

## ID 3530 - LIGHTING LAYOUT + DESIGN

Credits: 3

This junior-level course introduces students to the theoretical, technical, and practical application of lighting strategies within the built environment. Students learn to specify light sources and systems based on functionality, aesthetics, and the physical and psychological relationship between humans and their environment. Emphasis is on the understanding and application of lighting criteria through the use of source calculations, lighting and reflected ceiling plans, energy efficiency strategies, and building system integration. Upon successful completion of this course, students will be able to determine and design appropriate lighting solutions within the context of design standards for human well-being for both residential and commercial spaces.

Prerequisites: ID 2530 - ID 2710 - Introduction to Computer Aided Design (CAD), IDSD 2860 - Sustainable Residential Design, and ID 2530 - Building Codes + Regulations

Course Learning Outcomes	Exceeding	Meeting	Developing	Not meeting	Program Outcomes	Institutional Outcomes	CIDA Standards
Apply space planning techniques throughout the design process.	Analyzes space planning techniques within the design process.	Applies space planning techniques throughout the design process.	Identifies space planning techniques within the design process.	Does not apply space planning techniques throughout the design process.	ID5 DESIGN PROCESS	Design Competence, Critical Thinking	CIDA Standard 8. Design Process
Apply knowledge and skills learned to solve progressively complex design problems.	Solves progressively complex design problems.	Synthesizes progressively complex design problems.	Analyzes progressively complex design problems.	Does not solve progressively complex design problems.	ID5 DESIGN PROCESS	Design Competence, Critical Thinking	CIDA Standard 8. Design Process
Apply knowledge and skills learned to identify and define issues relevant to the design problem.	Analyzes issues relevant to the design problem.	Identifies and defines issues relevant to the design problem.	Recalls issues relevant to the design problem.	Does not identify or define issues relevant to the design problem.	ID5 DESIGN PROCESS	Design Competence, Critical Thinking	CIDA Standard 8. Design Process
Apply knowledge and skills learned to execute the design process: pre-design, schematic design, and design development.	Executes the design process: pre-design, schematic design, and design development.	Synthesizes the design process: pre-design, schematic design, and design development.	Analyzes the design process: pre-design, schematic design, and design development.	Does not execute the design process: pre-design, schematic design, and design development.	ID5 DESIGN PROCESS	Design Competence, Critical Thinking	CIDA Standard 8. Design Process
Apply knowledge and skills learned to design original and creative solutions.	Designs original and creative solutions with professional expertise and polish.	Designs original and creative solutions.	Designs with evidence of some originality and some creative solutions.	Does not design original and creative solutions.	ID5 DESIGN PROCESS	Design Competence, Critical Thinking	CIDA Standard 8. Design Process
Apply knowledge and skills learned to execute the design process: pre-design, quantitative and qualitative programming, schematic design, and design development.	Executes comprehensive and critical design processes: pre-design, quantitative and qualitative programming, schematic design, and design development.	Applies knowledge and skills learned to execute the design process: pre-design, quantitative and qualitative programming, schematic design, and design development.	Applies some knowledge and skills learned to execute some components of the design process: pre-design, quantitative and qualitative programming, schematic design, and design development.	Does not apply knowledge and skills learned to execute the design process: pre-design, quantitative and qualitative programming, schematic design, and design development.	ID5 DESIGN PROCESS	Design Competence, Critical Thinking	CIDA Standard 8. Design Process
Recognize innovation and risk taking.	Analyzes innovation and risk taking.	Applies innovation and risk taking.	Recognizes innovation and risk taking.	Does not apply innovation and risk taking.	ID5 DESIGN PROCESS	Design Competence, Critical Thinking	CIDA Standard 8. Design Process
Effectively express ideas developed in the design process through visual media: ideation drawings and sketches.	Effectively expresses ideas developed in the design process through visual media (ideation drawings and sketches) and actively engages audience with the material and content.	Effectively expresses ideas developed in the design process through visual media: ideation drawings and sketches.	Expresses ideas developed in the design process through visual media but without clarity or detail.	Does not effectively express ideas developed in the design process through visual media: ideation drawings and sketches.	ID6 COMMUNICATION	Communication Competence	CIDA Standard 9. Communication
