This syllabus serves to establish the rules of the course and a sense of what material will be covered. Note that some aspects may evolve as the semester progresses.

**Course Description:** The goal of this course is to develop a foundational understanding of general relativity.

**Prerequisite(s):** None.
**Credit Hours:** 4

**Required Text:** *Gravity: An Introduction to Einstein’s General Relativity*
**Author:** James B. Hartle
Course Objectives:
In this course we develop a strong foundation for understanding the principles of general relativity and their consequences. Topics will include:

- Principles of Special Relativity
- Gravity as geometry
- Geodesic motion
- Astrophysical implications
- Black holes
- Gravitational waves

Grade Distribution:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm Project</td>
<td>35%</td>
</tr>
<tr>
<td>Final Project/Exam</td>
<td>40%</td>
</tr>
</tbody>
</table>

Letter Grade Distribution:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≥ 90</td>
</tr>
<tr>
<td>B</td>
<td>&lt; 90 and ≥ 80</td>
</tr>
<tr>
<td>C</td>
<td>&lt; 80 and ≥ 70</td>
</tr>
<tr>
<td>D</td>
<td>&lt; 70 and ≥ 60</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60 and ≥ 50</td>
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</tbody>
</table>

Note that + and − beyond the letter grades will be assigned as appropriate. I reserve the right to curve grades up if I feel it is warranted.

Course Policies:

- General
  - We may occasional develop some code in class. Make sure to bring your laptops.

- Homework Assignments
  - Problem sets exist to aid you in understanding and reasoning. The point of the homework is to demonstrate that you have a sound understanding of basic principles and that you are able to clearly articulate it.
  - Each question will be graded out of 15 points total, 10 points for scientific correctness of your answer and 5 points for the clarity and quality of your writing. This means that I expect a well developed logical argument and explanation of your solution.
  - No late assignments will be accepted, unless prearranged under extenuating circumstances.
  - The final homework will be assigned during dead week.
– It is *highly* recommended that you work on the homework together in groups (but you must turn in your own work unless otherwise stated).

**Academic Honesty:**

Cheating is not acceptable. In particular, you might find solutions to the assigned problems online. Use of any of these solutions is not allowed. If it becomes clear that your homework is derived from the online solutions then disciplinary action will be taken.

The UO policy on academic honesty can be found here [https://uodos.uoregon.edu/StudentConductandCommunityStandards/AcademicMisconduct.aspx](https://uodos.uoregon.edu/StudentConductandCommunityStandards/AcademicMisconduct.aspx)