

Introduction to Nuclear Engineering  
ENU 1000, Section 11GG, Fall 2017  
W 1250-1340 (UF “Period” 6)  
Pugh Hall 120  
No Final Exam

### **Instructor**

DuWayne Schubring, Associate Engineer  
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352-294-7870  
dlschubring@ufl.edu (best way to reach me)  
Office hours: M 1400-1445, T 1315-1445, W 1400-1445, F 1230-1445, and by appointment.

### **Description**

Introduction to the nuclear engineering field and careers in the nuclear industry. Topics include engineering ethics, nuclear history, elementary nuclear and reactor physics, reactor types, nuclear safety, nuclear fuel cycle and radiation protection.

### **Prerequisites**

None

### **Professional Components (ABET)**

1. Graduates will have successful careers in nuclear engineering or related disciplines
2. Graduates will pursue continuing education or advanced degrees

### **Program Outcomes (ABET)**

While ENU 1000 indirectly supports many outcomes, no outcome assessments occur in this course.

### **Text**

None

### **References**

None

## Course Schedule

Date	Due	Material
23 Aug		Introduction to Course, Syllabus Review
30 Aug		Overview of Nuclear Engineering Field
6 Sep		Overview of UF's Nuclear Engineering Major
13 Sep		Nuclear History (1/2)
20 Sep		Nuclear History (2/2)
27 Sep		Introduction to Radiation & Radioactivity (1/2)
4 Oct	HW 1	Introduction to Radiation & Radioactivity (2/2)
11 Oct		Guest Speaker – Dr. Janes Bacia (Radiation Detection)
18 Oct	HW 2	Nuclear Fission and Nuclear Reactors (1/2)
25 Oct		Nuclear Fission and Nuclear Reactors (2/2)
1 Nov		Guest Speaker – Dr. Wes Bolch (Health and Medical Physics)
8 Nov	HW 3	UFTR Tour (to be confirmed)
15 Nov	HW 4 (in class)	Engineering Ethics
22 Nov		NO CLASS (UF HOLIDAY)
29 Nov	Term Paper	Guest Speaker – Dr. Leigh Winfrey (Fusion)
6 Dec		Undergraduate Research at UF, including Current Opportunities

## Grading

Grades will be assigned based on the three components of the course:

- Attendance (40%)
- Homework (30%)
- Term paper (30%)

The final grades will be assigned based on:

- A:  $\geq 86\%$
- A-: 84.5-85.99%
- B+: 83-84.49%
- B: 75-82.99%
- C: 67-74.99%
- E:  $< 67\%$

I reserve the right to grant higher grades at the end of the course at my sole discretion, including the use of A-, B+, B-, and C+. Under no circumstances will grades of C- or any flavor of D be used.

More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## Course Policies

### Attendance, Class Conduct, and Make-Up Work

Attendance is required, graded, and will be taken, starting August 23 (first class). There is no tolerance for mobile phones or other electronic disruptions. Such disruptions will lead to the student being told to leave the room for the duration of the class period *and penalized for being absent*. The same principle applies to office hours or appointments – if you stop by my office and your phone rings, you will be told to leave the room for the duration of that day’s office hours (or your appointment considered over).

Your attendance score will be computed as the fraction of *required* classes that you attend. Sessions that are cancelled for any reason and excused absences do not count in this calculation. That is, if (among the 15 scheduled sessions), you miss 2 (unexcused), have 1 excused absence, and 1 is cancelled due to weather, your attendance score will be 11/13, not 11/14 or 11/15.

Excuses for absence and late work can be grouped into the categories of *professional*, *medical*, and *personal*.

*Professional:* Reasonable extensions for job/internship interviews, technical conferences, or other professional/career development reasons should be requested. Requests are typically granted, at my discretion, unless they would grant a student or group of students an unfair advantage over their peers, cause significant disruption to the course or grading schedule, or violate some UF policy.

*Medical:* Extensions will also be granted for (your own) medical reasons – please do not come to class if you are ill. Per UF policy, in the case of medical absences that are frequent or suspiciously-timed (*e.g.*; you are repeatedly, suddenly ill at deadlines), I may request a signed note from a physician or similar professional practitioner.

*Personal:* In addition, UF policies require accommodation for several non-academic, non-medical reasons. *Extensions for these personal issues are strictly limited to those mandated by the letter of UF policies.* The list of UF-approved personal reasons changes from time to time. If you have a question regarding your personal issue and if it qualifies under one of the excused absence/late-work policies, contact me in advance.

The 12-day rule will be enforced strictly. Note that the count of days is based on a per-student, not per-approved-activity basis. All requests for excused absence or extension must be submitted in writing, preferably via e-mail.

Pursuant to HWCOE policy, the following statement is required: Excused absences are consistent with university policies in the undergraduate catalog

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

and require appropriate documentation.

For the purposes of this course, in the above-referenced list of approved absence reasons, the word “family” shall be taken to mean your parents, grandparents, great-grandparents (*etc.*); children, grandchildren (*etc.*); siblings; aunts/uncles; nieces/nephews; your spouse and the spouse of any of the above; and half- or step- “versions” of the above categories. More distant relatives (*cousins, etc.*), partners (excluding spouses), and pets are not included. Minor illnesses (*guideline: anything meriting home care only or care at a walk-in clinic, as opposed to an ER*) of family members, including minor children, do not count as serious family emergencies, nor do events such as birthdays, anniversaries, weddings, *etc.*

Political activities, including protests, demonstrations, and the like are considered personal matters and not generally permitted as excused absences. This includes activities related to nuclear

engineering or nuclear power. Exceptions: (1) A student who is pursuing nuclear-related (whether pro- or anti-) politics as a career path may be granted excused absences, at my discretion, on condition of providing evidence of *bona fide* efforts to secure a full-time position or to secure admission to a relevant, non-STEM degree-granting graduate program and (2) activities between October 27 and November 3, inclusive, that are connected to the ANS Conference will be taken as related to that professional activity and permitted as excused absences.

