



**Important:** This is *not* a lighting fundamentals or roadway lighting design course. We assume that the attendee has a basic understanding of roadway lighting design principles as well as lighting terminology (lumen, candela, intensity, illuminance, luminance, footcandle, lux, etc.) and a basic understanding of luminaire photometry.

**AGI32 Prerequisite skills:** Please see the [Roadway Class Prerequisites](#) for the AGI32 skills required for successful participation in this class.

## AGI32 Intermediate Roadway Class Outline

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- I. Introductions
- II. Useful Tips for AGI32 Users
- III. Roadway Calculations in AGI32 – what you need to know
- IV. RP-8 Overview and other stuff
  - a. Roadway Classifications
  - b. Pedestrian Conflict Area Classifications
  - c. Pavement Classifications
  - d. Roadway Lighting Design Criteria
  - e. Roadway luminaire types (Types I-V; S-M-L ranges)
  - f. Cutoff classifications
  - g. Luminaire Classification System (LCS) & BUG Ratings
- V. Roadway Optimizer
  - a. Uses, limitations, restrictions
  - b. Roadway standards and pavement types
  - c. Layouts
  - d. Optimization criteria
  - e. Evaluating results
  - f. Advanced settings
  - g. Comparing layouts
  - h. Exporting and/or printing results
- VI. Expanded Roadway Application
  - a. IES criteria (RP-8-00)
  - b. Translate Origin
  - c. Compare potential luminaires with Roadway Optimizer
  - d. Luminaire layout & templates
  - e. Roadway luminance and other calculations

- f. View Manager
  - g. Project Manager
  - h. AutoCalc
  - i. Creating a “custom standard” to override RP-8 settings
- VII. Intersection Lighting
- a. IES criteria (RP-8)
  - b. Single- and Multi-head luminaire Arrangements with post-top luminaires
  - c. Polygon-shaped grid, invoking arc command for corners
  - d. Isolines
  - e. Highlight Values
- VIII. Pedestrian Lighting Application
- a. IES criteria (RP-8)
  - b. Horizontal illuminance on sidewalk
  - c. Vertical illuminance, elevated above sidewalk, two directions
  - d. Adding Objects with color and texture
  - e. Designating all surfaces as either Roadway Contributor or Roadway Pavement
  - f. Full Radiosity calculations
  - g. Render Mode
- IX. High-Mast Application: a freeway interchange
- a. Custom luminaire arrangements
  - b. Static vs dynamic poles
  - c. Iso-illuminance templates
  - d. Illuminance grids per RP-8
  - e. Calc points in curved lines, changing elevation (on-ramp)
  - f. Highlight Values
  - g. Statistical Area
- X. Tunnel Lighting and RP-22-11 (considering reflective surfaces)
- a. IES criteria (RP-22)
  - b. Full Radiosity calculations for tunnel applications
  - c. Adding Objects to the tunnel
  - d. Designating all surfaces as either Roadway Pavement or Roadway Contributor
  - e. Tunnel calculation grids
  - f. Switching and dimming luminaires for nighttime
  - g. Visualizations in Render Mode
  - h. Using Scene Manager for daytime and nighttime calculations analysis
- XI. Roundabout Lighting and DG-19
- a. IES criteria (DG-19)
  - b. Locating luminaires in a circular array
  - c. Horizontal illuminance in the roundabout drive lanes
  - d. Vertical illuminance on pedestrians in the crosswalks
  - e. Calc points on a line, elevated, and “looking at” approaching drivers