## PHZ 4404 Intro Solid State Physics "in vivo" schedule Spring 2023

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black text: projected and tentative; purple text: past; blue text: hotlinks; red text important announcements; green text: final exam window

Note: Schedule is "projection" and revisions will be announced in class and subsequently posted online. Immediate schedule is approximately correct, whereas the timing for the future is a COARSE estimate.

**Key:** ICyz-mmdd = In-class graded exercise number yz – scheduled on mm(month)dd(day), ICyz-mmdd-TH = see above but TH means "take-home" to submit on Canvas, HW = Homework, LecXX = Lecture XX, F2F = Face-to-Face

**Expectation is that you will maintain the pace of reading/working in the textbook.** 

| Week 01 | Jan 09 (Lec00)  | Introduce the Course, Review the Syllabus and Schedule.   |
|---------|-----------------|---|
|         | Jan 11 (Lec01)  | Start-Finish Ch 1. Start Ch. 2.   |
|         | Jan 13 (Lec02)  | IC03-0113-TH assigned and due by start of next class, Jan 18. Finish Ch. 2. Check ELS gradebook to see your grade(s)! HW1-0113 described. Due at start of class on Wed. Jan 25. |
| Week 02 | Jan 16          | No class – Martin Luther King Jr. National Holiday.   |
|         | Jan 18 (Lec03)  | Resolve remaining questions about Ch. 2 and HW1. Finish Ch. 2.  |
|         | Jan 20 (Lec04)  | Start Ch. 3.  |
|         |                 |   |
| Week 03 | Jan 23 (Lec05)  | Finish Ch. 3. Start Ch. 4.  |
|         | Jan 25 (Lec06)  | HW1-0118 hardcopy due at the start of class.  |
|         | Jan 27 (Lec07)  | HW1-0118 returned. Continue Ch. 4.  |
|         |                 |   |
| Week 04 | Jan 30 (Lec08)  | HW2-0130 described. Due at start of class on Fri. Feb 10. Finish Ch. 4. Start Ch. 5.  |
|         | Feb 01 (Lec09)  | Finish Ch. 5. Start Ch. 6.  |
|         | Feb 03 (Lec10)  | Almost finish Ch. 6.  |
| Wook 05 | Feb 06 (Lec11)  | Finish Ch. 6. Start/Finish Ch 7. Start/Finish Ch. 8. Start Ch. 9.   |
| WEER US | I en oo (recii) | Reminder: Deadline for first Seminar/Colloquium Report Feb. 17.   |
|         | Feb 08 (Lec12)  | Continue Ch. 9.   |
|         | Feb 10 (Lec13)  | HW2-0130 hardcopy due start of class. Continue Ch. 9.   |

Deadline for first Seminar/Colloquium Report Feb. 17.

Week 06 Feb 13 (Lec14)

HW3-0213 described. Due at the start of class on Fri., Feb 24.
Continue-Finish Ch. 9. Start and "Finish" Ch. 10.

Feb 15 (Lec15)

ICXY-0215-TH due by start of class on Fri., Feb. 24.
Final comments on Ch. 10. Start Ch. 11.
Term Paper Part A (TPA-0215) described/assigned and due (online submission) by start of class on Mon, Feb 27.

Feb 17 (Lec16)

Continue Ch. 11.

Week 07 Feb 20 (Lec17) Finish Ch. 11.

Feb 22 (Lec18) Ch. 12 – Ch. 13. Lecture "Scattering in a Nutshell".

Feb 24 (Lec19) HW3-0213 hardcopy due start of class.

Ch. 14 (scattering).

[Note: **Week 8** is Term paper topics instructor approval week, may require meeting with student.]

Week 08 Feb 27 (Lec20)

TPA-0215 due by start of class, online submission.
Finish "Scattering in a Nutshell", thereby completing
Parts IV and V of the textbook (or the "Form follows function" parts).
HW03-0207 returned.

Mar 01 (Lec21)

Start Ch. 15. TPA-0215 clarifications may be needed.

Mar 03 (Lec22) Finish Ch. 15. Review Ch. 16. **HW4-0303 described. Due at the start of class on Mon., Mar 20. TPA-0215 final approval by Noon.** 

[Note: The American Physical Society (APS) March 2023 Meeting is in Las Vegas during Week 09.]

Week 09 Mar 06 (Lec23) Term Paper Prep and Seminar-Colloquium 1 time recovery.

No formal lecture this week, and No OH.

Mar 08 (Lec24) Term Paper Prep and Seminar-Colloquium 2 time recovery.

No formal lecture this week, and No OH.

Mar 10 (Lec25) Term Paper Prep and Seminar-Colloquium 3 time recovery.

No formal lecture this week, and No OH.

Week 10 Mar 13 – Mar 15 – Mar 17: UF Spring Break – No classes.

| Week 11 | Mar 20 (Lec26) | Review Highlights from APS March Meeting. Review schedule for the remainder of the course. Discuss options for timing of 1:1 Oral Exam period. Discuss options for special topics before course ends. HW4-0303 due at the start of class, hardcopy, bring to class. Start Ch. 16. |
|---------|----------------|---|
|         | Mar 22 (Lec27) | Continue Ch. 16.  |
|         | Mar 24 (Lec28) | Finish Ch. 16. Start Ch. 17.  |
| Week 12 | Mar 27 (Lec29) | Return HW4-0303. Ch. 17 – with "Kittel's 5 Points of Insight". HW05-0327 posted after class.  |
|         | Mar 29 (Lec30) | <b>HW05-0327</b> discussed. Due at the start of class on Fri., Apr. 07. Finish Ch. 17. Comment on Ch. 18.   |
|         | Mar 31 (Lec31) | Start Magnetism Ch. 19-21.  |
| Week 13 | Apr 03 (Lec32) | Finish Magnetism Ch. 19-21. Start Ch. 22-23.  |
|         | Apr 05 (Lec33) | Continue Ch. 22-23 and finish discussions directly from textbook.   |
|         | Apr 07 (Lec34) | <b>HW5-0327 online submission due by start of class.</b> Preamble for Superconductivity – DEFINITION and a technique for first-look of small superconducting samples.   |
| Week 14 | Apr 10 (Lec35) | Special Topic 1: Superconductivity  |
|         | Apr 12 (Lec36) | Special Topic 1: Superconductivity  |
|         | Apr 14 (Lec37) | Special Topic 2: Superconducting Devices  |
| Week 15 | Apr 17 (Lec38) | Special Topic 2: Superconducting Devices  |
|         | Apr 19 (Lec39) | Special Topic Y:  |
|         | Apr 21 (Lec40) | Special Topic Z:  |

Week 16 Apr 24 (Lec41) Term Paper due by start of class.

Assemble "Solid State Jargon List" (SSJL). Method for setting time for Oral Exam.

Apr 26 (Lec42) Last Day of Lecture.

All Sem/Col Reports due by start of this class period.

Discuss qualitative and quantitative "SSJL".

Apr 28 **No Class, Reading Day.** 

**Deadline for Course Evaluations.** 

Students can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/.

## Final Exam is NOT tentative but is fixed by the registrar:

The Final Exam window for this course is Final Exam (Group D): Tuesday, 02 May 2023, 3:00 pm – 5:00 pm (15:00 hrs to 17:00 hrs). All Spring 20232 course activities must be completed by 5:00 pm (17:00 hrs) on Friday, 05 May 2023.