MATH 365: COMPLEX VARIABLES (SPRING 2017, 3 CREDITS)
TTH 12:40PM – 2:00PM, 196 CARVER HALL
http://www.public.iastate.edu/~rossmani/math365/

INSTRUCTOR
James Rossmanith
Office: 482 Carver Hall
Tel: (515)-294-8155
E-mail: rossmani@iastate.edu
Office Hours: TTh 9:00am-10:00am (or by appointment)

PREREQS
Math 265 (Calculus III) or equivalent.

TEXTBOOK

COURSE TOPICS
1. Chap 1: Complex Numbers (basic properties, exponential form, roots)
2. Chap 2(a): Elementary Functions (exp, log, trig, hyperbolic)
3. Chap 2(b): Analytic Functions (limits, continuity, derivatives, Cauchy-Riemann)
4. Chap 2(c): Integrals (countour integrals, Cauchy-Goursat, Liouville)
5. Chap 3: Series (Laurent series, convergence)
6. Chap 4: Residues and Poles (Cauchy residue theorem, poles)
7. Chap 5: Application of Residues (improper integrals, Jordan’s lemma, branch cuts)
8. (time permitting) Chap 6: Conformal Mapping

LEARNING OUTCOMES
• Learn how to manipulate complex numbers and complex-valued functions
• Learn about singularities of complex functions and how this affects series approximations of these functions
• Learn to how to compute contour integrals in the complex plane
• Learn how to apply complex variables ideas to fluid dynamics problems

Score | Letter Grade
---|---
92–100 | A
87–91 | A–
82–86 | B+
73–81 | B
68–72 | B–
59–67 | C
50–58 | D
< 50 | F

GRADING
20% — Homework (~10)
25% — Midterm #1
25% — Midterm #2
30% — Final Exam

CALCULATORS
No calculators are allowed on any exam.

ATTENDANCE
I do not take attendance, but it is very likely if you skip classes that you will not do well in the course. If you decide to skip class for no good reason, then you are deciding that you are okay with missing what I teach that day. In this case, do not come to my office hours expecting me to teach you the things you missed.

READING
It is important that you read the textbook carefully for understanding. We will not be able to cover all examples and ideas in the textbook in class, but you are responsible for the content in the textbook. It is important that you read for understanding, not just to get the reading over with. This will likely mean reading each section 3 or 4 times, doing some pencil and paper work on your own to understand some transitions, etc. Reading math can be a slow process, but each section in the book is short so you will have time for multiple readings.

DISABILITY ACCOMMODATIONS
If you have a disability and require accommodations, please contact the instructor early in the semester so that your learning needs may be appropriately met. You will need to provide documentation of your disability to the Disability Resources (DR) office, located on the main floor of the Student Services Building, Room 1076, 515-294-6624.
# Class Days

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TUESDAY</th>
<th>THURSDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan. 10</td>
<td>Jan. 12</td>
</tr>
<tr>
<td>2</td>
<td>Jan. 17</td>
<td>Jan. 19</td>
</tr>
<tr>
<td>3</td>
<td>Jan. 24</td>
<td>Jan. 26</td>
</tr>
<tr>
<td>4</td>
<td>Jan. 31</td>
<td>Feb. 2</td>
</tr>
<tr>
<td>5</td>
<td>Feb. 7</td>
<td>Feb. 9</td>
</tr>
<tr>
<td>6</td>
<td><strong>Feb. 14 Substitute</strong></td>
<td>Feb. 16</td>
</tr>
<tr>
<td>7</td>
<td>Feb. 21</td>
<td>Feb. 23</td>
</tr>
<tr>
<td>8</td>
<td>Feb. 28</td>
<td><strong>March 2 Midterm #1</strong></td>
</tr>
<tr>
<td>9</td>
<td>March 7</td>
<td>March 9</td>
</tr>
<tr>
<td>10</td>
<td><strong>March 14 Spring Break</strong></td>
<td><strong>March 16 Spring Break</strong></td>
</tr>
<tr>
<td>11</td>
<td>March 21</td>
<td>March 23</td>
</tr>
<tr>
<td>12</td>
<td>March 28</td>
<td>March 30</td>
</tr>
<tr>
<td>13</td>
<td>April 4</td>
<td><strong>April 6 Midterm #2</strong></td>
</tr>
<tr>
<td>14</td>
<td>April 11</td>
<td>April 13</td>
</tr>
<tr>
<td>15</td>
<td>April 18</td>
<td>April 20</td>
</tr>
<tr>
<td>16</td>
<td>April 25</td>
<td>April 27</td>
</tr>
</tbody>
</table>

**FINAL EXAM:**  Friday, May 5th at 9:45am – 11:45am.