

INDUSTRIAL DESIGN

Associate in Science Degrees

- Industrial Design - Associate in Science (<https://lbcc-public.courseleaf.com/degrees-certificates/industrial-design/industrial-design-as/>)

Certificates of Completion

- Solidworks Essentials - Certificate of Completion (<https://lbcc-public.courseleaf.com/degrees-certificates/industrial-design/solidworks-essentials-certificate-completion/>)

ARCHT 20 3 units

Visual Literacy and Civilization

36 hours lecture, 54 hours laboratory

Grading: letter grade.

This course is a visual exploration of civilization with a focus on culture in the built environment. This course analyzes the rules of representational conventions in the context of their rich cultural history, and contrasts them with non-western traditions. Introduction to several of 20th century's schools of thought that have been critical of the hegemonic visual regime of modernity, and its role in colonial expansion and domination of non-western cultures. Opportunities to discuss the readings and to conduct drawing exercises that will illustrate these readings.

Transferable to both UC and CSU; see counselor for limitations

ARCHT 21 3 units

Design Methods and Theories

36 hours lecture, 54 hours laboratory

Grading: letter grade.

This course introduces students to the process of architectural design, exploring the built environment through lectures, readings, film and activities that address different design approaches. It includes studies of historical precedents; an exposition of various design philosophies; and an introduction to the tools, techniques, and methods relevant in the design process.

Transferable to both UC and CSU; see counselor for limitations

ARCHT 32 1.5 units

SketchUp I

18 hours lecture, 36 hours laboratory

Grading: letter grade.

Formerly ARCHT 252. This entry-level SketchUp course is aimed at individuals with a drafting background employed in engineering, and other related fields who wish to upgrade their skills in the area of Computer Aided Modeling (CAM). CAM training will utilize a recent version SketchUp in the Windows environment. The purpose of the class is to prepare students to use SketchUp to model and present architectural ideas in a timely manner, use V-Ray for SketchUp to create renderings with proper lighting and photo realism.

Transferable to CSU Only

ARCHT 33 1.5 units

SketchUp II

18 hours lecture, 36 hours laboratory

Prerequisite: ARCHT 32.

Grading: letter grade.

Formerly ARCHT 253. This intermediate SketchUp course is aimed at individuals with a drafting background employed in engineering, and other related fields who wish to upgrade their skills in the area of Computer Aided Modeling (CAM). CAM training will utilize a recent version SketchUp in the Windows environment. The purpose of the class is to prepare students to use SketchUp to perform advanced modeling and learn to use SketchUp layouts to create presentations including the renders, floor plans, sections and elevations in an organized manner.

Transferable to CSU Only

ARCHT 34 1.5 units

AutoCAD Basics

18 hours lecture, 36 hours laboratory

Grading: letter grade.

Formerly ARCHT 254. This course is an architectural documentation class for Computer Aided Drafting (CAD). This introductory CAD training will utilize a recent version AutoCAD in the Windows environment. This course introduces CAD fundamentals: user interface, basic draw and edit commands, and other architectural industry standards.

Transferable to CSU Only

ARCHT 35 1.5 units

Rhino Basics

18 hours lecture, 36 hours laboratory

Grading: letter grade.

Formerly ARCHT 251. This entry-level Rhinoceros course is aimed at individuals with a drafting background employed in engineering, and other related fields who wish to upgrade their skills in the area of Computer Aided Modeling (CAM). CAM training will utilize a recent version Rhinoceros in the Windows environment. This course introduces Rhinoceros fundamentals: user interface, basic draw and edit commands, basic modeling commands, geometry development, geometry modification, and visualization strategies. Exercises cover drawings for industrial and architectural applications.

Transferable to CSU Only

ARCHT 36 3 units

Visualization and Communication

36 hours lecture, 54 hours laboratory

Recommended Preparation: ARCHT 62.

Grading: letter grade.

