



## Syllabus { PHYS 627 { Spring 2024

Course Information:

Identify all kinetic/ fluid waves and instabilities.

- (d) Students must acknowledge all sources of information { included fellow students { used in homework solutions and nal projects. The UAF catalog states: \The university may initiate disciplinary action and impose disciplinary sanctions against any student or student organization found responsible for committing, attempting to commit or intentionally assisting in the commission of . . . cheating, plagiarism, or other forms of academic dishonesty. . . \
- (e) All UA student academics and regulations are adhered to in this course. You may nd these in the UAF catalog (section \Academics and Regulations").

**COVID-19 statement:** Students should keep up-to-date on the university's policies, practices, and mandates related to COVID-19 by regularly checking this website: <https://sites.google.com/alaska.edu/coronavirus/uaf?authuser=0> Further, students are expected to adhere to the university's policies, practices, and mandates and are subject to disciplinary actions if they do not comply.

**Student protections statement:** UAF embraces and grows a culture of respect, diversity, inclusion, and caring. Students at this university are protected against sexual harassment and discrimination (Title IX). Faculty members are designated as responsible employees which means they are required to report sexual misconduct. Graduate teaching assistants do not share the same reporting obligations. For more information on your rights as a student and the resources available to you to resolve problems, please go to the following site: <https://catalog.uaf.edu/academics-regulations/students-rights-responsibilities/>.

**Disability services statement:** I will work with the Office of Disability Services to provide reasonable accommodation to students with disabilities.

**ASUAF advocacy statement:** The Associated Students of the University of Alaska Fairbanks, the student government of UAF, offers advocacy services to students who feel they are facing issues with staff, faculty, and/or other students specifically if these issues are hindering the ability of the student to succeed in their academics or go about their lives at the university. Students who wish to utilize these services can contact the Student Advocacy Director by visiting the ASUAF office or emailing [asuaf.office@alaska.edu](mailto:asuaf.office@alaska.edu).

**Student Academic Support:**

Speaking Center (907-474-5470, [uaf-speakingcenter@alaska.edu](mailto:uaf-speakingcenter@alaska.edu), Gruening 507)

Writing Center (907-474-5314, [uaf-writing-center@alaska.edu](mailto:uaf-writing-center@alaska.edu), Gruening 8th floor)

UAF Math Services, [uaf-traccloud@alaska.edu](mailto:uaf-traccloud@alaska.edu), Chapman Building (for math fee paying students only)

Developmental Math Lab, Gruening 406

status as a protected veteran, marital status, changes in marital status, pregnancy, childbirth or related medical conditions, parenthood, sexual orientation, gender identity, political affiliation or belief, genetic information, or other legally protected status. The University's commitment to nondiscrimination, including against sex discrimination, applies to students, employees, and applicants for admission and employment. Contact information, applicable laws, and complaint procedures are included on UA's statement of nondiscrimination available at [www.alaska.edu/nondiscrimination](http://www.alaska.edu/nondiscrimination). For more information, contact:

UAF Department of Equity and Compliance  
1692 Tok Lane, 3rd floor, Constitution Hall, Fairbanks, AK 99775  
907-474-7300  
uaf-deo@alaska.edu

Additional syllabi statement for courses including off-campus programs and research activities:  
University Sponsored Off-Campus Programs and Research Activities  
We want you to know that:

UA is an AA/EO employer and educational institution and prohibits illegal discrimination against any individual: [www.alaska.edu/nondiscrimination](http://www.alaska.edu/nondiscrimination).

Incidents can be reported to your university's Equity and Compliance office (listed below) or online reporting portal. University of Alaska takes immediate, effective, and appropriate action to respond to reported acts of discrimination and harassment.

There are supportive measures available to individuals that may have experienced discrimination.

University of Alaska's Board of Regents' Policy & University Regulations (UA BoR P&R) 01.02.020 Nondiscrimination and 01.04 Sex and Gender-Based Discrimination Under Title IX, go to: <http://alaska.edu/bor/policy-regulations/>.

UA BoR P&R apply at all university owned or operated sites, university sanctioned events, clinical sites and during all academic or research related travel that are university sponsored.

For further information on your rights and resources go to <https://www.alaska.edu/equity/titl-ex-student-placement-guidelines/>.

#### Tentative Schedule:

Topic	Week	Dates
Review, Vlasov Equation	1	Jan 16, 18
Vlasov Equation	2	Jan 23, 25
Kinetic waves/instabilities	3	Jan 30, Feb 1
Dispersive Alfvén waves	4	Feb 6, 8
Pressure anisotropy (waves/instabilities)	5	Feb 13, 15
Multi-species plasma waves	6	Feb 20, 22
<i>No class (or possible guest lecture)</i>	7	Feb 27, 29
Radio waves	8	Mar 5
<b>Midterm Exam</b>	8	Mar 7
<i>Spring break{no class</i>	9	Mar 12, 14
Fluid instabilities, MHD equilibria	10	Mar 19, 21
Reconnection	11	Mar 26, 28
Nonlinear plasma physics	12	April 2, 4
Turbulence	13	April 9, 11
Waves in inhomogeneous plasma/Mode conversion	14	April 16, 18
Review + In-class presentations	15	April 23, 25
<b>Final exam</b>	16	8{10 a.m., Thursday, May 2