Course Number:  CIVE 4335-01R  
Course Name:  WATER RESOURCES ENGINEERING  
Meeting Time:  Online and face to face on the dates (Tuesdays) given in the schedule below from 1:40pm to 2:55pm  
Tuesdays Meeting Location:  Academic Services Building 1.106  

INSTRUCTOR INFORMATION  

Instructor: Abdoul Oubeidillah, Ph.D.  
Office:  BSETB 2.526  
Office Hours:  By Appointment  
Do not hesitate to send me an email if we need to talk so we can agree on a convenient time for a phone call, Connect session, or a meeting. Please make sure you add CIVE 4335 in the subject line.  
Office Telephone:  (956)882-8954  
E-mail:  abdoul.oubeidillah@utrgv.edu  

Response Time:  
Generally I will respond to emails within 24 hours of receiving them. If I plan to be away from my computer for more than a couple of days, I will let you know in advance. Any technical questions can be referred to Blackboard Support.  
I will update the online grades each time a grading session has been complete. You will see a visual indication of new grades posted on your Blackboard home page under the link to this course.  

COURSE DESCRIPTION  

In this class, we will learn about hydraulic processes in water resources engineering and hydrologic processes of water resources supply management. The class covers topics of analysis and design of surface and subsurface water resource facilities; design of water supply; gravity flow (open channel) and pressure driven flow (closed conduit); low impact development; water surface profile, modeling, stormwater drainage systems; stormwater quality structure; pumps and pump systems and stations; water distribution; floodplain delineation; sediment transport and sediment exclusion.  

Prerequisite  

CIVE 3331 Environmental Engineering and CIVE4315 Applied Hydrology
TEXTBOOK & COURSE MATERIALS

Required


Recommended Texts & Other Readings

- Other readings will be made available in Blackboard (See Learning Modules).

COURSE OBJECTIVES

Upon completion of the course the student will be able to:

- Describe the concepts of pressure and gravity driven flow
- Calculate head losses in pipe flow
- Analyze a pump system
- Calculate water demand and configure a water distribution system
- Use the EPANET model to design a water distribution network
- Apply different stormwater management methods
- Calculate water surface profile, critical depth and hydraulic jump in open channel
- Use the HEC-RAS model to analyze a river system

TECHNICAL REQUIREMENTS

Computer Hardware

To participate in this hybrid (online/face2face) course, you should have easy access to a computer less than 5-years old with high-speed internet connection via cable modem, LAN or DSL. To ensure you are using a supported browser and have required plug-ins please refer to Supported Browsers, Plugins & Operating Systems for Blackboard Learn from Blackboards resource page.

Student Technical Skills

You are expected to be proficient with installing and using basic computer applications and have the ability to send and receive email attachments.
Software

- Mozilla’s Firefox (latest version; Macintosh or Windows)
- Google Chrome (latest version; Macintosh or Windows)
- Adobe’s Flash Player & Reader plug-in (latest version).
- Apple’s QuickTime plug-in (latest version). A free download is available at
- Virus protection UTRGV Software link
- Microsoft Office UTRGV Software link

Blackboard Support Contact Information:
If you need Blackboard support at any time during the course or to report a problem with Blackboard you can:

- Visit the Blackboard Student Help Site
- Submit a Blackboard Help Ticket
- UTRGV’s Blackboard Support:

<table>
<thead>
<tr>
<th>Brownsville Campus</th>
<th>Edinburg Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Location: Rusteberg Hall Room 108</td>
<td>• Location: Education Building Room 2.202</td>
</tr>
<tr>
<td>• Phone: 956-882-6792</td>
<td>• Phone: 956-665-5327</td>
</tr>
</tbody>
</table>

Hours of Operation

- Monday - Thursday, 7:30 a.m. - 7:00 p.m.
- Friday, 8:00 a.m. - 6:00 p.m.

