ID 3510 - BUILDING STRUCTURES + SYSTEMS

Credits: 3

This junior-level course examines the integration of building structural methods and materials with building and environmental systems as they relate to interior design practice. Emphasis is on understanding and illustrating building construction in compliance with building and life safety codes. Upon successful completion of this course, students will understand typical construction materials, methods, and systems, as well as experimental and sustainable alternatives; utilize primary reference sources for specific building systems and materials; and produce a set of residential construction documents within the context of graphic standards in the industry.

Prerequisites: ID 2530 - Building Codes + Regulations and ID 2710 - Introduction to Computer Aided Design (CAD) / Notes: (Formerly ID 3750)

Course Learning Outcomes	Exceeding	Meeting	Developing	Not meeting	Program Outcomes	Institutional Outcomes	CIDA Standards
Understand that human and environmental conditions vary according to geographic location and impact design and construction decisions.	Design work and construction decisions demonstrates an exemplary, thorough, and anticipatory understanding of human circumstances, enviornmental conditions, and geographic considerations.	Explains human circumstances and environmental conditions and how these vary according to geographic location. Explains how these impact design and construction decisions. Design work demonstrates this understanding.	Defines human circumstances and environmental conditions; however, does not examine how these vary according to geographic location nor their impact on design and construction decisions.	Does not understand that human circumstances and environmental conditions vary according to geographic location and impact design and construction decisions.	ID1 GLOBAL CONTEXT	Cultural Competence, Design Competence, Critical Thinking	CIDA Standard 4. Global Context
Understand how systems thinking informs the practice of interior design.	Applies system thinking to the practice of interior design.	Understands how system thinking informs the practice of interior design.	Recognizes somoe elements of the relationship between system thinking and the practice of interior design.	Does not understand how systems thinking informs the practice of interior design.	ID1 GLOBAL CONTEXT	Cultural Competence, Critical Thinking	CIDA Standard 4. Global Context
Recognize the integration of multi-disciplinary collaboration in design practice.	Applies integrated design practices.	Recognize the integration of multi-disciplinary collaboration in design practice.	Recognizes separate design practices but does not demonstrate an awareness of how these combine or relate to an integrated and holistic design practice.	Does not recognize the integration of multi-disciplinary collaboration in design practice.	ID2 COLLABORATION	Design Competence	CIDA Standard 5. Collaboration
Understand the terminology and language necessary to communicate effectively with members of allied disciplines.	Applies the terminology and language necessary to communicate effectively with members of allied disciplines.	Defines the terminology and language necessary to communicate effectively with members of allied disciplines.	Recalls the terminology and language necessary to communicate effectively with members of allied disciplines.	Does not demonstrates an awareness of the terminology and language necessary to communicate effectively with members of allied disciplines.	ID2 COLLABORATION	Communication Competence, Design Competence	CIDA Standard 5. Collaboration
Understand technologically-based collaboration methods specific to the problem solving process for built environment disciplines.	Applies technologically-based collaboration methods specific to the problem solving process for built environment disciplines.	Defines technologically-based collaboration methods specific to the problem solving process for built environment disciplines.	Recalls technologically-based collaboration methods specific to the problem solving process for built environment disciplines.	Does not understand technologically-based collaboration methods specific to the problem solving process for built environment disciplines.	ID2 COLLABORATION	Communication Competence, Design Competence	CIDA Standard 5. Collaboration
Understand the dynamics of team collaboration and the distribution and structure of team responsibilities.	Actively participates in the varying dynamics of team collaboration and contributes to the distribution and structure of team responsibilities.	Understands the dynamics of team collaboration and the distribution and structure of team responsibilities.	Contributes to some team responsibilities; however, does not demonstrate an understanding of teach dynamics, collaboration, and the structure of teams.	Does not understand the dynamics of team collaboration and the distribution and structure of team responsibilities.	ID2 COLLABORATION	Communication Competence	CIDA Standard 5. Collaboration
Demonstrate the ability to effectively collaborate with multiple disciplines in developing design solutions.	Applies effective collaborations with multiple disciplines in developing critical design solutions.	Demonstrates the ability to effectively collaborate with multiple disciplines in developing design solutions.	Collaborates with some discplines in developing design solutions.	Does not demonstrate the ability to effectively collaborate with multiple disciplines in developing design solutions.	ID2 COLLABORATION	Communication Competence, Design Competence	CIDA Standard 5. Collaboration
Recognize evolving communication technologies.	Anticipates new and evolving communication technologies.	Recognizes evolving communication technologies.	Recognizes some communication technologies.	Does not recognize evolving communication technologies.	ID6 COMMUNICATION	Communication Competence	CIDA Standard 9. Communication
Understand that design decisions relating to acoustics, thermal comfort, and indoor air quality impact human wellbeing and the environment.	Apply design decisions that relate to acoustics, thermal comfort, and indoor air quality to impact human wellbeing and the environment.	Understand that design decisions relating to acoustics, thermal comfort, and indoor air quality impact human wellbeing and the environment.	Recognize that design decisions relating to acoustics, thermal comfort, and indoor air quality impact human wellbeing and the environment.	Does not understand that design decisions relating to acoustics, thermal comfort, and indoor air quality impact human wellbeing and the environment.	ID11 ENVIRONMENTAL SYSTEMS + HUMAN WELLBEING	Design Competence, Critical Thinking	CIDA Standard 14. Environmental Systems and Comfort
Understand the principles of acoustical design.	Apply the principles of acoustical design.	Understand the principles of acoustical design.	Recognize the principles of acoustical design.	Does not understand the principles of acoustical design.	ID11 ENVIRONMENTAL SYSTEMS + HUMAN WELLBEING	Design Competence, Critical Thinking	CIDA Standard 14. Environmental Systems and Comfort
