MATH 121-01; T, Th 2:40-4:00PM, room: Exley 141.

Instructor: Cameron Donnay Hill
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Personal webpage: cdhill.faculty.wesleyan.edu
Office: Exley 611
Office Hours: M, T 12:00-1:00pm and by appointment.


Course Description: This course is intended for students who (1) have completed a high school calculus course; (2) might pursue study in an area for which calculus is an essential tool; (3) do not feel prepared to place out of the first-year calculus sequence.

Calculus I is a deeper and broader study of calculus than MATH 117, and very likely, it will be deeper, broader, and more difficult than AP Calculus courses. Part I of Calculus I will focus on the three fundamental concepts of calculus: limits and continuity, differentiation, and integration. Applications of calculus will be encountered, but on the whole, the emphasis will be on the mathematical theory.

Exams and Grading: Grading for the course will consist in \( \approx 12 \) homework assignments, two mid-term exams, a big quiz (on integration) and a final exam. Their values in the grading scheme, along with schedule dates where appropriate, are listed below:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Midterm 1</td>
<td>20%</td>
<td>10 October</td>
</tr>
<tr>
<td>Midterm 2</td>
<td>20%</td>
<td>14 November</td>
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<tr>
<td>Integration Quiz</td>
<td>10%</td>
<td>03 December</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
<td>12 December, 2:00-5:00PM</td>
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The exams will take place outside of class in the evenings with somewhat flexible timing; the mechanics of this will be explained closer to the date of the first exam.

** If you have a schedule conflict, you must contact me at least one week in advance so that we may make alternate arrangements. The final exam may not be rescheduled except under extraordinary circumstances.
**Homework:** Your homework grade will be the average of the homework scores from the individual assignments. Your lowest submitted homework score will be dropped. However, late or missing homework assignments cannot be dropped and will receive a grade of zero. The only exception is when a homework is not submitted due to an unavoidable conflict (such as a serious illness or a family emergency). At the discretion of the instructor, these scores may also be dropped.

Homework will be assigned weekly, and will be due 5:00pm on Tuesday most weeks. **Late homework will not be accepted for any reason.**

**Policy on Collaboration and Citations:** It is likely that most of your learning will take place as you complete the homework assignments. I encourage you to work in groups on the assignments, but each student should turn in a written assignment that is their own work. If there is any question of attribution — whether to your colleagues or to a text or internet source — please, include a reference.

**Attendance:** Students are expected to attend every class, though I will not take attendance. It is the student’s responsibility to keep informed of any announcements, syllabus adjustments, or policy changes made during scheduled classes. **You are responsible for all announcements made in class and on the Moodle.**

**Getting Help:** This is a fast-paced course with a large workload. It is natural that you will need assistance from time to time. Please make the most of the following resources!

- **Office Hours.** I will have office hours ... I am also available at other times; it is best to send me an e-mail to set up an appointment. These office hours are reserved specifically for student questions you should feel free to come and ask me questions on homework, on lectures, or on any concerns you have about the course.

- **Recitations.** Weekly recitations will be scheduled in the evening. Although these sessions are optional, they are an excellent opportunity to ask detailed questions about the material.

- **Math Workshop.** The Math Workshop is a free drop-in tutoring service available to the entire Wesleyan community. It is located in the Science Library in the main floor conference room (Room 133A). It is
staffed with undergraduate and graduate assistants who can help you with questions on homework or lectures. The Math Workshop is open Sunday through Thursday, 7PM-10, and Monday through Thursday, 2:30PM-5, during the semester.

**Disability Support:** It is the policy of Wesleyan University to provide reasonable accommodations to students with documented disabilities. Please note that students are responsible for registering with Disabilities Services, and should make requests known to me in a timely manner. If you require accommodations in this class, please speak with me during the first two weeks of the semester, so that appropriate arrangements can be made. All discussions will be strictly confidential. For registration procedures, please visit,

[www.wesleyan.edu/deans/disability-students.html](http://www.wesleyan.edu/deans/disability-students.html)

**Course Outline:**

Week 1 ................. Introduction to Limits; Limit Theorems.
Week 2 ...................... Definition of the Limit; Continuity.
Week 3 ............ More on continuity; Tangent lines, rates of change.
Week 4 ......... The Derivative, cont’d; Differentiation formulas.
Week 5 .............. The Chain Rule; Trigonometric functions.

- **Midterm 1 – 10 October.**

Week 6 ...................... Implicit differentiation; Local extrema.
Week 7 .................. The Mean-Value Thm.
Week 9 .................... Classif. of crit. points; Curve sketching.
Week 10 .................. Optimization.
Week 11 ........... Last thoughts on Diff. Calc.; The Definite Integral.

- **Midterm 2 – 14 November.**

Week 12 .................. The Fundamental Theorem of Calculus.
Week 13 .................. Indefinite integrals.

- **Quiz on integration – 03 December.**

Week 14 .................. Techniques of integration.