NUCE 501: REACTOR ENGINEERING  
Spring 2015, Time TBD, Location TBD

Course Description: Fundamentals on reactor thermal-hydraulics, single-phase flow and two-phase flow formulations, one-dimensional analysis of reactor systems and fuel elements, mixture and two-fluid formulations, various two-phase flow phenomena pertinent to nuclear reactor systems.

Prerequisites: NucE/ME497K; or NucE430; or ME 410; or ME320; or equivalent.

Instructor: Dr. Seungjin Kim, 230 Reber Building, University Park, PA 16802  
(T) (814) 867-1783; Email: skim@psu.edu  
Office Hours: 9:30AM-10:30AM and 3:30PM-4:30PM on Wednesday, or by appointments. Will take phone calls from distance learning students.

Teaching Assistant: TBD

Technical Support: Missy Stark, Email: masdo@engr.psu.edu  
(T) (814) 865-7645.

Paper book version: [http://www.springerlink.com/content/978-1-4419-7964-1/#section=809404&page=1](http://www.springerlink.com/content/978-1-4419-7964-1/#section=809404&page=1)


Policies:

- **Homework:**
  - Due one week from the day assigned (before midnight), unless specified otherwise.
  - No late homework is accepted, unless a request for an extension has been made to the instructor at least two days in advance before the due day for any extenuating circumstances.
  - Homework can be submitted in the classroom, via mail, via email, or via ANGEL Homework Drop Box.
  - If submitted electronically, the homework should be formatted to be a PDF file.
  - A guideline for the homework format is available in the ANGEL.
  - Students may earn extra credits for logically organized and neatly presented homework solutions.

- **Exams:**
  - Three exams will be given (2 Midterm & 1 Final Exam).
  - No make-up exam is allowed, unless a request for change in exam date has been made to the instructor at least one week in advance before the scheduled exam date for any extenuating circumstances.
  - Anybody who earns an A grade after the second exam (accounting for the course project, HW and exams) may opt out of the Final Exam with an A grade.
  - The final grade will be calculated based on the two best exams out of three.
o Should one decides not to take the final exam without earning A grade after the second exam, the grade will be calculated based on THREE exams (instead of two) with ZERO final exam score.

o For distance learning students: The exam will be performed under the supervision of a proctor. A proctor needs to sign a form available in the “Proctor Information” in NucE 501 ANGEL site as soon as possible.

- **Grade Proportion**
  - **Exams**: 30% each for two best exams out of three (20% each in case all three exams need to be accounted for).
  - **Team Project**: 20%.
  - **Homework**: 20%.
  - The grade will be partitioned into A, B, C, D and F. Ranges of grades are:

<table>
<thead>
<tr>
<th>Final Avg. Score</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90 ≤ Avg.</td>
<td>A</td>
</tr>
<tr>
<td>80 ≤ Avg. &lt; 90</td>
<td>B</td>
</tr>
<tr>
<td>70 ≤ Avg. &lt; 80</td>
<td>C</td>
</tr>
<tr>
<td>55 ≤ Avg. &lt; 70</td>
<td>D</td>
</tr>
<tr>
<td>Avg. &lt; 55</td>
<td>F</td>
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</tbody>
</table>

- **Academic Integrity**: The University and the College of Engineering consider academic dishonesty, including cheating and plagiarism, to be a serious offense. The University Policy 49-20 describes the general university policy on academic dishonesty. For Engineering, the academic integrity web site is at [http://www.engr.psu.edu/CurrentStudents/acadinteg.aspx](http://www.engr.psu.edu/CurrentStudents/acadinteg.aspx). Dishonest incidents should be reported to the course instructor or to the Department Head who will refer it to the College Committee on Academic Dishonesty.