



BILLING RATES - FY 15/16

DEPARTMENT NAME :

Civil Engineering

VICE-PRESIDENT AREA :

Academic Affairs (CoES)

DESCRIPTION OF COMMODITY OR SERVICE :	UNIT OF BILLING	FY 15/16 RATE	CUSTOMERS BEING SERVED
Room 17 Lowry (Materials Testing Equipment)			
Use of 10 kip UTM	Day	\$500.00	External
Use of Torsion Machine	Day	\$500.00	External
Room 21 Lowry (Soil Mechanics Lab)			
Use of Soil Mechanics Lab (Room 21 Lowry)	Hour	\$100.00	External
Atterberg plastic limit test (ASTM D4318)	per each test	\$100.00	External
Atterberg liquid limit test (ASTM D4318)	per each test	\$100.00	External
Sieve analysis with wash #200 sieve (ASTM D422)	per each test	\$100.00	External
Hydrometer gradation analysis (ASTM D422)	per each test	\$120.00	External
Moisture content (ASTM D2216)	per each test	\$20.00	External
Standard Proctor density test up to 5 moisture contents (ASTM D698)	per each test	\$500.00	External
Each additional moisture content	per each test	\$100.00	External
Consolidation test up to 8 load increments (ASTM D2435)	per each test	\$650.00	External
Each additional load increment	per each test	\$100.00	External
Direct shear test up to 3 normal loads (ASTM D3080)	per each test	\$650.00	External
Each additional load	per each test	\$100.00	External
Consolidated undrained (CU) triaxial test with pp measurements on Shelby tube samples (ASTM D4767)	per each test	\$1,000.00	External
Remold and test	per each test	\$1,150.00	External
Unconsolidated undrained (UU) triaxial test on Shelby tube samples (ASTM D2850)	per each test	\$700.00	External
Remold and test	per each test	\$800.00	External
Unconfined compression triaxial test (ASTM D2166)	per each test	\$150.00	External
Rooms 23/29 Lowry (Concrete Materials Labs)			
Use of Concrete Materials Labs (23/29)	Hour	\$80.00	External
Use of 300 kip UTM	Hour	\$100.00	External
Density (ASTM C 188)	per each test	\$100.00	External
Compressive Strength (ASTM C 39) a set of 3 cylinders	per each test	\$75.00	External
Flexural Strength (6' x 6" x 20" beams) for a set of two beams (ASTM C 348)	per each test	\$100.00	External
Rapid Chloride Ion Permeability (ASTM C 1202), for a set of two specimens	per each test	\$550.00	External



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Petrographic Examination (ASTM C 856) for one test specimen	per each test	\$700.00	External
Accelerated Mortar Bar Test (ASTM C 1260 Test) for 3 mortar bars	per each test	\$500.00	External
Concrete Prism Test (ASTM C 1293 Test) for 3 prisms	per each test	\$750.00	External
Freeze-Thaw Durability (ASTM C 666 Test) for 2 prisms	per each test	\$550.00	External
Ultrasonic Pulse Velocity Test to Determine Dynamic Modulus of Concrete	per each test	\$100.00	External
Resonant Frequency Test to Determine Dynamic Modulus of Elasticity	per each test	\$100.00	External
LA Abrasion Test for Aggregates (ASTM C 131)	per each test	\$200.00	External
Micro-Deval Abrasion Test for Aggregates	per each test	\$200.00	External
Sulfate Soundness Test for Aggregates (ASTM C 88)	per each test	\$450.00	External
Particle size distribution	per each test	\$100.00	External
Specific surface area	per each test	\$250.00	External
X-ray diffraction pattern to assess the glassy nature of the silica and pozzolanic reactivity	per each test	\$250.00	External
Strength activity index with portland cement	per each test	\$125.00	External
Initial Time of Setting (ASTM C 191)	per each test	\$75.00	External
Final Time of Setting (ASTM C 191)	per each test	\$75.00	External
Flow of Mortars (ASTM C 1437)	per each test	\$50.00	External
Unit Weight of Mortars	per each test	\$50.00	External
Rate and Degree of Hydration	per each test	\$400.00	External
Microstructure (Scanning Electron Microscope at AMRL)	per each test	\$450.00	External
Room 25 Lowry			
Use of Shimadzu UTM	Hour	\$65.00	External
Room 30 Lowry (Fluids Lab)			
Wave Tank (2x2)	Day	\$1,000.00	External
Tilting Flume	Day	\$75.00	External
4x2 Flume	Day	\$1,600.00	External
Rate per Square Foot of Floor Space	SF/Day	\$1.00	External
Flow Benches	Hour	\$25.00	External
Flow Bench accessories	Hour	\$25.00	External



