Consolidated Edison / Brooklyn Technical High School
Summer Internship Program

Program Overview Handout

- ## Program Overview

  The Con Edison/Brooklyn Technical High School Summer Internship Program was founded in 2000 by Brooklyn Tech alum, Dr. M. Mandery, CEO of the Brooklyn Tech Alumni Foundation and Tech alumni who are senior executives at Con Edison. Con Edison hires approximately 15 summer interns the majority of whom will work in their Brooklyn-Queens Electric Operations. Recently openings in other departments have become available. Brooklyn Tech juniors from the Computer Science, Applied Physics & Electrical Engineering and Math Science Institute majors are given preference to apply for the internship. Each intern is assigned a summer project that will be completed under the guidance of a Con Edison mentor. Interns are taken on field trips and participate in meetings to improve their understanding of Con Edison's distribution systems. Interns are required to do a final presentation at the end of the summer.

- ## Program Benefits to you as a Student

  As a student you will gain valuable experience working in a corporate environment. You will learn and understand Con Ed's Distribution Systems and its importance to New York City. Skills learned at Tech will be used as you work in teams to complete your project. You will see the importance of developing good communication skills. Lastly, you will earn money and learn how to manage it. Current pay rate is $12.00/hr.

- ## Program Benefits to Con Edison

  Con Edison benefits by bringing in fresh new ideas and modern technologies. It also improves its corporate image and increases interest among the future workforce.

- ## Program Requirements
  - Must be a junior in Computer Science, Applied Physics & Electrical Engineering or Math Science Institute
  - Must have 85 or higher overall average
  - Highly motivated – self starter with good communications skills
  - Must be able to work entire 9 weeks of summer (June 29, 2009 – August 28,
  - Must possess valid working papers if under 18 (valid US Work Eligibility Papers if non-citizen)

Application Form, Essay Form and description of the various projects are posted on the bths.edu website in the 'Internship' section

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APPLICATION FORM

INSTRUCTIONS:
A complete application packet must be submitted **electronically** to Mr. Honor via email at ihonor@bths.edu
by the deadline of **March 20, 2009**. A complete application packet includes: a completed application form, a completed application
essay, student transcript and a personal resume. **Applicants must be available for an interview on Thursday April 16th and Friday
April 17th, 2009 at Con Edison.** Applicants who have been selected for the interview will be notified by Monday, April 6, 2009.

APPLICATON DEADLINE: Applications must be submitted via email to Mr. Honor by Friday, March 20, 2009

*STUDENT INFORMATION - Please **PRINT** all information **legibly and neatly***

NAME: _____
          LAST NAME   FIRST NAME   MIDDLE INTIAL

ADDRESS: _____

_____

_____
CITY   STATE   ZIPCODE

TELEPHONE NUMBER _____

CELL PHONE NUMBER _____

BTHS E-MAIL: _____

SOCIAL SECURITY NUMBER _____

DATE OF BIRTH _____/_____/_____   TECH MAJOR _____

          Month   Day   Year   PREFECT _____

Please list in order of preference the internships that you are interested in pursuing this summer.

1. _____

2. _____

3. _____

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APPLICATION/ ESSAY FORM

_____
Applicant's Name

Prepare a 300 word typed essay that address the following:

- Your career interests
- How participation in the Program will add to your personal and academic development

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Work Location: 30 Flatbush Ave., B/Q Engineering Department
Number of Positions: 1
Reports to: Divyang Bodawala

Brooklyn Technical High School Internship – Summer 2009:
Internship A1 – Automation of the Power Quality Monitoring Program

The Power Quality group ensures that the equipment operating on the Con Edison system performs adequately to meet the customer voltage requirements throughout Brooklyn and Queens. By monitoring voltage levels, load conditions as well as various other system and equipment properties, we are able to maintain an efficient electric distribution system.

Qualifications:
Candidate must be a self-starter, highly motivated with a high degree of integrity, energy, initiative, resourcefulness and imagination. Must possess strong administrative and organizational skills and be able to effectively manage multiple assignments. Strong teamwork, leadership, interpersonal and decision-making skills are essential. Student should be independent and have good time management.

