It has been estimated that at least 98,000 US adults die each year from medical errors; fewer people die from breast cancer, AIDS, or auto accidents. The costs associated with preventable medical errors exceed $17 billion. To help train scientists and practitioners to effectively reduce the likelihood of preventable patient harm, the University of Wisconsin—Madison (http://www.wisc.edu/) offers the Graduate Certificate in Patient Safety. The certificate is supported by the School of Medicine and Public Health (http://www.med.wisc.edu/), School of Nursing (http://www.son.wisc.edu/), School of Pharmacy (http://www.pharmacy.wisc.edu/), and College of Engineering (http://www.engr.wisc.edu/).

**Objective:** To increase student knowledge about how systems engineering and systems design can be used to identify, analyze and solve patient safety research and applied problems.

The graduate/professional certificate in patient safety is an interdisciplinary effort between the Department of Industrial and Systems Engineering, School of Nursing, School of Pharmacy, Department of Medical Physics, and Department of Population Health Sciences. Patient safety is of national and international importance and there is a shortage of people with expertise in the design of safe health care systems and technologies that can improve patient safety. Such expertise is important to physicians, nurses, pharmacists, and other health care professionals, and engineers. The certificate in patient safety provides students with knowledge and skills in an array of topics necessary for the identification, analysis, and control of patient safety programs.

**PREREQUISITES**

1. Accepted into a graduate or professional degree program
2. Full- or part-time graduate student status
3. One of the following three:
   4. A degree in a health-care-related field (that is, nursing, medicine, pharmacy, population health, public health, health care administration, health systems management, health care management), or
   5. Work experience in health care delivery, or

The reason for the three options for prerequisites is to allow people with and without health care backgrounds to obtain the certificate.

**EXIT REQUIREMENTS**

- GPA of 3.2 or above for the Patient Safety Certificate Curriculum courses (mandatory and elective combined).
- Completion of all mandatory and elective courses.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>I SY E 699</td>
<td>Advanced Independent Study ¹</td>
<td>1</td>
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<tr>
<td>or I SY 961</td>
<td>Graduate Seminar in Industrial Engineering</td>
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<tr>
<td>PHARMACY/</td>
<td>Safety and Quality in the Medication Use System</td>
<td>3</td>
</tr>
<tr>
<td>I SY E 608</td>
<td>Patient Safety and Error Reduction in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>MED PHYS 559</td>
<td>Quality of Health Care: Evaluation and Assurance</td>
<td>3</td>
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<td>I SY E/ POP HLTH 703</td>
<td>Human Performance and Accident Causation</td>
<td>3</td>
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<tr>
<td>I SY E/PSYCH 652 Sociotechnical Systems</td>
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<td>I SY E/PSYCH 653 Organization and Job Design</td>
<td>Elective 3</td>
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<tr>
<td>Elective</td>
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<td>Total Credits</td>
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</table>

¹ To meet this requirement, students will be expected to work on an actual patient safety project with a health care delivery organization (in patient, out-patient, long-term care, home care, etc.) in which they will be involved in the design, measurement analysis, implementation and/ or evaluation of a patient safety project. All students who complete PHARMACY/I SY E 608 Safety and Quality in the Medication Use System below will automatically meet this requirement.

An equivalent 1-credit Patient Safety Project may also be taken in lieu of either of these courses.
ADVISORS

Students must choose one of the core faculty members listed below as an advisor:

- Pascale Carayon (http://www.engr.wisc.edu/ie/faculty/carayon_pascale.html)
  Industrial & Systems Engineering
- Michelle Chui (http://www.pharmacy.wisc.edu/chuis-group/dr-michelle-chui/)
  Pharmacy
- David Mott (http://apps.pharmacy.wisc.edu/sopdir/55/)
  Pharmacy
- Maureen Smith (http://www.pophealth.wisc.edu/faculty/smith/)
  Population Health Sciences
- Bruce Thomadsen (http://www.medphysics.wisc.edu/directory/thomadsen.php)
  Medical Physics
- Doug Wiegmann (http://www.engr.wisc.edu/ie/faculty/wiegmann_douglas.html)
  Industrial & Systems Engineering