**COURSE ORGANIZATION & ONLINE TOOLS**

Course Structure:
This course will be delivered mostly online through the course management system Blackboard Learn. You will use your UTRGV account to login to the course from the MyUTRGV.edu site and under applications click on Blackboard Learn. There will also be a number of in class face to face meetings on the dates (Tuesdays) given in the schedule below from 1:40pm to 2:55pm.

The course is organized into 16 weeks of instruction, as outlined in the Course Schedule and Due Dates below. Each week is listed by its main topic and contains required readings, videos, mini lectures, and regular calculation assignments.
**Note:** Most materials used in conjunction with the course are subject to copyright protection.

**Assignments**

Unless indicated otherwise in Weekly materials, you will submit your assignments to their respective assignments area. The due dates in Assignments will be given in the assignment.

**In class face to face**

In addition to the learning activities noted above, I will also hold in class face to face lecture sessions from 1:40pm to 2:55pm, on the dates (Tuesdays) scheduled in the table below, in the Academic Services Building 1.106 to discuss the course material.

**TOPIC OUTLINE/SCHEDULE**

The UTRGV academic calendar can be found at [https://my.utrgv.edu/home](https://my.utrgv.edu/home) at the bottom of the screen, prior to login. Some important dates for spring 2019 include:

- **January 14**  First day of classes
- **January 17**  Last day to add a course or register for spring 2019
- **January 21**  Martin Luther King Jr. Day – NO classes
- **April 10**  Last day to drop a course; will count toward the 6-drop rule
- **April 19-20**  Easter Holiday – NO classes
- **May 2**  Study Day – NO classes
- **May 3-9**  Final Exams
- **May 10-11**  Commencement Exercises

**Important Note:** Activity and assignment details will be explained in detail within each week’s corresponding weekly content area. The schedule below is subject to change so check on blackboard for any changes.

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date (face2face)</th>
<th>Topic</th>
<th>Read</th>
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<tbody>
<tr>
<td>1</td>
<td>15-JAN</td>
<td>Introduction, Syllabus and Water Resources Issues hydrologic cycle, water withdrawals and uses</td>
<td>Handout Chapter 1 &amp; 11.1</td>
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<td></td>
<td></td>
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<tr>
<td>2</td>
<td>29-JAN</td>
<td>Basic hydraulic principles Flow Processes and Hydrostatic Forces</td>
<td>Chapter 8.1 – 8.3 Chapter 3</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Pressurized Pipe Flow – concept and head losses Hydraulic and Energy Grade Line Measurement of Flowing</td>
<td>Chapter 4.1 &amp; 4.3 Chapter 4.2</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Measurement of Fluid in Pressure Conduits Pump System Analysis</td>
<td>Chapter 4.6 Chapter 12.5</td>
</tr>
<tr>
<td>5</td>
<td>12-FEB</td>
<td>Water Demand Water Distribution – system design and configuration</td>
<td>Handout Chapter 12.1 – 12.3</td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Topic</td>
<td>Reference</td>
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<tr>
<td>6</td>
<td>5-MAR</td>
<td>Water Distribution – network simulation</td>
<td>Chapter 12.6 EPANET Manual</td>
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<tr>
<td></td>
<td></td>
<td>EPANET Water Distribution Computer Model</td>
<td></td>
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<tr>
<td>7</td>
<td>12-MAR</td>
<td>Groundwater Governing Equations, Steady-State 1D Flow</td>
<td>Chapter 6.1 – 6.3</td>
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<tr>
<td></td>
<td>17-MAR</td>
<td>Steady-State Well Hydraulics</td>
<td>Chapter 6.4</td>
</tr>
<tr>
<td>8</td>
<td>5-MAR</td>
<td>Review</td>
<td></td>
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<td></td>
<td></td>
<td>Exam 1</td>
<td>TBD</td>
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<tr>
<td>9</td>
<td>12-MAR</td>
<td>SPRING BREAK</td>
<td></td>
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<td></td>
<td>17-MAR</td>
<td></td>
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<tr>
<td>10</td>
<td>26-MAR</td>
<td>Stormwater Control – BMPs and storm sewers and detention &amp; Design of Outlet Structure</td>
<td>Chapters 15 &amp; 16 Handout</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Detention Basin Routing (Level Pool Routing)</td>
<td>Chapter 15.4, p.647-</td>
</tr>
<tr>
<td>11</td>
<td>15-APR</td>
<td>Green Infrastructure/LID</td>
<td>HEC-RAS Manual</td>
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<tr>
<td></td>
<td></td>
<td>Open Channel Flow – steady uniform flow</td>
<td>HEC-RAS Manual</td>
</tr>
<tr>
<td>12</td>
<td>15-APR</td>
<td>Specific Energy and Critical Water Depth</td>
<td>Chapter 5.1 – 5.2</td>
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<tr>
<td></td>
<td></td>
<td>Specific Force and Hydraulic Jump</td>
<td>Chapter 5.2</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Steady Gradually Varied Flow and Water Surface Profile</td>
<td>Chapter 5.3</td>
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<td></td>
<td></td>
<td>Direct Step Method</td>
<td>Chapter 5.3</td>
</tr>
<tr>
<td>14</td>
<td>30-APR</td>
<td>River Analysis System – HEC-RAS model</td>
<td>HEC-RAS Manual</td>
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<td></td>
<td></td>
<td>HEC-RAS Model Application</td>
<td>HEC-RAS Manual</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Hydraulic Structure Design – hydrologic consideration &amp;</td>
<td>Chapter 17.1 –17.4</td>
</tr>
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<td></td>
<td></td>
<td>dam Sedimentation – properties of sediment &amp; sediment</td>
<td>Chapter 18.1 – 18.3</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>Review for Finals</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>No Classes</td>
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<td></td>
<td></td>
<td>Final Exam</td>
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</tbody>
</table>