Duties:
- Study operational needs and develop studies using PI ProcessBook
-

Work Location: 30 Flatbush Ave., B/Q Engineering Department
Number of Positions: 1
Reports to: Kirill Zolotov

Brooklyn Technical High School Internship – Summer 2009:
Internship A2 – PVL/RMS/New Vault ID Database

PVL (Poly Voltage Loadflow) is a model of the Con Edison electrical infrastructure from which construction work is planned and analyzed. RMS (Remote Monitoring System) is a load tracking system which plays a critical part in PVL load modeling. Both of these systems rely on accurate vault numbers which are given out using an EXCEL spreadsheet which is not very accurate.

Qualifications:
Student must possess a good work ethic and be flexible in meeting assignments. Excellent analytical skills with a technical background as well as strong interpersonal skills are required. Candidate must be a self-starter, with a high degree of integrity, energy, initiative, resourcefulness and imagination.

Duties:
- Develop a basic understanding of the Con Edison Distribution System.
- Get familiar with the basic workings of "PVL".
- Develop an in-depth understanding of the "network unit" and the role they play in network distribution.
- Analyze the current process for obtaining a new vault number and its tracking methods.
- Develop an in-depth understanding of maps, models, and the relevant relationships there of.

Results Required:
- Work in a team to recommend and implement a new database which will combine two current databases for obtaining new structure numbers.
- Make a presentation to the staff on findings and developments at the end of the assignment.
- Document findings and update existing system documentation.

Skills Required:
- Familiarity with a programming language such as Visual Basic for Applications and JAVA.
- Ability to read prints, plates, and diagrams.
- Microsoft Office applications, especially Access and Excel.

Work Location: 30 Flatbush Ave, B/Q Engineering Department
Number of Positions: 1
Reports to: David Rivera

Brooklyn Technical High School Internship – Summer 2009:
Internship A3 – Tracking of Area Load Transfers

The Long Range Planning group is responsible for designing projects to accommodate the increasing electrical load growth of neighborhoods in the Brooklyn and Queens Service region. The most common type of project is called a network load transfer and involves years of planning and preparation. It is imperative that all of the information and work pertinent to the load transfers be organized and tracked from inception to completion.

Qualifications:

Student must be a self-starter able to manage multiple assignments and deadlines. Strong intrapersonal skills are needed to communicate with different parties involved in the assignment and assess needs of different groups. Must be able to learn current tracking procedures and make their programs compatible with existing systems.

Duties:

- Learn the processes associated with system upgrades for load growth
- Develop a system to track network transfers similar to the current Major Projects Database
- Develop reports to be used during staff meeting regarding load transfer projects
- Create a database that shows conditions before the load transfer, during the load transfer and after completion of all load transfer moves for the 2009 Long Island City project

Results Required:

- An system compatible with the current Major Projects Database to incorporate Load Transfer work regarding moves and sequences
- An interface for managing the status of load transfer projects, layouts, and before and after sketches
- Provide a presentation to the staff on this project at the end of the assignment

Skills Required:

- Microsoft Office Applications (MS Access)
- Should have previous programming knowledge
- Ability to learn and utilize programming tools needed to complete assignment

Work Location: 30 Flatbush Ave, B/Q Engineering Department
Number of Positions: 1
Reports to: Daniel Otomi

Brooklyn Technical High School Internship – Summer 2009:
Internship A4 – Low Voltage Complaint Tracking System

Con Edison is committed to delivering our customers the highest level of service on the electrical distribution grid. When a customer experiences low voltage levels, the power quality group investigates the system conditions and anomalies and issues work to fix or upgrade facilities in the area.

<u>**Qualifications**</u>:
Student must be motivated to learn new techniques and procedures. Analytical and problem solving skills will be needed to develop new tracking procedures. The ideal candidate will apply him or her self to meeting assignments while working towards creating a comprehensive tracking system for low voltage complaints.

<u>**Duties**</u>:
- Learn the low voltage complaint process and document all the steps taken throughout the lifespan of a voltage complaint
- Develop an understanding of power quality issues and various solution techniques
- Develop a system to track low voltage complaints, field inspections, voltage chart recordings, and system reliability layouts.
- Help solve actual customer complaints throughout the summer

<u>**Results Required**</u>:
- A viable tracking system of low voltage complaints established
- All previous low Voltage cases imported into system for historic archiving
- Provide a presentation to the staff on this project at the end of the assignment

<u>**Skills Required**</u>:
- Microsoft Office Applications (MS Access preferred)
- Strong analytical and problem solving skills
- Ability to learn and utilize programming tools and technique

Work Location: 30 Flatbush Ave, B/Q Engineering Department
Number of Positions: 1
Reports to: Yuri Perez-Malko

Brooklyn Technical High School Internship – Summer 2009:
Internship A5 – Automated Study Tracking

Con Edison is committed to delivering our customers the highest level of service on the electrical distribution grid. To ensure that during the next summer period, our equipment can sustain the peak load demands, the B/Q Secondary Distribution Group conducts studies to identify potentially overloaded neighborhoods and designs load relief projects to fix or upgrade facilities in the area.

