2016 NYC SUMMER INTERNSHIP PROGRAM

AGENCY NAME

NYC DEPARTMENT OF TRANSPORTATION

DIVISION

DOT-013-Bridges-Stress Analysis

ADDRESS1 55 Water Street, 8th Floor

ADDRESS2 New York, NY, 10041

CONTACT NAME Sue Grecke

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PHONE

FAX

AGENCY DESCRIPTION (Max characters 3000)

DOT's mission is to provide for safe, efficient and environmentally responsible movement of people and goods in the City of New York and to maintain and enhance the transportation infrastructure crucial to the economic vitality and quality of life of our primary customers, City residents.

Our Department serves all residents of New York City as well as commuters, tourists and other visitors that use our City's streets, sidewalks, waterways and public plazas. We also serve the trucking industry and other businesses that rely on our transportation infrastructure for their business needs. We serve users across different modes and needs including: pedestrians, cyclists, motorists, truck drivers, the elderly, the disabled and the very young.

UNIT DESCRIPTION (Max characters 1000)

Bridge Maintenance/ Repair

To investigate the state of balance of NYC'S movable bridges.
The project consists of:
-Installing electric resistance strain gages on mechanical components of the movable bridge machinery,
-Collecting data with electronic instruments.
-Interpreting the data.
-Writing reports.

POSITION TITLE (Max characters 100)

College Aide or Summer Intern

INTERNSHIP RESPONSIBILITIES (Max characters 1500)

Avg daily duties: 60% of the time will be in the field and 40% in the office.
The student will become familiar with movable bridges machinery such as: brakes, bearings, reducers, locks, gears and sheaves. They will learn the strain gage installation procedure. They will work with the Data Acquisition System and learn data processing procedure.

Task Description:
Assist with field installation of electric resistance strain gages on movable and fixed bridges.
-Using power tool clean the spot from paint and grease.
-Weld or bond strain gages to the clean and polish spot.
-Solder wiring to the gages and connect them in Half (for bending stress) or Full (for shear strain) Wheatstone

Bridge-wire connection scheme.
-Protect gages from moisture, chemical attack or mechanical damage.

Monitor test data and calculate stress variation:
-Under supervision, connect previously installed gages with extension wire to the Strain Gage Conditioner and Amplifier System and respectively to the Oscillographic Recorder.
-Monitor data during the test. Repeat 3-4 times.
-Using strength of materials formulas and the geometry of the structure elements calculate the relationship between "microstrain" (test variable) and Torque or Bending, Tension Stress.
-Help with report preparation.

QUALIFICATIONS/SPECIAL SKILLS/AREA OF STUDY (Max characters 1500)

Major: Mechanical Engineering
Computer literate: Microsoft Word, Microsoft Excel. Willing and bale to go and work in the field, sometimes at heights and in dirty environment while performing strain gage installation work and tests.

APPLICATION PROCESS (Max characters 700)

E-mail resume with cover letter to: sgrecke@dot.nyc.gov

SALARY RANGE

12.55-20.58 per hour

☐ **Internship may be used to fulfill college credit requirement**

ADDITIONAL INFORMATION / COMMENTS (Max characters 700)

While school is in session, the College Aide is asked to work 17 hours a week. We will work with your schedule. While on summer break, the student is asked to work up to 35 hours a week. We do not work evenings or weekends.

Summer Interns work 35 hrs a week and the assignment ends on August 26, 2016.