

PHYSICS 723/823 - Spring Semester 2019 - ODU

Syllabus - Graduate Nuclear and Particle Physics II

Website: <http://ww2.odu.edu/~skuhn/NucPhys/teaching823.html>

Class Meetings: 5:00 p.m. - 6:15 p.m. - Mondays and Wednesdays

Oceanography & Physics (OCNPS) Building Room 403

Instructor: Dr. Sebastian E. Kuhn
Eminent Scholar & Professor of Physics
Physical Sciences Building (PSB II), Room 2100J
Phone: 683 – 5804 email: skuhn at odu.edu
Web: <http://www.odu.edu/~skuhn/>
Office hours: Fridays 11:00 – 12:00 in my office
and by appointment (just ask me after class, send email
or call)

Required Text: A. Aprahamian et al.: Reaching for the Horizon – The
2015 Long Range Plan for Nuclear Science (2015) – on
the course website

Optional Textbooks: Povh/Rith/Scholz/Zetsche/Rodejohann: Particles and
Nuclei, Springer Verlag, 7th edition (2015)
Samuel S.W. Wong: Introductory Nuclear Physics,
Wiley-VCH, 2nd edition (2004)
Donnelly/Formaggio/Holstein/Milner/Surrow: Founda-
tions of Nuclear and Particle Physics, Cambridge Univer-
sity Press(2017)

Further Material: Particle Data Group website (pdg.lbl.gov) and publica-
tions (pocketbook, full edition)
Other websites linked to the course web page
W.R. Leo: Techniques for Nuclear and Particle Physics
Experiments, Springer (1994). (**The** standard text on ex-
perimental methods).

INTRODUCTION

This is the second semester of a 2-semester sequence in graduate nuclear and particle physics. Building upon the foundation built in the first semester, we will study a few subjects in contemporary nuclear and hadronic physics. In particular, we will follow the newest NSAC long range plan (2015) and discuss the topics presented therein. The course will be a bit less formal and more seminar-like than the first semester – expect to be called upon to participate! Also, all students are required to give in-class presentations!

Required course work includes attendance at the lectures, one oral presentation, and four “mini-papers” (tba). The student presentations (about 20-30 min each, plus time for questions) can be on applications of nuclear physics, or on specific experiments or theoretical research relevant for the course (including your own project). Please pick a topic early in the semester, after consultation with me.

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Grading Scheme:

Approximately 15% based on each “mini-paper” and 40% on in-class participation (which includes the presentation).

Policy on Classroom Etiquette

Please follow the general rules of courtesy and respect. This means: Do **not** come late or leave early, and while in class, refrain from all other activities (including eating and drinking, talking to others, using electronic devices etc.). I reserve the right to ask students to leave if they disrupt the learning experience of their classmates.

Policy on Cooperation

I consider it advantageous if students cooperate with each other on homework and other course-related items. In fact, I encourage students very strongly to meet up with each other for regular discussions and to tackle assignments together.

However, I require that each student turn in their own (hand- or computer-written) version of each homework and assignment. Also, **NO** cooperation is allowed on the Midterm and Final Exams – everybody has to do **ALL** of the work her/himself. I consider it unethical and a violation of the honor code to copy the solution of a homework problem or an Exam verbatim from another student's solution or from a book. All material used (other than informal discussions) must be properly cited.

In this context, I want to remind everyone of the **University policy**: Any official sanction for cheating, including the assignment of a grade of F for a quiz or for a course as a penalty for cheating, will appear on the student's permanent academic transcript.

Accommodation Statement

Students are encouraged to self-disclose disabilities that have been verified by the Office of Educational Accessibility by providing Accommodation Letters to their instructors early in the semester in order to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to instructors each semester.