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Research Labs (off-campus):			
ARTS			
Use of Training/Seminar Room	Day	\$125.00	External
Use of Training/Seminar Room	Half Day	\$70.00	External
Use of small Conference Room	Half Day	\$40.00	External
Use of small Conference Room	Day	\$75.00	External
centrifuge with 4 place rotor	Hour	\$25.00	External
Troxler Gyrotory Compactor	Hour	\$30.00	External
Troxler Ignition Oven	Hour	\$30.00	External
Brookfield Rotational Viscometer	Hour	\$20.00	External
Cox Rolling Thin Film Oven	Hour	\$30.00	External
Bohlin Dynamic Shear Rheometer	Hour	\$30.00	External
PTI Vibratory Compactor	Hour	\$30.00	External
PTI Asphalt Pavement Analyzer	Hour	\$80.00	External
Cannon Bending Beam Rheometer	Hour	\$30.00	External
Interlaken Direct Tension Tester	Hour	\$30.00	External
Troxler Nuclear Asphalt Density Gauge	Hour	\$50.00	External
Prentex Pressure Aging Vessel	Hour	\$30.00	External
Waters Chromatograph	Hour	\$100.00	External
Cox Axial Test System	Hour	\$100.00	External
Oros Sound Vibration Analyzer	Hour	\$50.00	External
Grieve Large Floor Oven	Hour	\$20.00	External
Use of Environmental Chamber	Hour	\$50.00	External
Use of AMPT	Hour	\$100.00	External
Use of Silverson Hi Shear Blender	Hour	\$20.00	External
Use of Mary Ann Sifter	Hour	\$30.00	External
Use of RoTap Shaker	Hour	\$30.00	External
Use of LA Abrasion Machine	Hour	\$50.00	External
Use of Masonry Saw	Hour	\$30.00	External
Use of Core Drill	Hour	\$30.00	External
Use of 10 kip UTM	Hour	\$80.00	External
Use of Foamer	Hour	\$100.00	External
Use of Waters HPLC	Hour	\$100.00	External
WISER			
Wind Tunnel (set up time- tunnel not running)	Day	\$500.00	External
Wind Tunnel time (fans running)	Hour	\$125.00	External
Use of Florida House Instrumentation Box	Day	\$500.00	External
Flat Bed Trailer Use	Day	\$50.00	External
Use of MTS servo hydraulic rams	Day	\$600.00	External
Simpson Triaxial Test Machine	Day	\$500.00	External
Use of Tinius Olsen 10 kip UTM	Day	\$500.00	External



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Large test frame plus actuator	Day	\$600.00	External
Structural Testing Trailer	Day	\$1,000.00	External
Use of High Speed Camera	Hour	\$150.00	External
Use of BrerWulf	Day	\$600.00	External
Use of Air Cannon	Hour	\$50.00	External
Use of wall racking fixture	Day	\$600.00	External
Use of Floor Space	SF/Day	\$1.00	External
Structures Lab: Dynamic Testing			
Piezoelectric Accelerometer	Day	\$25.00	External
Piezoelectric Miniature Dynamic Strain Guage	Day	\$25.00	External
Instrumented Hammer (Small)	Day	\$20.00	External
Instrumented Hammer (Large)	Day	\$30.00	External
6 channel Data Acquisition System	Day	\$150.00	External
Shaker (17N) with Controller	Day	\$100.00	External
Laptop with Data Acquisition Software	Day	\$50.00	External
Clemson Hydraulics Lab (CHL)			
4x4 Indoor Flume	Day	\$1,600.00	External
Use of existing fluid tanks	Hour	\$50.00	External
Use of ADV	Hour	\$20.00	External
Use of Pumps (.5 - 2 CFS)	Hour	\$10.00	External
Use of 4x4 Outdoor Flume	Day	\$1,600.00	External
Rate per Square Foot Floor Space	SF/Day	\$1.00	External
Vehicles			
1993 Ford F250	Day/Mile*	\$60/.55*	External
2004 Ford Ranger	Day/Mile*	\$75/.55*	External
2002 Ford SuperCab	Day/Mile*	\$75/.55*	External
2005 White Dodge Quad Cab Pickup	Day/Mile*	\$75/.55*	External
2005 Black Dodge Quad Cab Pickup	Day/Mile*	\$75/.55*	External
2006 Ford E350 12 Passenger Van	Day/Mile*	\$85/.55*	External
*Daily rate includes 100 mi/day. 55 cent/mile for every mile over 100/day			
1999 EZGo Golf Cart	Day	\$35.00	External
Transportation			
Transportation Surveillance Van Mobilization	Day/mile**	\$85/.55**	SCDOT/External
** includes 150 mi/day Minimum 150 miles			
Transpo Van static data collection	Hour	\$100.00	SCDOT/External
Transpo Van dynamic data collection	Mile	\$10.00	SCDOT/External



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Corrosion Lab (Room 17)			
Rapid Chloride Ion Permeability (ASTM C 1202), for a set of three specimens	per each test	\$800.00	External
Linear Polarization Resistance Test	per each test	\$100.00	External
Cyclic Polarization Tests	per each test	\$400.00	External
Elechemical Impedance Spectroscopy	per each test	\$400.00	External
Electrical Impedance Spectroscopy	per each test	\$100.00	External
Cyclic Voltammetry Test	per each test	\$400.00	External
Other Electrochemical Tests	per each test	\$300.00	External
Half-Cell Potential	Hour	\$100.00	External
Pontentiostat	Hour	\$600.00	External
Automatic Corrosion and Electrochemical Impedance Monitoring System	Hour	\$300.00	External
Advanced DC/AC power source	Hour	\$100.00	External
Scanning Electrochemical Microscope	Hour	\$1,000.00	External
General			
Technician Time	Hour	\$75.00	External
Undergraduate Student Time	Hour	\$15.00	External
Graduate Student Time	Hour	\$30.00	External
Test Specimen Disposal Fee	Ton	\$200.00	External