Module I
Light & Lighting - Course Overview

Coach’s Version
(Doctor’s notes are in Blue)

Chapter 1 – Getting Ready For the Future
Chapter 2 – How to Take This Course...
Chapter 3 – Why Study Light and Lighting?
Chapter 4 – Where Are You in the “Light Delivery System”? 
NAILD LS I: Lighting Specialist Certificate Program

The notes in black are what your candidate sees in their version of the Workbook. The Blue are coach notes.

WIIFM? (What’s In It For Me?) Please read this introduction carefully. If you understand the WIIFM, it will be easier for you to make sure your candidate gets the most out of the course. What will I get out of taking this course? If you haven’t asked this question, you should. You have a limited amount of time. Your time is very valuable. By the end of the course you will:

After they complete the 8 Modules, they will answer three questions in writing in the Coach’s Approval module – “what did I get from the Course, etc”. You will receive these responses via email and will be asked to grade the responses as “correct, incorrect, or incomplete” and return to sender. Only a grade of correct will enable the student to launch and take the final exam. If you have submitted “correct” that will mean you have verified they have successfully completed the Modules and the Workbook exercises and activities. Your sign-off qualifies them to take the Final Exam.

1. Possess a basic understanding of the lighting profession and the available career opportunities.
2. Understand and master the terminology necessary to explain to a customer the five light source types (filament, fluorescent, HID, induction and LED):
   a. How they operate and create light
   b. Their component parts, and
   c. How they fail
3. Understand and master the ability to answer these questions:
   a. “What is light?”
   b. “Where does color come from?”
   c. “How do we see color?”
   d. “Color Temperature and Color Rendering Index, how are they different?”
4. Understand and master the terminology to explain the components of the eye, how they work together to help us see and why this is important to our work.
5. Understand and master the ability to communicate the following to a customer:
   a. How an LED creates light – the LED assembly, array or luminaire
   b. What affects LED performance – Life, Light Output and Color Consistency
   c. Ways an LED creates white light
   d. “Delivered Lumens” versus “Catalog Lumens”
6. Understand and master the ability to communicate the following to a customer:
   a. How filament sources and LED differ: Life, Efficacy, Color Consistency, etc.
   b. When to use filament sources instead of LED
   c. Identifying a source by shape, size, base, etc.
   d. What to do about dimming, transformers, drivers, lamps and luminaires
7. Understand and master the ability to communicate the following to a customer:
   a. How fluorescent sources and LED differ: Life, Efficacy, Color Consistency, etc.
   b. Comparing fluorescent and LED lamps and luminaires – when to use what
   c. Temperature and how it affects fluorescent and LED
   d. What to do about dimming, ballasts, drivers, lamps and luminaires

8. Understand and master the ability to communicate the following to a customer:
   a. How HID and LED differ: Life, Efficacy, Color Consistency, etc.
   b. Comparing HID and LED lamps and luminaires – when to use what
   c. Orientation and temperature: how they affect HID and LED
   d. What to do about dimming, ballasts, drivers, lamps and luminaire

These 8 bullet points mirror the overall WIIFM for each of the 8 Modules.

How Will I Know What I Know?

NAILD LS I contains six ways to reinforce your efforts to learn the material and put it to work immediately in your work. The Course contains the content, the methods, and the tools. The desire to learn and master the material lies with you.

1. The Online Modules:
   These on-demand, self-paced Modules contain the information you need to build the foundation of your basic lighting knowledge.

2. The Workbook:
   Learning lighting requires more than just hearing about lighting and seeing it on slides. You need to practice what you learn. The workbook encourages you to use exercises – thinking, writing, observing, testing, and activities – building tools, taking field trips, experiencing light and lighting.

3. Coaching:
   Your Coach can help you stay on course, assist you when you need clarification and guide you in ways to integrate your studies with your daily work.

4. Module Quizzes:
   Think of the Module Quizzes as tools to confirm that you understand what you have studied and practiced.

5. Final Exam Qualification – Course Summary:
   You will need to complete 3 questions that your coach will review and respond to as to whether you are ready to take the final exam. **This is a critical part of the Course. Use the Review Sheet.**

6. Final Exam:
We use this tool to qualify you for the NAILD LS I Certificate. For those who complete the Workbook exercises and activities, develop your own learning method for the Modules and apply what they learn to their daily work, they will easily pass the Final Exam. It becomes a confirmation that they know the material.

**How Long Should It Take to Complete the Course?**

This varies by individual. However, each online Module takes about 60 - 75 minutes. Each Module Workbook contains activities and exercises. Some are quick, simple knowledge reinforcement activities or exercises completed within the Workbook. Others, like the Field Trips and construction activities, can take anywhere from an hour to several hours.

Your Coach will work with you to ensure you get the most out of the course. Take your time. Process the information, and practice what you have learned.

Budget at least 2 – 3 hours per Module and complete no more than two Modules per week. Take what you learn and apply it to your work right away. Fully leveraging the content of the Course should take no less than one month; however you have six months to complete.

