

THE LB TRAINING CENTER - SOLAR PANEL INSTALLATION TRAINING PROGRAM

COURSE DESCRIPTION

The LB Training Center – LB Electric Company, Solar Panel Installer Training Course is an entry level course in the study of solar photovoltaic (PV) cells, modules, and system components; electrical circuits; PV system design and sizing for use on businesses; understanding solar electric products and applications; understanding energy conversion from sunlight to electricity, and working with solar conversion equipment.

This 70 hour course is designed to give students the book knowledge and hands on experience they will need to gain a certificate as a solar panel installer from the NJIT or a New Jersey community college. The learning objectives, lectures, lab activities, test and homework assignments taught in this course were developed based on a learning objective model created by the North American Board of Certified Energy Practitioners (NABCEP). In addition, the course is also designed to prepare students to take the NABCEP, “Entry-level Solar Photovoltaic Certificate of Knowledge” exam.



Note: This course is not intended to meet or replace the requirements for a Licensed Electrician.

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COURSE GOALS:

Upon completion of this course, the student will be able to...

1. Demonstrate knowledge and application of key solar electric system terms and concepts;
2. Size & design a simple photovoltaic system;
3. Mount, ground, position, install, wire, and troubleshoot a photovoltaic system;
4. Test voltage generated by photovoltaic modules, and
5. Pass the NJIT PV Certification Exam.



COURSE LEARNING OBJECTIVES:

1. Describe markets and applications for photovoltaic systems
2. Identify safety hazards of photovoltaic systems; identify practices and protective equipment during photovoltaic system installation and maintenance
3. Define basic electrical terms and calculate simple circuit values
4. Define and demonstrate solar energy fundamentals
5. Explain and calculate photovoltaic module fundamentals
6. Describe purpose and operation of photovoltaic system components
7. Calculate photovoltaic system sizing
8. Understand photovoltaic system electrical design
9. Understand photovoltaic system mechanical design
10. Describe photovoltaic system performance analysis and troubleshooting

STUDENT KNOWLEDGE AND EXPERIENCE ASSUMPTIONS:

No solar industry or electrical construction experience is assumed. Knowledge requirements include 9th grade reading level, basic math skills (addition, subtraction, multiplication, division, fractions, decimals, percentages, proportions, exponents, area calculations, use of formulas, basic algebra and word problems). In addition, students will be expected to use the Internet, a scientific calculator, voltmeter, hydrometer, multimeter, and a solar path finder as problem solving tools.

THE LB TRAINING CENTER - LIFE SKILLS TRAINING PROGRAM

MISSION

The *"Life Skills - Qualities of Successful People"* Program was developed to:

1. **Enhance** and **complement** the learning and personal improvement efforts, goals and objectives:

- Junior and Senior high school, and college students
- The reentry population
- Job seekers
- Adults seeking to improve their "quality of their life"

2. **Support** and **complement** the learning and training efforts, goals, objectives, and programs of:

- Public and private learning institutions
- Not-for-profits organizations
- Community development corporations
- Governmental entities focusing on workforce development

Future versions of the "Life Skills - Qualities and Attributes of Successful People" Program will enable the students to complete the "Discrete Programs" online.

PROGRAM COMPONENTS

1. "Pre" & "Post" Tests

The current version utilizes **"Pre" & "Post" Tests** for each of the **"Discrete Programs"**, to help "measure the effectiveness" of the **"Discrete Programs"**.

2. Program "Worksheets"

The current version also contains the following **Program "Worksheets"**:

- a. **Program "Worksheets"** for each of the **"Discrete Programs"**; and
- b. **"Personal Improvement Plan"**, for the students.

*The students can complete each of the aforementioned **Program "Worksheets"** either in the workshop, and/or at home. The **Program "Worksheets"** are designed to be "living documents", for which the students can continuously add to, and update, the information contained therein.*



PROGRAM DELIVERY

Professional esteemed educators, and/or successful business persons, are utilized to deliver the **"Life Skills Programs"**. They utilize topical perspectives, and situational discussions, supported by their personal experiences, to enhance and edify the **"Life Skills Program"** content.

PURPOSE

The "*Life Skills - Qualities of Successful People*" Program contains a series of "Discrete Programs", which can be *packaged* and *presented* in different combinations to meet the needs of the audience's workshop timeframe and specific demographics and objectives.

The "***Life Skills Program***":

A. ***Exposes*** the participants, via Program "Elements", to:

1. the "*Qualities and Attributes of Successful People*"; and
2. "*Concepts, Perspectives, Definitions and Situations*" that successful people anticipate, encounter, and deal with

B. ***Encourages*** the participants to discuss the meaning of the various Program "Elements";

C. ***Engages*** the participants to discuss the value to them, and application by them, of each Program "Element"; and

D. ***Complements*** the learning and training goals, objectives, and programs of the organizations and institutions that sponsor and/or host the "***Life Skills Program***".

