



BILLING RATES - FY 23/24

DEPARTMENT NAME :
Civil Engineering

VICE-PRESIDENT AREA :
Provost-Academic Affairs - CECAS[College of Engineering, Computing, and Applied Sciences]

| DESCRIPTION OF COMMODITY OR SERVICE : | UNIT OF BILLING | FY 23/24 RATE | CUSTOMERS BEING SERVED |
|---|------------------------|----------------------|-------------------------------|
| 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 |



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| 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 Lab) | | | |
| Use of Concrete Materials Labs (23/29) | Hour | \$80.00 | 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 |
| 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 |



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| Freeze-Thaw Durability (ASTM C 666 Test) for 2 prisms | per each test | \$550.00 | External |
| LA Abrasion Test for Aggregates (ASTM C 131) | per each test | \$200.00 | External |
| Strength activity index with portland cement | per each test | \$125.00 | External |
| Research Labs (off-campus): | | | |
| ARTS | | | |
| Use of Training/Seminar Room | Day | \$125.00 | External |
| Use of Training/Seminar Room | Half Day | \$70.00 | 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 |



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| 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 |
| 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 |



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| Use of 10 kip UTM | Hour | \$80.00 | External |
| Use of Waters HPLC | Hour | \$100.00 | External |
| WiSER | | | |
| Wind Tunnel time (fans running) | Day | \$1,000.00 | External |
| BEL - Built Environment Lab | | | |
| Miniature uniaxial accelerometer w/BNC adapter plug | Day | \$7.50 | External |
| ICP impedance head for shaker modal testing | Day | \$12.75 | External |
| Dual purpose +/-40 lbf, 6500 Hz shaker | Day | \$140.00 | External |
| Shaker Expansion head for base excitation | Day | \$19.00 | External |
| Shaker Controller and Analyzer | Day | \$254.00 | External |
| Test Support Personnel | Day | \$1,000.00 | External |
| Flat Bed Trailer Use | Day | \$50.00 | External |
| Use of MTS servo hydraulic rams | Day | \$600.00 | External |



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| Use of Tinius Olsen 10 kip UTM | Day | \$500.00 | External |
| Large test frame plus actuator | Day | \$600.00 | External |
| Use of High Speed Camera | Hour | \$150.00 | 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 |
| Use of Portable Hydraulic Load System | DaY | \$500.00 | External |
| Use of vibrating wire gauge data acquisition system | Day | \$75.00 | External |
| Use of 20 channel data acquisition system | Day | \$500.00 | External |
| Piezoelectric Accelorometer | 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 |



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| Laptop with Data Acquisition Software | Day | \$50.00 | External |
| Use of Strong Floor | Day | \$600.00 | External |
| Use of Forklift | Hour | \$30.00 | External |
| Transportation | | | |
| Transportation Surveillance Van Mobilization | Day/mile** | \$85/.55** | External |
| ** includes 150 mi/day Minimum 150 miles | | | |
| Transpo Van static data collection | Hour | \$100.00 | External |
| Transpo Van dynamic data collection | Mile | \$10.00 | External |
| Corrosion Lab (Room 17) | | | |
| Rapid Chloride Ion Permeability (ASTM C 1202), for a : | 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 |



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| 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 |
| Potentiostat | Hour | \$600.00 | External |
| Automatic Corrosion and Electrochemical Impedance Monitoring | Hour | \$300.00 | External |
| Advanced DC/AC power source | Hour | \$100.00 | External |
| Scanning Electrochemical Microscope | Hour | \$1,000.00 | External |
| General | | | |
| Faculty Time | Hour | \$250.00 | External |
| Technician Time | Hour | \$100.00 | External |
| Undergraduate Student Time | Hour | \$15.00 | External |
| Graduate Student Time | Hour | \$30.00 | External |
| Test Specimen Disposal Fee | Ton | \$200.00 | External |