# MATH 602
## CULTURAL AND PHILOSOPHICAL BACKGROUND OF MATHEMATICS (3 units)

### Course Outline

course webpage: [http://pages.towson.edu/shirley/math602.html](http://pages.towson.edu/shirley/math602.html)

**TOPIC OUTLINE** (note: math culture topics may change in content or sequence—to be announced)

| class | general topic                                      | reading: RH=Hersh  
MA=Ascher  
P&F=Powell-Frankenstein  
NCTM=Principles&Standards | math culture topic |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>course organization, pre-test</td>
<td>RH: Preface</td>
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<tr>
<td>2</td>
<td>early ideas of philosophy of mathematics</td>
<td>RH 6,7</td>
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<td>3</td>
<td>crises in philosophy of mathematics</td>
<td>RH 8,9</td>
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<td>4</td>
<td>developing a philosophy of mathematics</td>
<td>RH 2-5</td>
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<td>5</td>
<td>humanist/socio-cultural philosophy of mathematics</td>
<td>RH 1, 10-13</td>
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| 6     | ethnomathematics: ethnic mathematics               | MA Intro, 1,3,4;  
P&F 11,15          | games I          |
| 7     | ethnomathematics: other cultures                  | MA 2,5,6,7; P&F (9?),10 | networks |
| 8     | ethnomathematics: political issues                | P&F 7,13,14,18    | games II |
| 9,10  | individual presentations:  
"Math in MY OWN Culture" | P&F 1,12,16,17    |                  |
| 11    | philosophy of math education                      | NCTM: Chap 2; RH 2,13 | magic squares |
| 12    | applying philosophy in mathematics education issues | NCTM: Chap 2  
"Math Wars" handout | calendars |
| 13    | review                                              | [take-home final distributed] | jokes |
| 14    | final exam due                                     |                   |

**LEARNING OBJECTIVES:** Students in this course should:
1. gain greater insight into the philosophical and logical foundations underlying the fields of mathematics and mathematics education.
2. recognize sources of mathematics from cultures and human activity
3. become familiar with aspects of the culture of mathematics
4. fit current issues of mathematics and mathematics education into the structures of logical foundations, philosophies, and cultures.
5. gain competence to discuss and deal with issues of mathematics and mathematics education.
6. recognize the important role of mathematics teachers in discussions of curriculum, instruction, and assessment issues of mathematics education.

**REQUIRED TEXTS**