Formerly ARCHT 255. A study of advanced individual student architectural design projects for portfolio preparation. Exploration and analysis of portfolio presentation principles and techniques. Development of digital portfolios using computer illustration, photo imaging and page layout programs. Evaluation of printing and binding techniques.

Transferable to CSU Only

ARCHT 37 1.5 units**Advanced AutoCAD****18 hours lecture, 36 hours laboratory**

Prerequisite: ARCHT 34.

Grading: letter grade.

This course introduces advanced techniques and teaches students to be proficient in the use of AutoCAD. Students learn how to recognize the best tool for the task, the best way to use that tool, and how to create new tools to accomplish tasks more efficiently. Students construct a variety of 2D and 3D drawings and 3D models and learn how to incorporate their models into a variety of printable layouts.

Transferable to CSU Only

ARCHT 61 4 units**Fundamental Design Studio****54 hours lecture, 54 hours laboratory**

Recommended Preparation: ARCHT 35 or ARCHT 635.

Grading: letter grade.

This course is an introductory architectural class utilizing a range of software to document design solutions both graphically and through model building techniques. The class prepares students for careers in the field of architecture and related fields such as interior and environmental design. Students apply elements of design and characteristics of style to create a small structure and develop a corresponding graphic presentation consisting of architectural drawings and precedent studies.

Transferable to CSU Only

ARCHT 62 4 units**Social Design Studio****54 hours lecture, 54 hours laboratory**

Prerequisite: ARCHT 61.

Grading: letter grade.

This course is an architectural class that uses CAM/BIM software to document design solutions both graphically and through model building techniques. The class prepares students for careers in the field of architecture and related fields such as interior and environmental design. Students apply elements of design and characteristics of style to create a partial set of preliminary architectural drawings for a prefabricated housing project, engaging socio and cultural conditions as an impetus for design.

Transferable to CSU Only

ARCHT 65 4 units**Context Design Studio****54 hours lecture, 54 hours laboratory**

Prerequisite: ARCHT 61.

Grading: letter grade.

This is an intermediate architectural design course for the transfer, occupational or returning student. It is a design course where students will create 2D and 3D architectural designs, 2D construction drawings and build physical models. Students will focus on landscape and ecological issues, developing a detailed residential structure.

Transferable to CSU Only

ARCHT 66 4 units**Architectural Design Studio IV****54 hours lecture, 54 hours laboratory**

Prerequisite: ARCHT 65.

Grading: letter grade.

This is an intermediate level architecture courses for the transfer, occupational or returning student. It is a design course focused on institutional scale project with an introduction to ADA code. Students will create 2D and 3D architectural designs, 2D construction drawings and build digital models utilizing sketches and the latest 2D & 3D software.

Transferable to CSU Only

ARCHT 71 4 units**Design/Build Studio****54 hours lecture, 54 hours laboratory**

Prerequisite: ARCHT 61.

Grading: letter grade.

Formerly ARCHT 71AD. This is an intermediate level architecture course for transfer, occupational or continuing student. It is a design/build course that utilizes computation, freehand sketching and various fabrication techniques. Students will create complex 2D and 3D architectural designs, complete 2D building plans and build physical and digital models. Students will engage basic construction techniques for hands on experience, cumulating in an installed design/build project.

Transferable to CSU Only

ARCHT 80 3 units**Arch. History - Ancient to Medieval****54 hours lecture**

Grading: letter grade.

This course presents an overview of the history of architecture from the Prehistoric period through the 16th century from a global perspective. The survey covers 5 distinct regions - Africa, Asia, Europe, The Americas and West Asia - proving a wide cross section of global cultural traditions through materials, practice and idea dissemination. Discusses pre-modern western and non-western architectural ideas and practices in their social, cultural, and representational contexts. The course is appropriate for art majors and non-art majors.

Transferable to both UC and CSU; see counselor for limitations

ARCHT 81 3 units**Arch. History - Medieval to Renaissance****54 hours lecture**

Prerequisite: ARCHT 80.

Grading: letter grade.

