

Construction Materials

HCON 223 – 5 Credits – November 2011

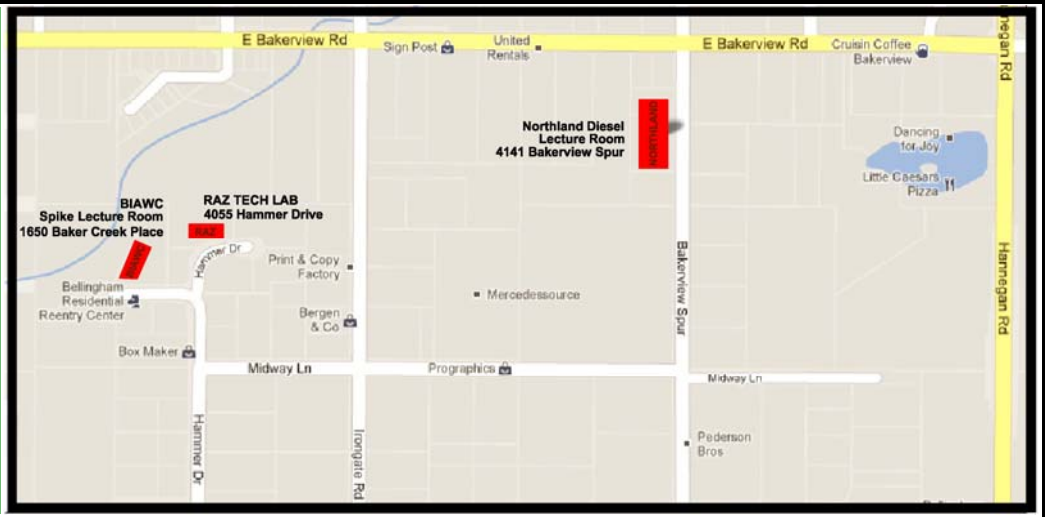


Class Description:

This course provides an introduction to the engineering properties and testing requirements of heavy civil construction materials. Focuses on aggregates, asphalt, and Portland cement concrete as construction materials to the various ASTM Standards.

Location:

**BIAWC Building
Spike Lecture Room
1650 Baker Creek Place
Bellingham, WA 98226**



Dates and Times:

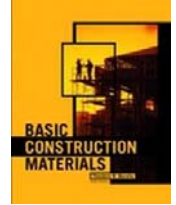
The class is scheduled to run on **Tuesday and Thursday evenings at 6:00-9:00 PM from November 1st to November 24th**. This provides (8) evening classes to cover the course material. In addition, the Instructor has the option to utilize Saturday mornings for course work. Please see the Class Calendar on the third page for details.

Tuition and Registration:

Tuition for this class is \$400. Tuition must be paid before the class begins. Program enrolled students have seniority for this class and should register online three-weeks before the class begins. Continuing education students may begin registering online two-weeks before the class begins. Students may also send class registrations by mail to the following address:

**Washington Engineering Institute
Registration Office
1301 Fraser Street, Suite A3
Bellingham, WA 98229**

School Provided Materials:



- **Lecture Notes:** The school provides lecture handouts as needed.
- **Text Book on Loan: Basic Construction Materials 6th Edition** by Theodore Marotta, Published by Prentis Hall. ISBN: 9780130896254. The textbook is owned by WEI and loaned to students. The textbooks must be returned at the end of class to gain a transcript grade. A fee of \$30 shall be paid for damaged, lost, or destroyed books.
- **Temporary School Laptop:** Enrolled students should obtain their own laptop as soon as possible. However, you may temporarily borrow a school laptop during lecture times, but you will not have it to study at home. Therefore, you should obtain a laptop as soon as possible. Please contact dbren@weiedu.org if you need to borrow a school laptop temporarily during lectures.

Student Provided Materials:

- **Personal Laptop:** Program enrolled students are required to have a laptop in order to conduct their program. Enrolled students should obtain their own laptop as soon as possible.
- 3 Ring Binder, calculator, engineer calculations pad (green sheets), and small straight edge for linework.
- Positive, motivated, respectful, and helpful classroom character

Instructor

Dave C. Bren, PE, MSCE Civil Engineering Technology Instructor

Experience: 15 years of experience in the public and private civil engineering industry. Most recent experience was as the Assistant Public Works Director for the City of Blaine. Mr. Bren established and taught the Civil Engineering Technology program at Bellingham Technical College from 1997-2006 while continuing to consult in the industry.