**GRADING POLICY**

**Graded Course Activities**

Final grades assigned for this course will be based on the percentage of total points earned and are assigned as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>20%</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>General Exam 1</td>
<td>20%</td>
</tr>
<tr>
<td>Participation</td>
<td>5%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.00%</td>
</tr>
</tbody>
</table>

A = 90-100%
B = 80-89%
C = 70-79%
F = Below 70%

Late Work Policy
Be sure to pay close attention to deadlines—there will be no make-up assignments or quizzes, or late work accepted for full credit without a serious and compelling reason and instructor approval.

Viewing Grades in Blackboard
Points you receive for graded activities will be posted to the Blackboard Grade Book. Click on the My Grades link on the left navigation to view your points.

I will update the online grades each time a grading session has been complete—typically 2 days following the completion of an activity. You will see a visual indication of new grades posted on your Blackboard home page under the link to this course.

Naming and Submitting Documents
Before you submit a document, name your file according to the format below. Avoid special characters and spaces in file names. Use a single underline _ to separate words.

<table>
<thead>
<tr>
<th>The name of your...</th>
<th>...should follow the format:</th>
<th>Example:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework 1</td>
<td>LastNameFirstInitial_Homework_1.doc</td>
<td>SmithJ_Homework_1.doc</td>
</tr>
</tbody>
</table>

COURSE POLICIES

Participation
Online courses require your active participation. Here are some tips for success:

- I will set up a discussion forum for this course. In discussion forums, you learn from one another by posing questions, justifying your comments, and providing multiple perspectives. When you prepare for discussions through thoughtful reflection, you contribute to your own successful learning experience as well as to the experience of your peers.

- Log in to the course frequently (at least several times per week for long semesters and daily for summer sessions) and check the announcements. This will keep you apprised of any course updates, progress in discussions, assignment information, and messages requiring immediate attention.

- Be aware of and keep up with the Course Schedule in the Syllabus.
• Participate in team activities to the best of your ability. How well your team does—and how well you do—depends on all the team members working cooperatively.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let me know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing me when difficulties arise during the semester so that we can help you find a solution.

Complete Assignments

All assignments for this course will be submitted electronically through Blackboard unless otherwise instructed. Assignments and discussions must be submitted by the given deadline or special permission must be requested from instructor before the due date. Extensions will not be given beyond the next assignment except under extreme circumstances.