This course will examine the architectural history of the Italian Renaissance from its origins in the 14th Century. Students will be guided through the political, economic and social issues that determined the rupture between two main historical eras: the Middle Ages and Modern times.

Transferable to both UC and CSU; see counselor for limitations

ARCHT 91 3 units
Environmental Controls Systems
54 hours lecture

Prerequisite: ARCHT 61.

Grading: letter grade.

This course will discuss Climate Change and the critical role architects play in the discussion in the context of understanding and designing for the thermal environment of buildings. Through the semester, students will discuss and review basic concepts of sustainability, gaining an understanding of climate-appropriate design, passive heating and cooling, and renewable energy systems. At the same time, through weekly readings and assignments, students will use tools to help them understand, measure and design better buildings. They will be exposed to and will learn the international language of sustainability.

Transferable to CSU Only

ARCHT 92 3 units
Building Construction
36 hours lecture, 54 hours laboratory

Recommended Preparation: ARCHT 61.

Grading: letter grade.

Students will learn about various building systems, and how these systems assist in the expression of a design concept, through an examination of precedent projects whose design concepts were generated by material logics and systems. Students will work hands-on with building materials (concrete, wood, metal, etc.) to get an understanding of each material's properties.

Transferable to CSU Only

ARCHT 93 3 units
Structures I
36 hours lecture, 54 hours laboratory

Prerequisite: ARCHT 62 and PHYS 2A and MATH 40.

Grading: letter grade.

This course previews the historic evolution of structures, considering the influence of cultural, economic, and resource factors. The four S's for required for architectural structures: Synergy, Strength, Stiffness and Stability. This class studies existing structures determining synergy and load paths, load on buildings (dead- and live load) dynamic and thermal loads, as well as structural responses to loads. With static equilibrium as basis of analysis students calculate the strength of materials and mechanics, examining stress, strain, and stress-strain relations.

Transferable to CSU Only

ARCHT 230 4 units
REVIT I
54 hours lecture, 54 hours laboratory

Grading: letter grade.

Formerly ARCHT 230AD. This is a beginning class in a series of five, aimed at individuals with a drafting background employed in architecture, interior design and other related fields, who wish to upgrade their skills in the area of parametric Building Information Modeling, BIM. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Instruction will emphasize the fundamentals of developing a BIM architectural modeling project and extracting formatted working drawings and a rendered presentation from the 3D model.

ARCHT 231 4 units
REVIT II
54 hours lecture, 54 hours laboratory

Prerequisite: ARCHT 230.

Grading: letter grade.

Formerly ARCHT 231AD. This is an intermediate class second in a series of five aimed at individuals with a drafting background employed in architecture, interior design and other related fields who wish to upgrade their skills in the area of parametric Building Information Modeling, BIM. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Instruction will emphasize collaboration tools, advanced design development tools, and advanced construction document tools through the development of a high-rise commercial structure project.

ARCHT 232 4 units
REVIT III
54 hours lecture, 54 hours laboratory

Prerequisite: ARCHT 231.

Grading: letter grade.

Formerly ARCHT 232AD. This is an advanced class the third in a series of five aimed at individuals with a drafting background employed in architecture, interior design and other related fields who wish to upgrade their skills in the area of parametric Building Information Modeling, BIM. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Instruction will enable students who have worked with BIM to expand their knowledge in the areas of Dynamo, a parametric plugin, virtual reality, and cross platform integration.

ARCHT 233 4 units
REVIT IV
54 hours lecture, 54 hours laboratory

Prerequisite: ARCHT 232.

Grading: letter grade.

This is an advanced class the fourth in a series of five aimed at individuals with a drafting background employed in architecture, interior design and other related fields who wish to upgrade their skills in the area of parametric Building Information Modeling, BIM. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Students will learn about other disciplines and their BIM tools, and develop best practices for worksharing.

ARCHT 234 4 units
REVIT V
54 hours lecture, 54 hours laboratory

Prerequisite: ARCHT 232.

Grading: letter grade.

