



## FUNDAMENTALS OF LIGHTING WINTER 2019

### COURSE OVERVIEW:

This ten-week course provides participants with an introduction to the fundamentals of illumination. It gives a comprehensive overview on basic lighting principles, lamp and luminaire types, lighting calculations, and controls, as well as functional and aesthetic applications. This course is ideal for architects, engineers, designers, contractors, sales reps, customer service reps, manufacturers, distributors, and students. Full module descriptions on reverse.

### WHEN

January 8th to March 12, 2019

6:30pm - 9:00pm

(Snow days March 19 and 26 if needed)

### WHERE

Milwaukee School Of Engineering

Grohmann Tower Room 403AB

233 E. Juneau Avenue

Milwaukee, WI 53202

Free on-street parking available after 6pm

Questions? Contact [tjackson@optec.com](mailto:tjackson@optec.com)

[www.iesmilwaukee.org/fundamentals-of-lighting.com](http://www.iesmilwaukee.org/fundamentals-of-lighting.com)

### ONLINE REGISTRATION

Pre-registration is required and registration fees must be paid in advance. To register, please complete the electronic form at:

[www.iesmilwaukee.org/fundamentals-of-lighting](http://www.iesmilwaukee.org/fundamentals-of-lighting)

Online payments via Paypal and pre-paid checks are accepted.

### Course fees

\$400 Standard Registration  
\$100 College Student

### SIGN UP TODAY!

Registrations received after December 27th may not receive materials in time for the first class.



## 2019 FOL Course Syllabus:

### **Module 1, January 8 – History, Professional Practice, Defining Light, Vision, Color, and Light & Health**

Teresa Jackson, LC, MIES (Optec LED Lighting)

In this introductory presentation we will cover the history of light and lighting, define light through both physics and metrics, illustrate the four components of vision, and discuss various aspects of color theory from color mixing to the color rendering index.

### **Module 3, January 15 – Daylighting**

Holly Blomquist, LC, MIES, LEED Green Associate (Ring & DuChateau)

This session will introduce daylight as a light source in buildings, including design considerations, daylight delivery systems, control methods, performance and metrics.

### **Module 2, January 22 – Electric Light Sources and Auxiliary Devices**

Eric Haugaard (Cree)

Light sources including filament, gas discharge and solid state (LED) will be presented. Lamp applications, equipment necessary to power these sources, and other considerations will also be reviewed.

### **Module 4, January 29- Luminaires**

Kyle Kichura, LC, MIES (Franklin Energy Services)

Luminaire forms and optics are introduced along with classifications by application, distribution, and mounting method. We will discuss additional luminaire attributes relating to performance and maintenance.

### **Module 6, February 5 – Photometry, Metrics, & Computer Calculations**

Chris Glandt, LC, MIES (Visa Lighting)

The elements of photometric testing and reporting will be presented. The role of lighting design calculation as part of the design process is reviewed, and calculation methods, including the Lumen Method for average illuminance, and the point method for illuminance at a point, will be presented and applied. Computer calculations and rendering techniques are also discussed.

### **Module 7, February 12 – Codes and Standards, Economics**

Justin Hendrickson, LC, MIES (Elan Lighting)

In this session, safety and Energy codes and standards are introduced. Trends in energy management and strategies to achieve energy saving goals are discussed, along with the role of economic analysis as part of an overall lighting design. Methods for economic analysis including Life Cycle Cost Benefit Analysis are modeled and applied.

### **Module 5, February 19 – Controls**

Randy Janicek, MIES (Engineered Representation, Inc.)

Lighting control types, strategies, methods and protocols are introduced in this session. In addition, integrating lighting controls with other building systems and a discussion of controls applications is included.

### **Module 8, February 26– Lighting Design Process and Techniques, Sustainability & Commissioning**

Shanna Olson, LC, MIES, Affiliate IIDA (KJWW Engineering)

The lighting design process, from programming through construction is reviewed in depth. We will discuss factors for design decisions and application considerations as part of the overall design process. Industry ratings for sustainability including LEED, and building commissioning practices are also covered.

### **Module 9, March 5- Lighting for Interiors**

Barbara Lee, LC (IMEG Corp.)

The art and craft of interior lighting, applied in various building and space types, is a make-or-break factor in an overall interior design. Examples of designs are shown and the role of lighting within the well-designed interior is discussed. We will also discuss research relating to human perception and reaction to interior environments, and the important role of lighting within those findings.

### **Module 10, March 12 – Lighting for Exteriors**

Yazi Fletcher, LC, MIES (Red Sky Lighting)

Great lighting effects are not just for the indoors. Exterior lighting methods and applications from public spaces to roadways to sports lighting is discussed. The effect of lighting on the exterior environment, and exterior lighting controls techniques are also included.