Qualifications:

Student must be motivated to learn new techniques and procedures. Analytical and problem solving skills will be needed to develop new tracking procedures. The ideal candidate will apply him or her self to meeting assignments while working towards creating a comprehensive tracking system for load relief projects.

Duties:
- Learn the load relief process and document all the steps taken throughout the lifespan of a load relief project
- Develop an understanding of overload issues and various solution techniques
- Develop a system to track load relief projects from history, to engineering, to design, and to field layouts
- Help solve actual network overloads throughout the summer

Results Required:
- Develop a system to optimize, track, and review the effectiveness of Load Relief projects
- Develop a tracking system that minimizes oversight
- Develop means to measure the effectiveness of previous load relief projects by comparison with current load analysis
- Provide a presentation to the staff on this project at the end of the assignment

Skills Required:
- Microsoft Office Applications (MS Access prefers)
- Strong analytical and problem solving skills
- Ability to learn and utilize programming tools and techniques

Work Location: 30 Flatbush Ave, B/Q Engineering Department
Number of Positions: 1
Reports to: Sumi Kar

Brooklyn Technical High School Internship – Summer 2009:
Internship A6 – Backyard Pole Tracking

Con Edison has a vast underground and overhead infrastructure which supports the distribution of electric service to all customers. There is a directive to eliminate backyard electric services and replace them with more accessible services connected from the street. To ensure all services are replaced, the Brooklyn Queens Distribution Engineering Department must track and manage all projects throughout the service area.

Qualifications:

B/Q Distribution Engineering seeks a dedicated, dynamic, and innovative student to join its engineering team. This individual must recognize the importance of Commitment to Excellence, demonstrate a high energy level, and demonstrate the ability to handle multiple assignments with changing priorities while meeting deadlines. In addition, strong oral and written communication skills are required. To succeed in this position, the right candidate must be self-motivated, resourceful and articulate. Computer skills are required for data monitoring, analysis and interpretation.

Duties:
- Develop a basic understanding of the Con Edison Distribution System
- Develop an in-depth understanding of the B/Q Distribution Engineering department procedures and the different components involved in large scale projects
- Learn to use all the different resources available at Con Edison
- Maintain and document the aforementioned tracking system

Results Required:
- Develop a system that will track pending, working, and completed rear yard service replacements
- Document protocols and procedures used
- Make a presentation to the staff on findings and developments at the end of the assignment.

Skills Required:
- Microsoft Office applications (Word, Excel, Access, and PowerPoint)
- Any programming language preferred

Work Location: 30 Flatbush Ave, B/Q Engineering Department
Number of Positions: 1
Reports to: Sarah Nelson

Brooklyn Technical High School Internship – Summer 2009:
Internship A7 - 27kV Cable Capability Analysis

Brooklyn / Queens Underground Primary (27kV) department plans reliability work and load relief work throughout the year. The candidate will perform an analysis of the recently installed primary cables near the substation to determine the correct capability of the cable. The candidate will develop a tracking system to be utilized by the Primary Department and Mapping Department to track the correct capability until the maps can be updated. If it is found that the capability is not sufficient, the candidate will work with the Primary Department to create possible solutions.

Qualifications:
Student must possess a good work ethic and be flexible in meeting assignments. Excellent analytical skills with a technical background as well as strong interpersonal skills are required. Candidate must be a self-starter, highly motivated with a high degree of integrity, energy, initiative, resourcefulness and imagination.

Duties:
- Develop a basic understanding of the Con Edison Distribution System.
- Develop an in-depth understanding of the B/Q Distribution Engineering department procedures and the role of existing computer systems as they relate to those procedures.
- Develop an understanding of the Con Edison's network modeling system and mapping system.
- Use the mapping modeling system, mapping system, and primary layouts to complete the primary cable analysis.