THE LB TRAINING CENTER - LIFE SKILLS TRAINING PROGRAM

WORKSHOP PROGRAMS DIRECTORY

1 *DEFINITIONS OF SUCCESS*

2 *SKILLS & QUALITIES NEEDED IN THE WORKPLACE*

3 *LEADERSHIP*

4 *ATTRIBUTES OF A LEADER*

5 *CRITICAL CONCEPTS*

6 *DEALING WITH SETBACKS*

7 *DEFINITIONS OF MISTAKES*

8 *PRACTICAL SAYINGS & PERSPECTIVES*

9 *REASONS, REALITIES OR EXCUSES?*
(IF JAIL IS SO BAD, WHY DO SO MANY INMATES RETURN?)

10 *C. A. R. STORIES*
(CHALLENGES, ACTIONS, RESULTS)

LB TRAINING CENTER - FOUNDER, **LEON K. BAPTISTE**



Leon Baptiste is President and Founder of LB Electric, an MBE/SBE company which designs, installs and maintains electrical systems and solar PV arrays for companies, schools, hospitals and government agencies.

At an early age Leon Baptiste excelled in the classroom and on the gridiron while growing up in the city of Newark, NJ. And while he was always good in math and science - natural talents which would later lead him to his chosen

profession - it was his childhood mentors on and off the football field to whom he credits much of his personal success. "I was blessed to have the right people in my life," said Baptiste. "They encouraged me to think big, to pursue my dreams - and helped me take on tough challenges." The lessons, guidance and experience left a deep impression and lit a fire that fuels his being. "I learned that with success comes responsibility to give back."

Choosing paths, reaching higher and giving back would become themes that echo throughout his life.

After briefly studying at Cheney University, Leon followed his heart - transferring to the New Jersey Institute of Technology (NJIT) through the Educational Opportunity Program (EOP). The EOP provides educational opportunities for minority populations historically underrepresented in mathematics, sciences, engineering, and technology. It was there an NJIT EOP staff member introduced Leon to Nordling Dean that was looking for candidates to fill an internship program.

Leon joined the firm and in 1990 took a full time position as an Electrical Engineer - all the while pursuing his degree. After graduating from NJIT in 1991, Leon continued to work at Nordling Dean taking on a variety of roles that enabled him to learn the business from the ground up - including estimating, project engineering, project management, and running several departments - before eventually being promoted to VP of Business Development.

Leon's rapid rise and impact was noticed and in 1999 Nordling Dean offered him the opportunity to become a partner. To their dismay he declined, choosing instead to follow his entrepreneurial instincts and start LB Electric.

Leon opened his office at NJIT's Enterprise Development Center, a small business incubator in 2000.

Early on, many of the projects focused on solar power including installing a solar array on the NJIT Campus Center roof as well as a solar and hot water heater system on the roof of an NJIT residence hall. The panels help power the Campus Center and dormitory and reduce the university's electric bills and improve its environmental footprint.

Since then, LB's solar efforts have evolved to include designing and installing building integrated photovoltaic solar systems (BIPV). In BIPV systems, curtain walls replace a building's windows. The curtain walls look like windows but generate solar electric power. LB recently completed a project for Princeton University on one of its newer campus buildings incorporating this technology.

By establishing new product offerings and increasing the awareness of solar technology, LB Electric has seen substantial growth including electrical and lighting projects for both the Met Life and Giants Stadiums as well as considerable work in both NJ and NY for public and private sector clients including CB Richard Ellis, Siemens Building Technologies, Public Service Electric & Gas, and The Port Authority of NY & NJ among others.

Leon's involvement at NJIT helped him get his start and has helped him grow his business over the years. He currently serves as a member of NJIT's Electrical and Computer Engineering Department's Advisory Board and Interdisciplinary Design Studio which enables students to take an innovative concept all the way to commercial development.

Leon is also active in environmental conservation efforts and advises executives, politicians and entrepreneurs on the importance of using renewable energy and alternative fuels.

Leon's story is truly inspiring. It's one man's journey--from electrical contractor to multi-million dollar business enterprise.



"A Saint is Just a Sinner Who Fell Down, and Got Up (And Then Helped Someone Get Up)"

The purpose of this Biographical Sketch is to:

1. Let you know who I am;
2. Share with you the major self-inflicted "wounds" I incurred and overcame; and
3. Give you an understanding of how, and why I developed

my Workshop Program: *"Life Skills - Qualities of Successful People"*.