Understand the principles of natural and artificial lighting design.	Applies the principles of natural and artificial lighting design.	Understand the principles of natural and artificial lighting design.	Identifies the principles of natural and artificial lighting design.	Does not understand the principles of natural and artificial lighting design.	ID9 LIGHT + COLOR	Design Competence, Critical Thinking	CIDA Standard 12. Light and Color
Understand strategies for using and modulating natural light.	Applies strategies for using and modulating natural light.	Understand strategies for using and modulating natural light.	Identifies strategies for using and modulating natural light.	Does not understand strategies for using and modulating natural light.	ID9 LIGHT + COLOR	Design Competence, Critical Thinking	CIDA Standard 12. Light and Color
Competently select and apply luminaires and light sources.	Competently selects and applies luminaires and light sources with criticality and creativity.	Competently selects and applies luminaires and light sources.	Selects and applies luminaires and light sources with inconsistency.	Does not competently select and apply luminaires and light sources.	ID9 LIGHT + COLOR	Design Competence, Critical Thinking	CIDA Standard 12. Light and Color
Recognize a range of sources for information and research about color.	Analyzes a range of sources for information and research about color.	Recognizes a range of sources for information and research about color.	Identifies some sources for information and research about color.	Does not recognize a range of sources for information and research about color.	ID9 LIGHT + COLOR	Design Competence, Critical Thinking	CIDA Standard 12. Light and Color
Understand color principles, theories, and systems.	Applies color principles, theories, and systems.	Understands color principles, theories, and systems.	Recognizes color principles, theories, and systems.	Does not understand color principles, theories, and systems.	ID9 LIGHT + COLOR	Design Competence, Critical Thinking	CIDA Standard 12. Light and Color
Understand color in relation to materials, textures, light, and form.	Applies color in relation to materials, textures, light, and form.	Understands color in relation to materials, textures, light, and form.	Recognizes color in relation to materials, textures, light, and form.	Does not understand color in relation to materials, textures, light, and form.	ID9 LIGHT + COLOR	Design Competence, Critical Thinking	CIDA Standard 12. Light and Color
Understand the principles of thermal design.	Apply the principles of thermal design.	Understand the principles of thermal design.	Recognize the principles of thermal design.	Does not understand the principles of thermal design.	ID11 ENVIRONMENTAL SYSTEMS + HUMAN WELLBEING	Design Competence, Critical Thinking	CIDA Standard 14. Environmental Systems and Comfort
Understand how active and passive thermal systems and components impact interior design solutions.	Evaluate how active and passive thermal systems and components impact interior design solutions.	Understand how active and passive thermal systems and components impact interior design solutions.	Recognize how active and passive thermal systems and components impact interior design solutions.	Does not understand active and passive thermal systems and components impact interior design solutions.	ID11 ENVIRONMENTAL SYSTEMS + HUMAN WELLBEING	Design Competence, Critical Thinking	CIDA Standard 14. Environmental Systems and Comfort
Understand the principles of indoor air quality.	Apply the principles of indoor air quality.	Understand the principles of indoor air quality.	Recognize the principles of indoor air quality.	Does not understand the principles of indoor air quality.	ID11 ENVIRONMENTAL SYSTEMS + HUMAN WELLBEING	Design Competence, Critical Thinking	CIDA Standard 14. Environmental Systems and Comfort

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Understand how the selection and application of products and systems impact indoor air quality.	Apply a critical selection and creative application of products and systems impact indoor air quality.	Understand how the selection and application of products and systems impact indoor air quality.	Recognize how the selection and application of products and systems impact indoor air quality.	Does not understand how the selection and application of products and systems impact indoor air quality.	ID11 ENVIRONMENTAL SYSTEMS + HUMAN WELLBEING	Design Competence, Critical Thinking	CIDA Standard 14. Environmental Systems and Comfort
Understand how design solutions affect and are impacted by monitoring systems pertaining to energy, security, and building controls systems.	Evaluates how design solutions affect and are impacted by monitoring systems pertaining to energy, security, and building controls systems.	Understands how design solutions affect and are impacted by monitoring systems pertaining to energy, security, and building controls systems.	Recognizes that design solutions affect and are impacted by monitoring systems pertaining to energy, security, and building controls systems.	Does not understand how design solutions affect and are impacted by monitoring systems pertaining to energy, security, and building controls systems.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction