES

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive reasonable academic accommodations should contact [Student Accessibility Services \(SAS\)](#) for additional information. The student must apply for accommodations using the [mySAS portal](#) and is responsible for providing sufficient documentation of the disability to SAS. Upon submission of the request, students should expect to participate in an interactive discussion, or an intake appointment, with SAS staff. Accommodations may be requested at any time but are not granted retroactively, meaning they are valid moving forward after approval by SAS. Academic accommodations will not apply prior to SAS' approval. Students should contact SAS early in the semester/module for guidance.

Students who experience a broken bone, severe injury, or undergo surgery may also be eligible for temporary accommodations. Please contact [Student Accessibility Services \(SAS\)](#) for more information.

PREGNANCY, PREGNANCY-RELATED, AND PARENTING ACCOMMODATIONS

Title IX of the Education Amendments of 1972 prohibits discrimination based on sex, which includes discrimination based on pregnancy, marital status, or parental status.

Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting should submit the request using the form found at [Pregnancy and Parenting | UTRGV](#).

MANDATORY COURSE EVALUATION PERIOD

Students have the opportunity to complete an ONLINE evaluation of this course through Watermark Course Evaluations and Surveys, which may be accessed through my.UTRGV or the Brightspace course module. Course evaluations are used by the instructor to inform revisions of the

course to ensure student success. Course evaluations are also used by the instructor for annual performance review, promotion applications, teaching award applications, among others.