Understand appropriate strategies for acoustical control.	Apply appropriate strategies for acoustical control.	Understand appropriate strategies for acoustical control.	Recognize appropriate strategies for acoustical control.	Does not understand appropriate strategies for acoustical control.	ID11 ENVIRONMENTAL SYSTEMS + HUMAN WELLBEING	Design Competence, Critical Thinking	CIDA Standard 14. Environmental Systems and Comfort
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
Recognize the environmental impact of construction.	Understands the environmental impact of construction.	Recognizes the environmental impact of construction.	Recalls some elements of the environmental impact of construction.	Does not recognize the environmental impact of construction.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
Understand how design solutions affect and are impacted by base-building structural systems and construction methods.	Evaluates how design solutions affect and are impacted by base-building structural systems and construction methods.	Understands how design solutions affect and are impacted by base-building structural systems and construction methods.	Recognizes that design solutions affect and are impacted by base-building structural systems and construction methods.	Does not understand how design solutions affect and are impacted by base-building structural systems and construction methods.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
Understand how design solutions affect and are impacted by interior systems, construction, and installation methods.	Evaluates how design solutions affect and are impacted by interior systems, construction, and installation methods.	Understands how design solutions affect and are impacted by interior systems, construction, and installation methods.	Recognizes that design solutions affect and are impacted by interior systems, construction, and installation methods.	Does not understand how design solutions affect and are impacted by interior systems, construction, and installation methods.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
Understand how design solutions affect and are impacted by detailing and specification of interior construction materials, products, and finishes.	Evaluates how design solutions affect and are impacted by detailing and specification of interior construction materials, products, and finishes.	Understands how design solutions affect and are impacted by detailing and specification of interior construction materials, products, and finishes.	Recognizes that design solutions affect and are impacted by detailing and specification of interior construction materials, products, and finishes.	Does not understand how design solutions affect and are impacted by detailing and specification of interior construction materials, products, and finishes.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
Understand how design solutions affect and are impacted by the integration of building systems including electrical (such as power, data, lighting, telecommunications, audio visual) and mechanical (such as HVAC, plumbing, and sprinklers).	Evaluates how design solutions affect and are impacted by the integration of building systems including electrical (such as power, data, lighting, telecommunications, audio visual) and mechanical (such as HVAC, plumbing, and sprinklers).	Understands how design solutions affect and are impacted by the integration of building systems including electrical (such as power, data, lighting, telecommunications, audio visual) and mechanical (such as HVAC, plumbing, and sprinklers).	Recognizes that design solutions affect and are impacted by the integration of building systems including electrical (such as power, data, lighting, telecommunications, audio visual) and mechanical (such as HVAC, plumbing, and sprinklers).	Does not understand how design solutions affect and are impacted by the integration of building systems including electrical (such as power, data, lighting, telecommunications, audio visual) and mechanical (such as HVAC, plumbing, and sprinklers).	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
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
Understand how design solutions affect and are impacted by vertical and horizontal systems of transport and circulation such as stairs, elevators, or escalators.	Evaluates how design solutions affect and are impacted by vertical and horizontal systems of transport and circulation such as stairs, elevators, or escalators.	Understands how design solutions affect and are impacted by vertical and horizontal systems of transport and circulation such as stairs, elevators, or escalators.	Recognizes that design solutions affect and are impacted by vertical and horizontal systems of transport and circulation such as stairs, elevators, or escalators.	Does not understand how design solutions affect and are impacted by vertical and horizontal systems of transport and circulation such as stairs, elevators, or escalators.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
Understand the formats, components, and accepted standards for an integrated and comprehensive set of interior construction documents.	Evaluates the formats, components, and accepted standards for an integrated and comprehensive set of interior construction documents.	Understands the formats, components, and accepted standards for an integrated and comprehensive set of interior construction documents.	Recognizes the formats, components, and accepted standards for an integrated and comprehensive set of interior construction documents.	Does not understand the formats, components, and accepted standards for an integrated and comprehensive set of interior construction documents.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
Read and interpret base-building construction documents.	Reads and critically interprets base-building construction documents with nuance.	Reads and interprets base-building construction documents.	Reads but cannot adequately interpret base-building construction documents.	Does not read or interpret base-building construction documents.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction
Contribute to the production of interior contract documents including drawings, detailing, schedules, and specifications appropriate to project size and scope.	Generates interior contract documents including drawings, detailing, schedules, and specifications appropriate to project size and scope.	Contributes to the production of interior contract documents including drawings, detailing, schedules, and specifications appropriate to project size and scope.	Contributes to the production of some interior contract documents but lacks the ability to contribute to all forms of drawings, detailing, schedules, and specifications appropriate to project size and scope.	Does not contribute to the production of interior contract documents including drawings, detailing, schedules, and specifications appropriate to project size and scope.	ID12 CONSTRUCTION	Design Competence	CIDA Standard 15. Construction