This is an advanced class, the fifth in a series of five, aimed at individuals with a drafting background employed in architecture, interior design and other related fields. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Instruction will enable students who have worked with BIM to expand their knowledge in the areas of Historical Building Information Modeling (HBIM) and point cloud management from 3D scanned sites.

ARCHT 601 0 units**ARE Exam Prep I****27 hours lecture**

Grading: non graded.

This course introduces students to key concepts on the Practice Management division exam, such as the business of architecture and the intricacies of managing an architectural practice. Topics common to this exam include employee allocation per project, asset allocation and business development, various contracts and fee structures, responsibilities, and regulations.

ARCHT 602 0 units**ARE Exam Prep II****27 hours lecture**

Grading: non graded.

This course introduces students to key concepts on the Project Management division exam, such as the processes and procedures for managing architectural projects. This includes understanding the role of contracts and how they fit into project management regarding the organization and managing personnel and consultants. This division also examines strategies for improving the delivery of services through quality control, scheduling, and project teams.

ARCHT 603 0 units**ARE Exam Prep III****27 hours lecture**

Grading: non graded.

This course introduces students to key concepts on the Programming and Analysis division exam, such as the opportunities, constraints, and requirements for projects. This division examines the multitude of aspects in developing a project, including establishing the criteria (qualitative and quantitative) affecting projects and subsequent analysis of project type, site, and associated context and economics.

ARCHT 604 0 units**ARE Exam Prep IV****27 hours lecture**

Grading: non graded.

This course introduces students to key concepts on the Project Planning and Design division exam, such as the preliminary design of buildings and sites through conceptual design, design associated with sustainability and the environment, and with codes and regulations such as universal design.

ARCHT 605 0 units**ARE Exam Prep V****27 hours lecture**

Grading: non graded.

This course introduces students to key concepts on the Project Development and Documentation division exams, such as building system integration, materials and assemblies, and their selection in a project. Additionally, this division evaluates the integration of systems such as structural, mechanical, electrical, plumbing, and civil—as well as specialty systems—into design and documentation.

ARCHT 606 0 units**ARE Exam Prep VI****27 hours lecture**

Grading: non graded.

This course introduces students to key concepts on the Construction and Evaluation division exam, such as the process of construction administration including contract administration, execution, and services such as submittal reviews, construction observation, and payment requests, project close-out, and post-occupancy activities.

ARCHT 607 0 units**ARE Exam Prep VII****27 hours lecture**

Grading: non graded.

This course introduces students to key concepts on the California Supplemental Examination exam, such as the architectural implications of California's large physical size, large and diverse population, varied landscape and climate, high seismicity, and other regulations and entitlements.

ARCHT 610 0 units**Design 101****9 hours lecture, 18 hours laboratory**

Grading: non graded.

This course introduces Design to students interested in careers in Architecture, Construction Management, and Interior Design. Students will engage in key design strategies, critical thinking, and problem assessing by completing a short design project. Students will gain knowledge about each profession and will understand what to expect in the educational setting.

ARCHT 611 0 units**Modeling 101****9 hours lecture, 18 hours laboratory**

Grading: non graded.

This course introduces physical and digital modeling to students interested in careers in Architecture, Construction Management, and Interior Design. Students will learn how to build architectural models out of a range of materials as well as the role computers play in design. Students will gain knowledge about each profession and will understand what to expect in the educational setting.

ARCHT 632 0 units**SketchUp I****18 hours lecture, 36 hours laboratory**

Grading: non graded.

This entry-level SketchUp course is aimed at individuals with a drafting background employed in engineering, and other related fields who wish to upgrade their skills in the area of Computer Aided Modeling (CAM). CAM training will utilize a recent version SketchUp in the Windows environment. The purpose of the class is to prepare students to use SketchUp to model and present architectural ideas in a timely manner, use V-Ray for SketchUp to create renderings with proper lighting and photo realism.

ARCHT 633 0 units**SketchUp II****18 hours lecture, 36 hours laboratory**

Prerequisite: ARCHT 632.