I was born on September 5th, 1946 at Columbus Hospital in Newark, as my mother's "colored" doctor did not have privileges to deliver at Mountainside Hospital in Montclair/Glen Ridge. I was raised in Montclair and graduated from Montclair High School in 1964. I was a good student, and a good athlete, but I was not given "rules" to follow-up. I did not have to come in the house when the street lights came on, so I learned early how to do what I wanted to do, doing what I shouldn't be doing (i.e. drinking wine, smoking cigarettes, et al), or not do what I didn't want to do, and not get in trouble for it (until later in life). After High School graduation, instead of going to college in the fall of 1964 (I only applied to Howard University but was not accepted – my parents were not of the "right stuff", I tried to join the Marines, but failed the physical for having too high a level of albumin in my blood (I found out that the Military used Insurance Company standards that only had white people's statistics in their medical tables. After working several months in an auto parts store as a driver, I subsequently applied to Hampton Institute (now Hampton University), was accepted, and enrolled in January 1965.

HE FELL DOWN

There are four major "downfalls" that I caused myself to experience: 1) At Hampton, I was introduced to smoking marijuana, and snorting heroin and cocaine. I stayed at Hampton 3½ years and **did not graduate**; 2) After returning home, selling life insurance, getting deeper into drugs, becoming a computer programmer at AT&T, my wife and I purchased a home in Plainfield.

15 years later, **we had our home foreclosed** because I "wasted" too much money on drugs (*I had transitioned to **smoking crack cocaine**, and **became addicted***); 3) Several years later, I checked myself into Princeton House, a substance abuse rehabilitation facility; and 4) After taking a buyout from AT&T, I started a computer business (High Performance Alternatives, Inc.); entered the construction industry as an Owner's Representative; and subsequently worked as VP-Business Development, then Director-Facility Management Services, for the (Plainfield) Neighborhood Health Center, a Federally Qualified Health Center. After a series of ups and downs, I started to issue myself expense reimbursement checks, which were really pay checks. Because I did not report them on my income taxes, I was charged with failure to report income tax, and the income on other federal documents. I went to court, admitted that I was guilty, and was sentenced to 4 - 8 months, **which included 4 months in a federal penitentiary** (the Brooklyn Metropolitan Detention Center), **4 months home confinement**, and **one year of probation**.

HE GOT UP

While I was working at AT&T, I enrolled part time at **Thomas Edison State College**, and received my college degree (BS Business Administration). On my 40th birthday, I successfully completed the substance abuse program at Princeton House. *I have been clean and sober ever since*. While working at NHSC, I became a member of the **United Way of Union County's Re-Entry Task Force**, with a focus on providing primary healthcare opportunities for the re-entry population and their families. In 2003, I joined St. John's Baptist Church (Scotch Plains, NJ), and have been serving on the Board of Trustees for 10 years. I am currently a member of the **Union County Re-Entry Task Force**.

PREPARATION FOR LIFE-SKILLS PROGRAM DEVELOPMENT

The following experiences and opportunities prepared me to develop and deliver my *"Life Skills - Qualities of Successful People"* Workshop Program:

1. While working at AT&T in Piscataway, NJ, I helped establish an AT&T chapter of Toastmasters International and was voted to be the "Teletalkers" chapter first President. I received my "Certified Toastmaster's" Designation, then served as the District Governor, the Division Governor, and then the 1985 - 1986 Administrative Lt. Governor of District 46 (NY & NJ). In this capacity, I also was dispatched by AT&T to make presentations to local community groups about the products and services offered.

2. While working at AT&T, HPA, and the NHSC, I participated annually in Career Days at local High Schools, giving the students an overview of my job, and what was needed to prepare for it.

3. During my time at the Brooklyn MDC, after constantly hearing the inmates complaining about the conditions (i.e. food, regimens, routines, degrading treatment, et al), I decided to ask the repeat offending "complainers" the following question: **"If jail is so bad, why did you return?"**

I documented over 30 reasons given to me, which formed the basis of one of my ten Workshop Program Components.

4. During the period before and after my time at the Brooklyn MDC, I enrolled in the NJ Dept. of Labor's Workforce Development Center in New Brunswick, where I became an instructor, teaching Job Search skills to unemployed people enrolled in the program.

WORKSHOP PROGRAMS PRESENTED

To date, I have presented my *"Life Skills - Qualities of Successful People"* Workshop Program at the following locations:

1. Last summer at the **"Wisdom Shapes Minds, LLC"** 4 week Summer Institute Program for High School students at Essex County College.

2. I am currently conducting the workshop program, monthly, at the **Urban League of Union County's** "Reconnection" Program for the reentry population at the Elizabeth One Stop Center.

3. I am currently conducting the workshop program, weekly, at the **NJ Reentry Corporation's** Elizabeth site.

It is my hope that my negative and positive experiences, and my Workshop Program, will be able to help someone who "fell down" to "get back up", and to also "help someone else get back up".