Homework:

• will be completed in a consistent format in all Civil Engineering courses;
  o The student’s full name will be provided in the upper right corner of the first page.
  o The student’s last name will be provided in the upper right corner of additional pages.

• problems involving calculations will be completed on engineering paper before being scanned;
  o Spreadsheet solutions will include algebraic equations and adequate notations to follow the development of the solution and facilitate checks with hand calculations.

• Problem solutions will include the problem statement at the top of the problem followed by any data or other information given to solve the problem.

• Assumptions used to solve problems will be clearly identified.

• References to materials used to solve the problem will be provided, including (when used) solution manuals.
  o Solutions appearing to have been copied from a solution manual will not be
Communication Skills

All students must have adequate writing skills to communicate content in a professional and concise manner. Students must be proficient in their written presentations including strategies for developing ideas, citing scholarly references, writing style, wording, phrasing, and using language conventions. Students must follow APA guidelines, use non-racist and non-sexist language, and include sufficient references to support their thesis and ideas in the paper.

Netiquette

Netiquette describes the code of conduct for an online environment. It ensures respect for others and prevents misunderstandings or unintentional offenses to others. The netiquette described here is amended to ensure your success in this course.

- When you are typing or submitting a response, do not use all capital letters (caps). Caps is equal to SHOUTING YOUR MESSAGE.
- Although it is customary to use acronyms (ex. ROFL - rolling on floor laughing, BTW - by the way, or FYI - for your information) when chatting online, try to avoid using these. There may be those in this course who are not as experienced as you and may miss out on understanding.
- Although you are encouraged to participate and ask questions, it is asked that you do not spam other users (SPAM refers to unwanted or excessive email). Before sending mass emails, consider using the discussion board to post general inquiries or requesting assistance from your instructor.

Time Commitment

Online courses are typically just as time intensive, and may be more rigorous than traditional courses. Many students claim that online courses require more time and commitment. As you begin this course, you would be wise to schedule 8 or more hours per week for studying materials and completing assignments.
Falling behind in this course is particularly problematic because the concepts we cover are cumulative. This means that not becoming proficient with information and objectives presented and assessed in a particular week can lead to low scores for that week as well as in subsequent weeks.

INSTITUTIONAL POLICIES

STUDENTS WITH DISABILITIES

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact Student Accessibility Services (SAS) as soon as possible to schedule an appointment to initiate services. Accommodations can be arranged through SAS at any time, but are not retroactive. Students who suffer a broken bone, severe injury or undergo surgery during the semester are eligible for temporary services.

Pregnancy, Pregnancy-related, and Parenting Accommodations
Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to contact Student Accessibility Services for additional information and to request accommodations.

Student Accessibility Services:
Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD:

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about:

Module 1  February 13 – 19
Module 2  April 10 – 16
Full Fall Semester  April 10 – May 1
ATTENDANCE:

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

I will be using Blackboard tracking tool to monitor their participation in the course.

SCHOLASTIC INTEGRITY

As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University.

Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts.

Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

Definitions

“Plagiarism is a form of cheating. At UTRGV, “plagiarism is the appropriation, buying, receiving as a gift, or obtaining by any means another’s work and the unacknowledged submission or incorporation of it in one’s own academic work offered for credit.”

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the office of student affairs.

Course policies are subject to change. It is the student’s responsibility to check Blackboard for corrections or updates to the syllabus. Any changes will be posted in Blackboard.
SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:

In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

COURSE DROPS:

According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

STUDENT SERVICES:

Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor's office hours. University Resources include the Learning Center, Writing Center, Advising Center and Career Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:

- Learning center: BSTUN 2.10 (Brownsville) or ELCTR 100 (Edinburg)
- Writing center: BLIBR 3.206 (Brownsville) or ESTAC 3.119 (Edinburg)
- Advising center: BMAIN 1.400 (Brownsville) or ESWKH 101 (Edinburg)
- Career center: BCRTZ 129 (Brownsville) or ESSBL 2.101 (Edinburg)