Results Required:
- Document cable analysis findings and update existing system documentation.
- Make a presentation to the staff on findings and developments at the end of the assignment.

Skills Required:
- Strong analytical and problem solving skills
- Ability to learn and utilize programming tools and techniques
- Microsoft Office applications (MS Access preferred)

Work Location: 30 Flatbush Ave., B/Q Control Center
Number of Positions: 1
Reports to: William V. Reino

Brooklyn Technical High School Internship – Summer 2009:
Internship B1 – Dead Feeder Management / Secondary Radial Ties Management

Qualifications:

B/Q Emergency Control Center is looking for a diligent individual to join the team. The students must possess a good work ethic and be flexible in meeting assignments. Excellent analytical skills with a technical background as well as strong interpersonal skills are required. The successful candidate must be a self-starter, with a high degree of integrity, energy, initiative, resourcefulness and imagination. This assignment focuses the applicants on analysis & modifications of existing computer systems.

Duties:

- Develop a basic understanding of the Con Edison Distribution System.
- Analyze user requirements, procedures, and problems to automate processing and to improve existing computer systems.
- Consolidate and organize inactive distribution feeder records into a user-friendly application.
- Consolidate and organize secondary ties that are made within the low voltage distribution system into a user-friendly application.

Results Required:

- Document findings and update existing system documentation.
- Implement necessary changes to ensure data quality and consistency across existing systems and reports.
- Refine applications/reports for the processing of inactive cable.
- Implement new applications/reports for the processing of inactive cable.
- Make a presentation to the staff on findings and developments at the end of the assignment.

Skills Required:

- Computer science design concepts
- Ability to read maps, documents, reports, sketches, and diagrams
- Microsoft Office applications (including MS Access)
- Familiarity with a programming language such as VB or C++

Work Location: 30 Flatbush Ave., B/Q Electric Control Center
Number of Positions: 1
Reports to: Leon Bukhman

Brooklyn Technical High School Internship – Summer 2009:
Internship B2 - Engineering Workshop Maintenance

The Engineering Workshop is an ASP.NET web application used for contingency analysis and monitoring of the electrical distribution system. The application has evolved to include hundreds of reports and is visited by over 600 distinct users each month. Due to this growth, maintaining a high level of reliability and efficiency is critical.

Qualifications:
Student must possess a good work ethic and be flexible in meeting assignments. Excellent analytical skills with a computer science background as well as strong interpersonal skills are required. Candidate must be a self-starter, with a high degree of integrity, energy, initiative, resourcefulness and imagination. This assignment focuses the applicant on analysis of existing computer systems and recommendations based on that analysis.

Duties:
- Develop a basic understanding of the Con Edison Distribution System.
- Develop an in-depth understanding of the B/Q Control Center procedures and the role of existing computer systems as they relate to those procedures.
- Analyze user requirements, procedures, and problems to automate processing and to improve existing computer systems and information structures.
- Execute SQL queries against existing databases utilizing efficient data access methods and an in-depth understanding of the data structures being queried.

Results Required:
- Implement necessary changes to ensure data quality and consistency across existing systems and reports. Some of the tasks include:
  - Linking historic load information to the customer information page
  - Parsing B-Ticket remarks to highlight important information (note: a B-Ticket is a record of a customer complaint such as a outage)
  - Linking crewing information to the list of assigned B-Tickets
  - Implement a web application for tracking crews assigned to B-Tickets
  - Transfer a web application for tracking low voltage secondary ties within the electric distribution system from one server to another
- Implement new reports to accommodate the emergent needs of the B/Q Control Center.
- Document findings and update existing system documentation.
- Make a presentation to the staff on findings and developments at the end of the assignment.

Skills Required:
- Computer science design concepts
- Microsoft Office applications (including MS Access)
- Relational Database design
- Familiarity with a programming language such as VB, C++, Java, or Perl

Work Location: Astoria Tunnel Maintenance Office, Central Gas Operations EH&S
31-01 20th Avenue, Astoria, N.Y. 11105
Number of Positions: 1
Reports to: Warren Miller, EH&S Project Specialist

Brooklyn Technical High School Internship – Summer 2009:
Internship C1 – Environmental Management in Gas Operations

Con Edison recognizes environmental stewardship, and maintaining the highest health and safety standards, as the cornerstone of everything we do. The theme of this internship is the management of chemicals in the work place. During the course of the internship, the student will be exposed to all aspects of Environmental Management in Gas Operations.

