# Course Outline

**Course Title:** National Electrical Code  
**Semester Course Prefix and Number:** PAS 1265  
**Submitted By:** Scott Norcia  
**Approval Date:**  
**Old Quarter Course Prefix and Number:**  
**Revision Date:** 11/23/11  
**Number of Credits:** 2  
**Number of Lecture Credits:** 2  
**Number of Lab Credits:** 0  
**Number of Lab Hours:** 0  
**Class Size:** 24  
**Semester(s) Offered:** Spring  
**Number of Studio/Demonstration/Internship Credits:** 

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### Catalog Description:

This course is an introduction to the National Electrical Code (NEC). The course covers the layout of the code book, definitions of terminology used in the NEC, and a review of code sections related to industrial wiring. The course provides practice in locating and applying articles from the NEC to solve specific electrical design problems and/or calculation parameters needed for the sizing and selection of equipment and material.

### Prerequisites and/or recommended entry skills/knowledge:

- **Course Prerequisite(s):** None
- **Reading Prerequisite:** None
- **Composition Prerequisite:** None
- **Mathematics Prerequisite:** None

### Career Programs and Transfer Majors Accessing this Course:

- Process Automation Systems Diploma
- Process Automation Systems AAS

### Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

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<thead>
<tr>
<th>Goal</th>
<th>Description</th>
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<td>0. X</td>
<td>None</td>
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<tr>
<td>1.</td>
<td>Communications</td>
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<tr>
<td>2.</td>
<td>Critical Thinking</td>
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<td>3.</td>
<td>Natural Sciences</td>
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<td>4.</td>
<td>Mathematical/Logical Reasoning</td>
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<td>5.</td>
<td>History and the Social and Behavioral Sciences</td>
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<td>6.</td>
<td>The Humanities and Fine Arts</td>
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<td>7.</td>
<td>Human Diversity</td>
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<td>8.</td>
<td>Global Perspectives</td>
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<td>9.</td>
<td>Ethical and Civic Responsibility</td>
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<td>10.</td>
<td>People and the Environment</td>
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(Note: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer's approval are required.)
**Learning Outcomes:** (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Following the completion of this course the student will be able to demonstrate the ability to:

1. Describe the purpose, scope, and jurisdiction of the National Electrical Code.
2. Identify the arrangement of the National Electrical Code Book.
3. Define terms that are important to the proper application of the Code.
4. Identify and apply the rules associated with ungrounded conductors, branch circuits, feeders and outside wiring.
5. Make calculations to determine the code requirements for the sizing of branch circuits, feeders, and services.
6. Identify and apply the rules associated with services and circuit protection.
7. Define terms associated with service equipment and overcorrect protection.
8. Identify and apply the rules associated with services and circuit protection.
9. Identify and apply the rules associated with the methods and materials used in wiring.
10. Define terms associated with methods and materials.
11. Determine wire sizes and types for wiring.
12. Identify and apply the rules associated electrical boxes and fittings.
13. Define terms associated with electrical boxes and fittings.
14. Calculate the size boxes and fittings needed in electrical installations.
15. Identify and apply the rules associated motors and motor control circuits.
16. Define terms associated with motors and motor control circuits.
17. Select sizes of control wiring and devices for motors.

**Student Assessment Methods:**

Lecture assignments and tests.

**Use of Instructional Technology:** (includes software, interactive video and other instructional technologies):

Power Point Software, videos, D2L, Moodle

**Outline or Statement of Major Course Content:**

The course focuses on the National Electrical Code sections related to industrial wiring and electrical maintenance, with an emphasis on locating specific code sections, interpretation of code terminology, calculations for the sizing of wire and raceway and specifications of motor control equipment.

**Additional Special Information:** (special fees, directives on hazardous materials, etc.)

Laptop Computer Lease

**Transfer Information:** (Please list colleges/majors that accept this course in transfer.)

None

**Approvals:**

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<thead>
<tr>
<th>Body</th>
<th>Representative Signatures</th>
<th>Date</th>
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<tbody>
<tr>
<td>Curriculum Committee</td>
<td>[Signature]</td>
<td>11-27-11</td>
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<tr>
<td>Faculty Association</td>
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<td>Academic Affairs Standards Committee</td>
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<td>Chief Academic Officer</td>
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**Distribution:** Original – Administrative Office

**Copies:** Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records, Student Services, Learning Center, Library

**Revised:** October 2006