Grading: non graded.

This intermediate SketchUp course is aimed at individuals with a drafting background employed in engineering, and other related fields who wish to upgrade their skills in the area of Computer Aided Modeling (CAM). CAM training will utilize a recent version of SketchUp in the Windows environment. The purpose of the class is to prepare students to use SketchUp to perform advanced modeling and learn to use SketchUp layouts to create presentations including the renders, floor plans, sections and elevations in an organized manner.

ARCHT 634 0 units**AutoCAD Basics****18 hours lecture, 36 hours laboratory**

Grading: non graded.

This course is an architectural documentation class for Computer Aided Drafting (CAD). This introductory CAD training will utilize a recent version AutoCAD in the Windows environment. This course introduces CAD fundamentals: user interface, basic draw and edit commands, and other architectural industry standards.

ARCHT 635 0 units**Rhino Basics****18 hours lecture, 36 hours laboratory**

Grading: non graded.

This entry-level Rhinoceros course is aimed at individuals with a drafting background employed in engineering, and other related fields who wish to upgrade their skills in the area of Computer Aided Modeling (CAM). CAM training will utilize a recent version Rhinoceros in the Windows environment. This course introduces Rhinoceros fundamentals: user interface, basic draw and edit commands, basic modeling commands, geometry development, geometry modification, and visualization strategies. Exercises cover drawings for industrial and architectural applications.

ARCHT 637 0 units**Advanced AutoCAD****18 hours lecture, 36 hours laboratory**

Prerequisite: ARCHT 34 or ARCHT 634.

Grading: non graded.

This course introduces advanced techniques and teaches students to be proficient in the use of AutoCAD. Students learn how to recognize the best tool for the task, the best way to use that tool, and how to create new tools to accomplish tasks more efficiently. Students construct a variety of 2D and 3D drawings and 3D models and learn how to incorporate their models into a variety of printable layouts.

ARCHT 640 0 units**REVIT I****54 hours lecture, 54 hours laboratory**

Grading: non graded.

This is a beginning class in a series of three, aimed at individuals with a drafting background employed in architecture, interior design and other related fields, who wish to upgrade their skills in the area of parametric Building Information Modeling, BIM. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Instruction will emphasize the fundamentals of developing a BIM architectural modeling project and extracting formatted working drawings and a rendered presentation from the 3D model.

ARCHT 641 0 units**REVIT II****54 hours lecture, 54 hours laboratory**

Prerequisite: ARCHT 230 or ARCHT 640.

Grading: non graded.

This is an intermediate class second in a series of three aimed at individuals with a drafting background employed in architecture, interior design, and other related fields who wish to upgrade their skills in the area of parametric Building Information Modeling, BIM. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Instruction will emphasize collaboration tools, advanced design development tools, and advanced construction document tools through developing a high-rise commercial structure project.

ARCHT 642 0 units**REVIT III****54 hours lecture, 54 hours laboratory**

Prerequisite: ARCHT 231 or ARCHT 641.

Grading: non graded.

This is an advanced class, the third in a series of three aimed at individuals with a drafting background employed in architecture, interior design, and other related fields who wish to upgrade their skills in the area of parametric Building Information Modeling, BIM. Students will be instructed in the essentials of REVIT Architecture or an equivalent BIM software. Instruction will enable students who have worked with BIM to expand their knowledge in the areas of Dynamo, a parametric plugin, virtual reality, and cross-platform integration.

ARCHT 661 0 units**Fundamental Design Studio****54 hours lecture, 54 hours laboratory**

Recommended Preparation: ARCHT 35 or ARCHT 635.

Grading: non graded.

This course is an introductory architectural class utilizing a range of software to document design solutions both graphically and through model building techniques. The class prepares students for careers in the field of architecture and related fields such as interior and environmental design. Students apply elements of design and characteristics of style to create a small structure and develop a corresponding graphic presentation consisting of architectural drawings and precedent studies.