Qualifications: The student must be interested in pursuing a career in Environmental Science, must possess a good work ethic and be flexible in meeting assignments. Excellent analytical skills with a technical background as well as strong interpersonal skills are required. Candidate must be a self-starter, highly motivated with a high degree of integrity, energy, initiative, resourcefulness and imagination.

Duties:
- Develop new ideas and assist in enhancing the existing Chemical Inventory process for the Hunts Point Compressor Station
- Input Chemical Inventory data into Chemical Reporting System
- Input new Chemical Approval Requests
- Assist in other EH&S projects

Results Required:
- Key lessons to be learned
  - Environmental Management Systems
  - Safety Procedures at Con Edison
  - Gas Operations Greening Incentives
  - Government Environmental Regulation Compliance
  - Waste handling and Recycling
- Develop an in-depth understanding of the Chemical Reporting System
- Document improvements in the existing Chemical Inventory process for the Hunts Point Compressor Station
- Provide a presentation to the staff on this project at the end of the assignment

Skills Required:
- Microsoft Office Applications (MS Access preferred)
- Strong analytical and problem solving skills
- Ability to learn and utilize programming tools and techniques

Work Location: Astoria Yard – Central Field Services – Astoria Operations
(Entrance on 20th Ave and 31st Street)
Number of Positions: 1
Reports to: Henry Dong

Brooklyn Technical High School Internship – Summer 2009:
Internship D1 – Astoria Operations Performance Tracking

Qualifications:

Astoria Operations of Central Field Services is seeking to recruit a productive and conscientious student who has a strong sense of personal responsibility and has a commitment to providing a superior level of work performance. The ideal candidate must be well organized, detail oriented, able to render sound business decisions, and have the flexibility to handle multiple assignments and meet deadlines. Excellent analytical skills with a computer science background with an emphasis on database programming (MS Access). Must possess strong oral and written communication skills and have the demonstrated ability to effectively interact with various levels of personnel.

Duties:

- Develop a basic understanding of Con Edison Astoria Operations.
- Develop new ideas and assist in enhancing LEMS (Logistic Emergency Management System) for Emergency Operations and Fleet Operations.
- Enhance the MS Access database program to generate trends, generate weekly/monthly reports, and chart/diagrams associated with work performance.
- Assist in other Astoria Operations projects.

Results Required:

- Develop an in-depth understanding of the process involved in Astoria Operations.
- Enhance MS Access programs to track work performance and generate reports.
- Document initiative for knowledge transfer.
- Make a presentation to the staff on findings and developments at the end of the assignment.

Skills Required:

- Microsoft Office Applications. (MS Access preferred)
- Strong analytical and problem solving skills.
- Relational Database design
- Familiarity with programming language such as Visual Basic

Work Location: 4 Irving Place, Room 1138 (Secondary System Analysis Group)
Number of Positions: 1
Reports to: Delfina Isaac

Brooklyn Technical High School Internship – Summer 2009
Internship - E1 - Stray Voltage Events Tracking

Qualifications:

Candidate must be detail oriented, possess a good work ethic, and be flexible in handling multiple tasks and changing priorities to meet deadlines. Excellent analytical skills with a technical background as well as strong interpersonal skills are required. Candidate must be a self-starter, with a high degree of integrity, energy, initiative, resourcefulness, and creativity.

Responsibilities:

- Develop a basic understanding of the Con Edison Electric Distribution System
- Develop an in-depth understanding of manhole events and stray voltage/electric shock occurrences and their root causes
- Develop the ability to read Network Grid Maps, MS Plates, and prints/diagrams in order to pinpoint locations for field investigations

Results Required:

- Develop procedures for testing and improving quality of data used in various engineering analyses
- Evaluate data sources, automate uploads, and create reports
- Make a presentation on a major project and personal/professional developments at the end of the internship

Skills Required:

- Ability to compile data requirements; develop and maintain databases used for various engineering analyses and reporting
- Strong computer skills with proficiency in Microsoft Office applications including Access
- Familiarity with a scripting language such as Microsoft Visual Basic for Applications (VBA) and Microsoft SQL Server (Stored Procedures and Transact-SQL coding a plus) with ability to resolve debugging, programming, and logic problems