

# Syllabus, Information, & Policies

**Theory of Solid State II: Phys 7450, Fall 2018 (3 credits)**

**Where: Duane D142**

**When: Mondays & Fridays, 1:55PM - 3:10 PM**

**Web page:** [http://spot.colorado.edu/~smalyukh/SolidState/solidstate7450\\_fa2018.html](http://spot.colorado.edu/~smalyukh/SolidState/solidstate7450_fa2018.html)

*Office:* Gamow Tower, F-521;

*Office hours: Wednesdays, 2:00-3:00 PM & by appointment, Gamow Tower office F-521*

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*Telephone:* 303-492-7277 (office); 303-492-6530 (lab)

**Updates to the syllabus may be made on the webpage (and will be announced in class), and will take precedence over the original paper version!**

**Grader:** Samuel Johnson, Office hours: Wednesdays, 10-11AM; Email: [Samuel.C.Johnson@colorado.edu](mailto:Samuel.C.Johnson@colorado.edu)

## **Course Goals:**

The catalog description of the Phys 7450 course reads: “The second semester of condensed matter physics covers topics in soft condensed matter physics, liquid crystals, semiconductors, Quantum Hall effect, Fractional Quantum Hall effect, superconductivity, and other topics at the discretion of the instructor.” For details, see <https://catalog-archive.colorado.edu/2016-17/node/188349.html>. Phys 7450 Course will build on other graduate condensed matter physics courses, including Phys 7430 and Phys 7440. This course will expand your introduction to condensed matter physics, including solid-state physics and physics of other condensed matter systems. The course will build your appreciation of the breadth and diversity of condensed matter systems and phenomena. Another important goal in this course is to give students a working knowledge of ideas they will apply daily as they move on to condensed matter research. The topics covered this semester include structure of matter, optical and mechanical properties of crystals, ferromagnetism, Landau theory and tensorial order parameters, topology in condensed matter, etc.

## **Grading:**

<b>Midterm Exam or Project (end of October)</b>	<b>20%</b>
<b>Final Exam or Project (Finals week)</b>	<b>40%</b>

<b>HW's and Projects</b>	<b>40%</b>
<b>TOTAL</b>	<b>100%</b>

### **Homeworks**

There will be ~10 homework and project assignments. They should be turned in right before the class meetings at which they are due (as indicated on the assignment). Late homeworks/projects cannot be accepted except in extenuating circumstances. You may work together on homework assignments as long as you participate creatively in solving the problems, and understand what you write. You must write up your solutions on your own. I strongly suggest that you first get as far as you can on each assignment on your own. Then, discuss and work on the problems with your classmates, and, finally, write it up on your own. The HWs and Projects should be submitted by uploading files into the Google Drive folders (see the links and instructions in the emails that you received from the instructor).

### **Disabilities Policy**

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu). If you have a temporary medical condition or injury, see [Temporary Injuries guidelines](#) under the Quick Links at the [Disability Services website](#) and discuss your needs with your professor.

### **Policy on Religious Observances**

See Professor Smalyukh at beginning of semester if you will be absent from class during a valid religious observance so that reasonable accommodation can be considered. Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance.

See [campus policy regarding religious observances](#) for full details.

### **Policy on Cheating**

All students of the University of Colorado at Boulder are responsible for knowing and adhering to [the academic integrity policy](#) of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Additional information regarding the [Honor Code policy can be found online](#) and at the [Honor Code Office](#).

### **Behavior Issues**

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the [policies on classroom behavior](#) and [the student code](#).

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected

Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been discriminated against should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or the Office of Student Conduct and Conflict Resolution (OSC) at 303-492-5550. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be found at the [OIEC website](#). The [full policy on discrimination and harassment](#) contains additional information.

### **Technology in class**

To ensure a distraction free environment for all students, laptops, MP3 players, cell phones, and similar devices are not allowed to be used during lecture.

### **Other Information/Policies**

**Homework/exam answer sheets:** Answer sheets will be posted on the course web page.

**Show your work:** You will not get credit for simply stating a word or number for your answer. You must show your reasoning, calculations, and write a paragraph for full credit. If you are asked to make a drawing, be NEAT. Label parts of your diagrams.

**Calculator:** You will need a calculator that uses scientific notations.

### **Disclaimer**

Any information in this syllabus is as accurate as is possible at the time of writing. Announcements about changes of any kind will be made via e-mail as well as in class and on the web page, and will take precedence over this syllabus. You are responsible for announcements made in class (whether or not you are in attendance), via e-mail, as well as in class and on the web page.