

ARCH229 : Introduction to 3D Visualization for Architecture and Interior Design

General Information

Author:	<ul style="list-style-type: none">Christopher Herwerth
Course Code (CB01) :	ARCH229
Course Title (CB02) :	Introduction to 3D Visualization for Architecture and Interior Design
Department:	ARCH
Proposal Start:	Summer 2025
TOP Code (CB03) :	(0201.00) Architecture and Architectural Technology
CIP Code:	(04.0901) Architectural Technology/Technician.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	Yes
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000525744
Curriculum Committee Approval Date:	05/22/2024
Board of Trustees Approval Date:	07/16/2024
Last Cyclical Review Date:	05/22/2024
Course Description and Course Note:	ARCH 229 teaches the fundamentals of 3ds Max software for Architecture and Interior Design, covering walkthroughs, rendering, lighting, and presentations for both residential and commercial projects. Students gain proficiency in 3ds Max, as well as explore real-time rendering with TwinMotion, discover the revolutionary potential of AI Rendering, and the immersive technologies of Augmented Reality (AR) and Virtual Reality (VR). Hands-on projects will enable students to engage with these advanced fields, enhancing their skills and broadening their creative perspectives.
Justification:	Content Change ARCH 250 and ENGR 109 changed from prerequisite to advisory ARCH 250 and ENGR 109 removed prerequisite completely
Academic Career:	<ul style="list-style-type: none">Credit
Mode of Delivery:	<ul style="list-style-type: none">In-PersonRemoteOnline
Author:	No value
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none">Architecture
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

- Grade with Pass / No-Pass Option

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

Not Applicable

Transferability

Transferable to CSU only

Transferability Status

Approved

Units and Hours

Summary

Minimum Credit Units (CB07)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	108
Total Course Out-of-Class Hours	54
Total Student Learning Hours	162

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience Education

Status (CB10)

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	1.5	3

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0

Laboratory Hours	4.5	0
Studio Hours	0	0

Course In-Class (Contact) Hours	
Lecture	27
Laboratory	81
Studio	0
Total	108

Course Out-of-Class Hours	
Lecture	54
Laboratory	0
Studio	0
Total	54

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Prerequisites, Corequisites, Recommended Corequisites, and Recommended Preparation

Advisory

ARCH141 - Interior Design

Objectives

- Complete a series of basic floor plan designs.
- Complete projects dealing with the arrangement of furniture, floor and window treatments, lighting and accessory planning.

Entry Standards

Entry Standards	Description
No value	No value

Course Limitations

Cross Listed or Equivalent Course

Description

No value

No value

Requisite Validation

Upload Statistical Validation and/or other documents (if necessary)

No Value

Specifications

Methods of Instruction

Methods of Instruction

Lecture

Methods of Instruction

Laboratory

Methods of Instruction

Multimedia

Methods of Instruction

Field Activities (Trips)

Methods of Instruction

Guest Speakers

Out of Class Assignments

- Field trip (e.g. tour of architectural offices)
- Final individual project (e.g. rendering of an architectural structure and/or interior design project)

Methods of Evaluation

Rationale

Exam/Quiz/Test

Midterm examinations

Exam/Quiz/Test

Final exam

Project/Portfolio

Portfolio review and critique. (e.g. this is typically a critique of all the work that the student has accomplished during the course. The work

will be evaluated by the instructor)

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Ascent Center for Technical Knowledge	Autodesk 3ds Max 2024: Fundamentals (Mixed Units)	Hoboken: Wiley Publishing Company	2024	1959504762
Rodolfi, Luca	Photorealism with Twinmotion: Raster - Path Tracer - Lumen	Independently published	2023	979-8862125900

Other Instructional Materials (i.e. OER, handouts)

No Value

Learning Outcomes

Course Objectives

Utilize the 3ds Max software.

Create and modify architectural and interior design models.

Utilize the Twinmotion software to create real-time animations.

Produce accurate building walkthroughs, rendering, texturing, and lighting of architectural and interior design projects.

Utilize augmented reality (AR) software to create augmented and virtual reality immersive environments for architectural and interior design projects.

SLOs

Utilize the software to perform various design tasks.

Expected Outcome Performance: 70.0

<i>ILOs</i> Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.

<i>ARCH</i> Architectural Drafting and Design	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)

<i>ARCH</i> Architectural Drafting & Design - Certificate	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)

Explain the concepts of rendering, texturing, lighting, and animation.

Expected Outcome Performance: 70.0

<i>ILOs</i> Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
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<i>ARCH</i> Architectural Drafting and Design	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)

<i>ARCH</i> Architectural Drafting & Design - Certificate	Demonstrate techniques to accomplish drawings utilizing different computer aided design (CAD) software;
	Develop a portfolio of student work (this portfolio will show the student's best work from different classes within the department, discuss building construction techniques, principles, and building code)

Explain the purpose and concepts of real-time augmented environments.

Expected Outcome Performance: 70.0

<i>ILOs</i> Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
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Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

Introduction to the Course (2 Hours)

- Syllabus/class schedule
- Introduction to required projects
- Introduction to software
 - 3DS Max
 - Twinmotion
 - Augmented reality (AR) software

User Interface (4 Hours)

- Menus & toolbars
- Viewport and navigation
- Application settings

Modeling (4 Hours)

- Application setup
- Basic modeling tools
- Modifier tools

Materials and Mapping (3 Hours)

- Materials creation and management
- Using bitmaps and other mapping types

Lighting and Illumination (3 Hours)

- Basic lighting types and parameters
- Lighting placement
- Global illumination

Camera Tools (3 Hours)

- Basic camera types, lenses and parameters
- Camera placement and animation

Rendering (2 Hours)

- Render scene dialog box
- Render tab overview
- File output types

Real-time Rendering (2 Hours)

- User interface
- Materials and lighting
- Output formats, such as video, still image and VR

Augmented Reality (4 Hours)

- Introduction to AR applications such as Augment and Wikitude
- 3D headset and mobile phone publishing
- Quick Response (QR) code theory and code generation
- Use of TurboSquid.com and other model marketplaces

Total Hours: 27

Laboratory/Studio Content

Introduction to the Course (2 Hours)

- Syllabus/class schedule
- Introduction to required projects
- Introduction to software
 - 3DS Max
 - Twinmotion
 - Augmented reality (AR) software

User Interface (12 Hours)

- Menus & toolbars

- Viewport and navigation
- Application settings

Modeling (12 Hours)

- Application setup
- Basic modeling tools
- Modifier tools

Materials and Mapping (9 Hours)

- Materials creation and management
- Using bitmaps and other mapping types

Lighting and Illumination (9 Hours)

- Basic lighting types and parameters
- Lighting placement
- Global illumination

Camera Tools (9 Hours)

- Basic camera types, lenses and parameters
- Camera placement and animation

Rendering (8 Hours)

- Render scene dialog box
- Render tab overview
- File output types

Real-time Rendering (8 Hours)

- User interface
- Materials and lighting
- Output formats, such as video, still image and VR

Augmented Reality (12 Hours)

- Introduction to AR applications such as Augment and Wikitude
- 3D headset and mobile phone publishing
- Quick Response (QR) code theory and code generation
- Use of TurboSquid.com and other model marketplaces

Total Hours: 81 Hours

Additional Information

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Is it possible this course will have a material fee?

No Value

I have contacted my library liaison (<https://campusguides.glendale.edu/faculty/liasons>):

No Value

What term(s) will this course be offered?

No Value

Will any additional resources be needed for this course? (Click all that apply)

No Value

If additional resources are needed, add a brief description and cost in the box provided.

No Value