Syllabus
Math 1024 Sections B07A, B08A, B11A, B12A
Calculus IV

Professor: Farhod Abdullayev
Office: Salisbury Laboratories 405B
Office Hours: M 11:00 am - 11:50 am, 3:00 pm - 3:50 pm, T 2:00 pm - 2:50 pm, R 11:00 am - 11:50 am, or by appointment
Office Phone: (508) 831-6725
E-mail: fabdullayev@wpi.edu

Teaching Assistant: Yuchen Dong (Sections B07A, B08A)
TA Office hours: SH 204, Desk 10, TF 11:00 am - 11:50 am
TA E-mail: ydong@wpi.edu

Peer Learning Assistants: Yao Sun (Section B11A), Barrett Wolfson (Section B12A)
PLAs E-mail: ysun8@wpi.edu, bwolfson@wpi.edu

Lab Instructors: Sections B07A, B08A: Dina Rassias (drassias@wpi.edu)
Sections B11A, B12A: Jane Bouchard (bouchard@wpi.edu)

MASH Tutor: William Edor, EPC, M 7:00 pm, R 5:00 pm

Lecture: B07A, B08A: MTRF 12:00 pm - 12:50 pm - Atwater Kent 219
B11A, B12A: MTRF 1:00 pm - 1:50 pm - Washburn Labs 229

Conference: B07A: M 1:00 pm - 1:50 pm - Stratton Hall 304
B08A: M 3:00 pm - 3:50 pm - Stratton Hall 304
B11A: T 3:00 pm - 3:50 pm - Stratton Hall 304
B12A: F 10:00 am - 10:50 am - Stratton Hall 309

Lab:
B07A: T 1:00 pm - 1:50 pm - Stratton Hall 003
B08A: T 3:00 pm - 3:50 pm - Stratton Hall 003
B11A: M 3:00 pm - 3:50 pm - Stratton Hall 003
B12A: M 10:00 am - 10:50 am - Stratton Hall 003

Course page: Course information, homework assignments, announcements will be posted on my.wpi.edu. However, information given in class takes precedence over information given on Blackboard.


Course Description: 1. Functions of several variables (14.1)
2. Limits, continuity, partial derivatives (14.2, 14.3)
3. Chain rule (14.4)
4. Directional derivatives and the gradient (14.5)
5. Linear approximation, differentials (14.6)
6. Multivariable optimization (14.7)
7. Lagrange multipliers (14.8)
8. Double and iterated integrals over rectangles (15.1)
9. Double integrals over general regions (15.2)
10. Area by double integrals (15.3)
11. Double integrals in polar coordinates (15.4)
12. Triple integrals (15.5)
13. Moments and centers of mass (15.6)
14. Integration in cylindrical and spherical coordinates (15.7)
15. Change of variables (15.8)

Course Objectives: The main goal of this course is to provide a solid understanding of the main ideas and methods in the multivariable calculus. Conceptual and computational skills will be developed, with an
emphasis on understanding concepts. The students will be exposed to both theoretical and applied points of view.

**Attendance:** Attendance is expected and participation during lecture and conference is encouraged. Students will be responsible for what is covered in class and the announcements made during lecture and conference. **No cell phones or laptops are allowed during lecture or conference!**

**Office Hours:** Come to office hours for help. This gives us the opportunity to focus on specific problems you may be having and to explain things in a more personal manner. If the scheduled times are bad for you, make an appointment, I am more than happy to help.

**Homework:** Problems will be assigned at the end of each lecture and will be posted on my.wpi.edu as suggested problems and homework. It is highly recommended that you regularly do your homework otherwise you will be in a serious disadvantage on exams. It is essential to do your homework in a timely fashion! If you have trouble with the assigned problems, please see me or your conference instructor as soon as possible. **Working problems is the best way to understand the material taught during lecture. Late homework will be accepted only in exceptional circumstances.** You should have your homework turned in before class time in order for it to be graded. Your work should be very legible and done neatly. If the work is not presentable, and is illegible, you will not receive credit for it. Please staple the sheets of your assignment together. Do not use paper torn out of spiral bound notebooks. In the upper right hand corner of your assignment you should write your name and the class section number (B07A, B08A, B11A, B12A). Each homework will consist of 6-10 problems 5 points each. You need to show both your answer and the work leading to it. Merely having the right answer gets no credit.

**Labs:** Students will meet in the computer lab (SH003) with Instructor’s Assistant (IA). We will use computer algebra system, Maple, as a visual and computational aid to help you explore the mathematical theory and ideas of the Calculus. You will not be given credit for a lab report if you did not attend the lab. **There is no make-up labs.**

**Exams:** There will be three exams distributed equally. The exams are closed book, with no notes or calculators permitted. Please make arrangements now so that there are no conflicts with the time and date for the exam (during the lecture period). Make-up tests will only be given in exceptional circumstances and require prior approval of the instructor. **There is no make-up Third Exam.** If absences at exams are not adequately documented, the student will receive 0 points.

- **Exam 1 - November 13**
- **Exam 2 - December 1**
- **Exam 3 - December 15 (NO MAKE-UP)**

**Grades:** Your final score for the course will be computed as follows

- Exams 1-3: 70%
- Homework: 20%
- Labs: 10%

If \( P \) denotes the overall percentage obtained in this class, the following minimum grades are anticipated to be:

- A: \( P \geq 90\% \)
- B: \( 80\% \leq P < 90\% \)
- C: \( 70\% \leq P < 80\% \)
- NR: \( P < 70\% \).

**Academic Dishonesty:** Each student should be familiar with WPI's Academic Policy (http://www.wpi.edu/offices/policies/honesty). All acts of fabrication, plagiarism, cheating and facilitation will be prosecuted according to the university’s policy. If you are ever unsure as to whether your intended actions are considered academically honest or not, please see me.

**Special Needs:** Any students with disabilities or other special needs, who need special accommodations in this course are invited to share these concerns or requests with the instructor and contact the Office of Disability Services (ODS) as soon as possible. The ODS is located in the Daniels Hall and the phone
number is 508-831-4908 (disabilityservices@wpi.edu). If you are eligible for course adaptations or accommodations because of a disability (whether or not you choose to use these accommodation), or if you have medical information that I should know about please make an appointment with me immediately.
<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>October</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Lecture 14.1</td>
<td></td>
<td></td>
<td>Lecture 14.1, 14.2</td>
<td></td>
</tr>
<tr>
<td><strong>November</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Lecture 14.5</td>
<td>Lecture 14.5, 14.6</td>
<td></td>
<td>Lecture 14.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Lecture 14.7</td>
<td>Lecture 14.7, 14.8</td>
<td></td>
<td>Lecture 14.8</td>
<td>Lecture 15.1</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Lecture 15.2</td>
<td>Lecture 15.2, 15.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>December</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Lecture 15.3</td>
<td>Exam 2</td>
<td></td>
<td>Lecture 15.4</td>
<td>Lecture 15.4, 15.5</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Lecture 15.5</td>
<td>Lecture 15.6,</td>
<td></td>
<td>Lecture 15.7</td>
<td>Lecture 15.7</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Lecture 15.8</td>
<td>Exam 3</td>
<td></td>
<td>NO CLASS</td>
<td></td>
</tr>
</tbody>
</table>