**Before You Begin the Course:**

1. Make sure you have a pen or pencil to capture your ideas and insights. Keep in mind that no matter where you work in the company, your role is important and vital to the success of the enterprise. Use this program to grow professionally and as a means to add value to your company.

2. Print out the Workbook (noted as Additional Resource). The Workbook will serve you long after you have completed this course. Use it and the LS-I Course as a reference tool.

3. Each Chapter in each Module of the course contains an exercise or activity. Each of these may have a list of materials and props you will need to complete the exercise or activity. Review the workbook and identify what you will need.

4. Meet with your Coach on a regular basis to show your progress, and to help answer any questions you may have.

*When your candidate enrolls in the Course, review this section of Workbook Module I with them.*
Lighting Specialist Certificate Program:

Learning the content through exercises, experiments and experience-based observation, ensures that the participants will complete the program and be able to use and apply the information immediately to their work. We believe that this will assist participants to become a more informed and prepared lighting professional, while improving employee retention and encouraging professional development.

Workbook Exercises:

- Module 1 – Light and Lighting Overview
  - Chapter 2 – How To Take This Course
  
  For many of us, going to school was not always the best of times. We struggled with Math, Social Studies, the Sciences, History or English – maybe with all of them. A few of us were lucky enough to uncover a subject or area of study we could get passionate about. This was often the result of a teacher who was able to cut through the noise going on in our brain and help us give meaning to the things we were studying.

  NAILD has built the Lighting Specialist program around several sound education principles:

  - Learning needs to be:
    - FUN! – engaging and interactive
    - Meaningful – stuff that you can immediately apply to your work
    - Memorable – presented in a way that sticks – that you will remember

Module I is a relatively easy Module. The hard part of Module I is the tone you set with your candidate. This is a company investment in them. It’s an investment by them in you and the company they work for. We know how hard it is to find good people. NAILD LS I will help them get better in the profession of lighting, but it will also strengthen your ability to retain key people.

Chapter 2 – Exercise – Part 1

- Take a moment and think about something you learned where you had fun; something that was meaningful and memorable.
- Take a moment and write it down.
  - It might not have happened in school. It might have been in sports, a hobby, camping, fishing, hunting, painting, re-building an engine, etc.
  - Write briefly about that experience here:
This exercise focuses on helping your candidate remember what it takes to be good at something. You need:

- Knowledge and a way to acquire it.
- Practice – lots of it
- Coaching – however much and whatever is appropriate for their needs.

By taking them back to something they like, they get to re-live what it takes to get good at something. It takes:

- Time
- Commitment
- Desire to learn

People who have done this course well report that it changes their attitude to lighting and toward their work in general.

Chapter 2 – Exercise – Part 2

We each have a dominant learning style – a good training program respects the needs of learners, including those who require:

- Physical activity, getting out of their seat to learn, often referred to as “hands-on”
- Hearing and speaking about what they are learning, often referred to as talking their way through a problem
- Visual stimulus – the mind is more of an image processor than a word processor. This is the most common form of communicating ideas in schools, universities and yes, even businesses.
- Thinking – time to process and give meaning to what they are learning, often referred to as problem solving.

While we all use more than one of these styles, one seems to dominate the way we learn best. Think about the activity you wrote about in Part 1, what is mostly:

- “Hands-on”?
- “Speaking and hearing”?
- “Pictures and images”?
- “Problem solving”?

Perhaps it was a combination of two or more. Take a moment and write briefly about that experience here:

You are looking for how they like to learn. You can then use this to help them when they get stuck. Help them think about what they can do using how they like to learn to get over the hump. Obviously this plays out for more than just their work in lighting.
Now, as you go through the Course, make sure you include how you like to learn in your exercises and activities.

Now return to the On-line Module and complete Chapter 2. When you are finished, return to the Workbook.

Lighting Specialist Certificate Program

- Module 1 – Light and Lighting Overview
  - Chapter 3 – Why Study Light and Lighting?

When we were kids, the reward for learning to ride a bike without training wheels, meant riding around the block with your friends. We put up with losing our balance, falling down, etc. so that we could attain that reward. Along the way, we developed a competence in bike riding (“Look ma no hands….crash!”). Some skills we learned on our own, others like team sports, we learned with our friends. We worked at it until we got so good we didn’t have to think about it. Activities like riding a bike, throwing a ball, climbing a jungle gym became automatic, second nature.

Working in lighting requires a similar effort. In lighting you get monetary rewards and an opportunity to build your competency. It requires hard work on your own, working with others (collaboration) and seeking help from people with more knowledge and experience (coaching). You’ve done all this before when you learned to ride a bike. You come to this opportunity well-prepared.

Chapter 3 – Exercise:

Here is a short exercise:

Take a minute or two and write out why you are working in lighting. (It’s OK to be blunt – “I just needed a job.”, “It was available.”, or “I thought it might be interesting.”) Whatever the reason, it’s good.

This is a useful conversation to have once they have completed the exercise. You may find over time that their opinion on the subject changes.

