### Assignment 6

The due date for submitting the assignment has passed. Do not attempt to upload assignments after the deadline.

**Unit 8: Week 6**

#### Course Outline

- Week 1
- Week 2
- Week 3
- Week 4
- Week 5
- Week 6

**Assignment Details**

- **Due Date:** 2020-11-11, 23:00 UTC

#### Questions:

1. **Velocity head:**
   - The velocity head is given by $h_v = rac{V^2}{2g}$, where $V$ is the velocity and $g$ is the acceleration due to gravity.
   - The velocity head in a channel can be determined by measuring the velocity and using the above formula.

2. **Hydraulic radius:**
   - The hydraulic radius $r_h$ is defined as $r_h = rac{A}{P}$, where $A$ is the cross-sectional area and $P$ is the wetted perimeter.
   - For a rectangular channel, the hydraulic radius is approximately equal to the average depth.

3. **Flow depth:**
   - For a rectangular channel, the flow depth $D$ is approximately equal to the average depth $D = rac{A}{B}$, where $A$ is the cross-sectional area and $B$ is the width.

4. **Water surface shape:**
   - The water surface shape of a stream or river can be described by the stage-discharge relationship.

5. **Critical flow condition:**
   - In a rectangular channel, the critical flow condition is given by $f = rac{V^2}{gD}$, where $f$ is the Froude number, $V$ is the velocity, $D$ is the depth, and $g$ is the acceleration due to gravity.

6. **Stage-discharge relationship:**
   - The stage-discharge relationship can be used to determine the flow rate from the water surface elevation.

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<tr>
<th>Week 1</th>
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**Marks:**

- Total Marks: 100
- **Current Marks:**
  - **Assignment:** 0
  - **Discussion:** 0
  - **Forum:** 0
  - **Quiz:** 0
  - **Exam:** 0

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**Notes:**

- Please review the course materials and practice problems for additional help.
- Submit all assignments before the deadline to avoid penalties.

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**Instructor:**

- Contact: [Instructor Email]
- Phone: [Instructor Phone]
- Office Hours: [Office Hours]

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**Submission Guidelines:**

- Submit assignments through the course's online portal.
- Late submissions will be penalized.

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**Feedback:**

- Regular feedback will be provided through the discussion forum and quizzes.

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**Resources:**

- Textbooks:
  - [Water Resources Engineering]
  - [Hydraulic Engineering]
- Online Resources:
  - [Hydrology Online Tutor]
  - [National Center for Water Study]
- Other:
  - [Hydraulic and Water Resources Engineer's Handbook]

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**Acknowledgments:**

- Thank you for your participation and dedication to the course.

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**Questions:**

- If you have any questions, please reach out to the instructor via email or during office hours.

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**Institution:**

[University of [Institution Name]]

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**Last Updated:**

[Last Updated Date]