Further, be advised that any approved reasons for late work do not reduce the amount of work you are expected to complete, but merely rearranges the timing. For those issues that are predictable (interview, holidays, etc.), you should work ahead to avoid disruption. In the case where your approved make-up work adversely affects a group project, I may modify the assignment and/or groups for those concerned to minimize the disruption of one student's issues on other group members.

### **Homework and Project (Term Paper)**

*Excluding the make-up work policies, above, no late homework or projects will be accepted.*

Homework and the term paper may be submitted electronically (via Canvas) or as hard copy; some may have required electronic submissions indicated on the assignment sheets. The following restrictions apply for electronic submissions:

- Submissions may include multiple files, but only files with the following extensions will be accepted: pdf, xls, xlsx, and txt.
- If a hard copy and electronic submission are provided, the hard copy will take precedence. (Only it will be read, reviewed, and graded.)

Professional document and figure standards will be enforced on your term paper, which must be prepared using word processing or typesetting software. *The onus is on you to figure out how to meet these standards in whatever programs you use to write the document and make figures.* I have exactly zero sympathy for those who select a word processor without knowing how to format their text using it – complaints that the standards are not the same as a particular piece of software's defaults will fall on deaf ears.

### **Grade Appeal**

All appeals of grades, including those from clerical/grade-calculation errors, must be made within 1 week of return. (This may be modified for specific assignments near the end of the term. I will announce this via e-mail as needed.)

Grade appeals must be provided in the following format:

- Include your entire assignment *unmodified*.
- Attach (paper clip preferred) a written summary of which problem(s) or part(s) you believe were graded inaccurately. Be as specific as possible.
- Turn in your appeal to me at class time or during office hours.
- I will review your grade appeal, contact you via your ufl.edu e-mail address, and return the assignment in class. Fairly simple appeals provided to me during office hours may be decided upon while you wait, at my discretion.

Appeals will be considered for clerical errors, addition errors, and inconsistent scoring. Grade appeals will not be entertained if you simply do not like that (for example) Part 1 was worth only 2 points with Part 2 worth 5.

On very rare occasions, if I believe the student is not acting in a good faith belief that more points are deserved, I will deem the appeal frivolous. Following two frivolous appeals, your grade appeal privilege through this method will be *revoked*. Further appeals must be done through the petitions process, which requires formal paperwork and department/program level involvement.

### **Electronic Communication and Course Website**

The primary means of communication with the class outside of class time will be e-mail listserv. These listservs will send to your @ufl.edu address only. Any inquiries regarding grading will be directed towards your @ufl.edu address only, per FERPA.

Technical and procedural questions will be answered as a reply to whatever e-mail address you used to send them. If the entire class will benefit from the answer, I may send to the class list (either in lieu of or in addition to a direct reply to you, at my discretion). If you do not wish to have a specific e-mail to me regarding technical content or course procedures replied to through the class list, you must explicitly state this in that e-mail. In such a case, I will reply directly to you and send a general-purpose announcement to the class list, not indicating who caused me to send it.

The primary use of the Canvas website is for file storage, as all assignments, lecture notes, etc. will be provided there. I take no responsibility for downtime of this service, nor for actions of University of Florida staff that affect the website (including Canvas upgrades). The gradebook on Canvas is used to enable you to look up grades quickly. Note that this gradebook is *not* official. I reserve the right to correct errors, including transcription errors, from the official (spreadsheet) gradebook, to which I alone have access, until finalization of grades with the registrar.

### **Letters of Recommendation/Evaluation Policy**

To request a letter of recommendation/evaluation (for graduate school or otherwise), you must provide:

- A hard copy of your UF transcript.
- A hard copy of a résumé (or CV).
- A hard copy of the following form: <http://www.registrar.ufl.edu/pdf/ferparelease.pdf>. You *must* check all four circles.

Letters are typically filed once per week. For students whom I know only through coursework, my letter typically focuses on an estimate of their rank-in-class and on their performance on projects and challenging problems.

I will only file *one batch* of letters per student during the term, for any student currently enrolled in a class with me. (This policy is designed to keep me from looking up slight changes in your rank/performance multiple times for multiple batches of letters.) I recommend that this batch occur as late as possible in the term to allow me sufficient information (sample size) on your performance to write a useful letter.

I reserve the right to refuse provide a letter for any student and am not obligated to provide a reason for such refusal.

## Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to me when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Please note that UF policy, clarified to faculty during the Fall 2016 term, states that no retroactive accommodations are available.

## Course Evaluations

UF expects students to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at

<https://evaluations.ufl.edu/results/>.

## University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

## Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see:

<http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

## Campus Resources

### Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352-392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center (392-1575) and

<http://www.counseling.ufl.edu/cwc>

University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>

### Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)

<https://lss.at.ufl.edu/help.shtml>

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.

<https://www.crc.ufl.edu/>

Library Support, Various ways to receive assistance with respect to using the libraries or finding resources.

<http://cms.uflib.ufl.edu/ask>

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

<https://teachingcenter.ufl.edu/>

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

<https://writing.ufl.edu/writing-studio/>

Student Complaints Campus:

[https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)

On-Line Students Complaints:

<http://www.distance.ufl.edu/student-complaint-process>

## Changes to Syllabus

Changes to this syllabus will be provided via the Canvas platform. Such changes may include those required by policy changes, my travel, changes in the speed of course coverage, university closure, errors in previous syllabus versions, and other reasons.