Now, take another minute and write out what you expect to get from your work in lighting. (Once again, this might be as simple as: “a paycheck”) Whatever you expect for a reward, it’s good. Write you response below:
Again, you are simply getting them to think. There are no right answers and in the beginning they might not have a lot of excitement. On the other hand, they may surprise you. Take the time to find out and take an interest in what they think and how they feel about this. It will pay dividends.

Now, go to the on-line Module and complete Chapter 3. Come back to the Workbook when you have finished.

Lighting Specialist Certificate Program

- Module 1 – Getting Started
  - Chapter 4 – Where Are You in the “Light Delivery System”?

The lighting industry has many opportunities. Before you review Chapter 4 in the On-line Module, take a few moments and write down the answers to the following:

- What type of work do you do?
  As a Coach you probably have a management role in the company. Take a look at these questions. What value is there in your knowing the answers to these questions? What value is there in getting your candidate to think about and answer them?

- What area of lighting? (i.e. Manufacturing, Distribution, Lighting Design, etc.)

- Take a moment to think and then write down what doing your job well means to:
  - Your company:________________________________________
  - Your co-workers: ______________________________________ 
  - Your customers: _______________________________________ 
  - You: ________________________________________________

Wherever you are in the “Light Delivery System”, whatever you do, you matter, and your work matters. Your work represents one-third of your time each week. Making the most of the NAILD LS I certificate program will help you to become more competent at your job and more valuable as an employee or a business principal. Now, return to the on-line Module and complete Chapter 4. When you have finished, please return to the Workbook.

LS I has always been about more than teaching people about Light and Lighting. It is about teaching people how to learn, to grow their career and to build employee retention. Your company will get the most out of sending people through this course if you understand the principle and expect these results.
Thank you for taking the time and making the effort to work these short exercises in Module 1. The purpose of these exercises was to help you call to mind positive learning experiences and what you had to do to make them so. Learning is, after all, up to you. You should take away the following from this Module:

1. How to navigate the course
2. How to take the course
3. The opportunities available to develop a career in lighting
4. This work can make a difference in your life and in the lives of your customers
5. NAILD built its LS I certificate program to ensure your success and to help you strengthen your competency in lighting.

What questions or concerns do you have about what you have learned? Discuss with your Coach.

You can use one or both sides of this page. Remember this workbook will become part of your lighting library. Make sure to take the time to remind yourself what you have learned so far. Collaborate with your teammate(s) and/or seek out the assistance of your Coach.

When you have completed Module I, give yourself at least 24 hours before continuing. This will allow your mind the time it needs to process everything that you have experienced.

This concludes Module I

You are now prepared to take the Module I Quiz

Then continue on with Module II – Introduction to Sources

Three keys to success:

- Make sure that all of the Workbook Exercises and Activities are properly completed and documented in the workbook
- Get your candidate “verbal” early and often. Remember, they will talk with customers wherever they are in the company. They
need to be fluent in the concepts and language of light and lighting.

- Stay current. Use the Checklist from Module IX, “Final Exam Qualification. It lists all of the Workbook Exercises, Activities and Field Trips.
Module 1 – Light and Lighting Overview

Learning Objective:

1. Candidate understands the WIIFM, How to Gauge Their Progress and the Course Duration.


Workbook Exercises, Activities, and Field Trips:

1. Completed: WIIFM, How You Know You Are Progressing, and the Course Duration

2. Completed: Exercise #1: How do you make the learning FUN?

3. Completed: Exercise #2: How do you like to learn – hand’s on, visual, auditory, problem solving?

Comments:
A Note about the NAILD Lighting Specialist I Certificate and these Workbooks:

NAILD LS I focuses on helping you learn about light and lighting not by sitting in front of a computer and passing a quiz, but by actually doing and practicing lighting. It’s designed to help you take your first steps into the lighting profession.

This “blended learning” program includes an on-line segment, hands-on exercises, workbook activities and feedback quizzes. Each aspect of the program allows you to evaluate how well you are absorbing and retaining what you need to know to start a successful career in lighting. Whether you work in the warehouse, customer service, delivery, inside/outside sales, operations or administration, this program provides a solid beginning for your lighting education.

The Workbook resembles no other in the industry. Step-by-step you will build your own “Reference Library” and even some stand alone tools that you can use and re-use long after you have completed your NAILD LS I certificate requirements. This program recognizes that each of us has a dominant learning style. For some, they prefer “hearing it” (auditory); others “seeing it” (visual); still others “thinking about it” (problem solving); and finally there are those who prefer to “do it” (hands-on). All of us use more than one to process and retain the information we need to do our work. This program uses all four methods. The Workbook serves as the backbone to hold all of your work together.

When you complete the program you will receive a(n):

- **NAILD LS I** Certificate approved by the NAILD Board of Directors, signed by the current President and the current Education Committee Chair
- **NAILD LS I** pin that you can wear on your lapel
- Recognition in *Today’s Lighting Distributor*, the NAILD Magazine
- Recognition on the NAILD Website
- Authorization to use the appellation **NAILD LS I** on your business card