# Introduction to Wire Harness Design I Course

# SYLLABUS

## INSTRUCTOR INFORMATION:

Instructor: Didem Üstün

Email: didemcebecioglu@gmail.com

Best time to call: Usually available between 3am – 11am Eastern Time USA.
Leave message anytime.

## PROGRAM DESCRIPTION

In the highly competitive electronics industry, the knowledge and skills of staff directly responsible for Wire Harness Design can have a direct impact on the success or failure of the product design and time to market.

This comprehensive wire harness course equips participants with the essential knowledge and skills to design, assemble, and troubleshoot wire harnesses effectively. Starting with foundational concepts of harness types, components, and industry standards like IPC/WHMA-A-620, the course progresses to hands-on techniques for wire preparation, crimping, soldering, and harness assembly. Participants will also learn to read and create wiring diagrams, employ safety measures, and troubleshoot common harness issues. By the end of this course, individuals will possess the confidence to navigate the complexities of wire harness design and assembly, contributing to the efficient and reliable operation of electrical systems across various industries.

Taught by an IPC-certified industry expert with 10+ years of experience in the field, the two-week program utilizes interactive webinars, on-demand recorded class sessions, job-specific exercises, and a class activity to facilitate mastery of the key concepts required by wire harness designers.

This course is designed for designers and operators who are new to or will soon start working on wire harness design. Participants are expected to be familiar with the IPC/WHMA-A-620 Standard.

## LEARNING AND PERFORMANCE OBJECTIVES

This program is designed to provide wire harness designers with a balanced foundation of theoretical knowledge and practical skills in cable design. Upon completion, participants will be able to:

- Understand wires, cables, and harnesses in the electronics industry.
- Understand the trade-offs in materials used in these applications.
- Understand and mitigate issues in wire harness in the electronics industry.
- Describe steps of wire harness design.
- Identify types of connectors used in wire harness technology.
- Understand wire terminations and cable shielding in the electronics industry.
- Understand how to read and create wiring diagrams according to cable types.

## COURSE STRUCTURE

- Instructor and participants meet online twice per week from the comfort of their own home.
- Participants can view recorded online sessions to review course content and class discussions.
- Participants apply key concepts to create a real-world design from concept to completion.
- Course materials are accessible 24/7 on the new IPC Edge Learning Management System.
- The course can be accessed on virtually any device with an Internet connection and major web browser, including Chrome, Firefox, Safari, Edge, and Internet Explorer.

## IPC STANDARDS COVERED (PROVIDED WITH COURSE)

- IPC/WHMA-A-620 Standard: Requirements and Acceptance for Cable and Wire Harness Assemblies

## COURSE SCHEDULE

### WEEK 1 – INTRODUCTION TO WIRE HARNESS INDUSTRY

Program overview outlining class schedule and options for accessing class materials and assignments. Class sessions will focus on wire harness design in the electronics industry.

Topics include:

- Introduction & Background
- Understanding Wire Harnesses
- Essential Tools and Equipment
- Crimp & solder wire terminations, splice joints, marking/labeling.

**ASSIGNMENT:**

- Submit issues for review at the next session for discussion.
- Knowledge Check

## WEEK 2 – WIRING DIAGRAMS & TROUBLESHOOTING IN WIRE INDUSTRY

Class sessions will focus on wiring design diagrams and usage to further improve designing for cable designs. Will discuss considerations for designing and assembling a wiring harness, as well as ways to prevent problems."

Topics include:

- Harness/Cable electrical shielding
- Reading and Creating Wiring Diagrams
- Wire Harness Design Steps
- Troubleshooting Common Issues

**ASSIGNMENT:**

- Final project/assignment