Registration: Professional Engineer
State of Washington

Education: Master of Science in Civil Engineering
University of Washington

Bachelor of Science in Civil Engineering
University of Washington

Format:

Class Structure: Evenings will typically run in one-hour blocks as follows:

6:00 PM – Class setup and first hour
6:50 PM – Break
7:00 PM – Class
7:50 PM – Break
8:00 PM – Class last hour

Final Exam and Grades:

Students will be graded by attendance (20%) and by class projects (80%). The Instructor holds the sole authority to issue grades and shall issue grades based on a 4.0 schedule as follows.

Grading legend

4.0	A
3.7	A-
3.3	B+
3.0	B
2.7	B-

2.4	C+
2.0	C
1.7	C-
1.3	D+
1.0	D
0.7	D-

AU	Class audited with no grade earned
EXP	Experiential credit granted per policy
EDU	Prior education credit granted per policy
I	Incomplete – Instructor Allows Extra Time to Complete
W	Withdrawn from class

November 2011 – Construction Materials – HCON 223

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
	1	Introduction		2		3	Aggregates		4		5	Optional Lab	6
		6:00-9:00 PM Selection of Materials Properties of Materials Inspection and Testing ASTM Standards				6:00-9:00 PM List of Area Pits / Sources Extraction and Processing Rock types, Properties, & Uses Testing					9:00AM-NOON		
7	8	Asphalt I		9		10	Asphalt II		11		12	Optional Lab	13
		6:00-9:00 PM History, Natural Asphalt. Bituminous Materials. Asphalt Production & Testing Temperature and Viscosity. Asphalt Pavements. Pavement Thickness. Pavement Construction. Recycled Asphalt Concrete. Asphalt Spray Applications.				6:00-9:00 PM Asphalt Plants. Estimating Asphalt Unpaved & Paved Surface Prep Inspection of Mix. Paving Operation & Equipment Asphalt Roofing Products. Asphalt Pipe Coatings. Asphalt Mulch Treatments. Asphalt Joint Materials.					9:00AM-NOON		
14	15	Concrete I		16		17	Concrete II		18		19	Optional Lab	20
		6:00-9:00 PM History & Cement Manufacture Chemical Composition of PCC Physical Properties of PCC Water-Cement Reaction. Types of Portland Cement, ASTM C150. Water, Aggregates, & Admix				6:00-9:00 PM Ingredient Proportioning Concrete Estimating. Concrete Manufacturing. Testing Concrete. Nondestructive Test Methods. Formwork and Placement Curing Concrete. Precast Concrete Products.					9:00AM-NOON		
21	22	Geotest Lab		23		24	Iron, Steel, & Wood		25		26	Optional Lab	
		2:00-5:00 PM Tour Geotest Testing Lab 7-day dry cure break 7-day wet cure break Guest Lecture				6:00-9:00 PM Properties Testing					9:00AM-NOON		



PO Box 483
 Custer WA 98240
admin@weiedu.org
 (360) 739-1428

Class Registration Form 2010 v2.0

Returning students with a Student ID do not need to fill out the gray portions of this form.

Name	
Address	
Phone	
Email	

Class Requested	HCON 223 – Construction Materials
Class Month / Date	November 2011

WAC 490-105-160 – State Licensed School Reporting Requirements:

Student ID #		
SSN #		
Date of Birth		
Gender		
Disability	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Race	<input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black/African American <input type="checkbox"/> Hawaiian Native or Pacific Islander <input type="checkbox"/> Hispanic <input type="checkbox"/> White/Caucasian <input type="checkbox"/> Multi-racial <input type="checkbox"/> Other	
Prior Education	<input type="checkbox"/> Less than high school graduation <input type="checkbox"/> GED <input type="checkbox"/> High School Graduate <input type="checkbox"/> Post H.S., no degree or certificate <input type="checkbox"/> Associate Degree <input type="checkbox"/> Bachelor Degree <input type="checkbox"/> Master or Doctorate Degree	GED Year _____ Graduation Year _____ Graduation Year _____ Graduation Year _____ Graduation Year _____
Name of Last School Attended		

Student Signature

Date