

Welcome to BIM 361

Course Description

An introductory level course for professional designers, architects, engineers, contractors and others seeking professional advancement and job transition through acquiring 3D and 4D modeling review skills.

Student Learning Outcomes & Objectives

1. Explore the methodologies for integrating Revit, 3D AutoCAD and compatible software programs into a 3D model which can be used to create clash detection between various structural and MEP systems.
2. Apply workflow strategies for efficient use of integrating various BIM models into clash detection analysis models.
3. Create timeline animations representing 4D construction modeling and scheduling.
4. Produce and resolve time-based clash detection reports which will minimize on-site construction change order requests.

By the conclusion of this class, participants will be able to effectively run object-interference checks on 3D models from multiple disciplines, create 4D simulations, interactive animations, and photorealistic renderings using Navisworks tools.

Software Year

Autodesk Navisworks 2021 is recommended for this course, though more recent versions of the software will work as well. If you have specific questions about software versions, please contact your instructor.

Recommended Textbook

There is no required textbook for this course, but if you would like to purchase the recommended textbook as an additional reference, we have provided recommended reading guidelines within the course lessons.

Autodesk Navisworks 2021: Fundamentals (ISBN-10: 1952866634)

<https://www.ascented.com/courseware/product/autodesk-navisworks-2021-fundamentals>

Course Prerequisites

- Fundamental working knowledge of the Windows environment or instructor approval.
- Competency in reading and writing English (all course training is in English - including written, oral, media-based, and other forms of instructor/administrative communication).

Communication Policy

You may contact your instructor through the Learning Hub messaging system. Please reach out to your instructor early and often, especially if you are experiencing challenges in completing course assignments on time. Your instructor will answer your messages within 24 hours or less.

Course Schedule

Lesson	Topics	Quizzes/Assignments	Points
1	<ul style="list-style-type: none"> ○ Navisworks Overview ○ Object Selection & Selection Tree ○ Visibility and Materials ○ Object Properties ○ Measuring and Moving Objects ○ Selection and Search Sets ○ Viewpoints ○ Comments and Redlining ○ Animations & Sectioning ○ Exporting from Revit <p><i>Recommended Reading:</i> Chapter 1: 1.1 - 1.3 Chapter 3: 3.1 - 3.4 Chapter 4: 4.1 - 4.5 Chapter 5: 5.1 - 5.2</p>	Quiz: Introduction to Navisworks Quiz: Files and File Types Quiz: Navigation Tools Quiz: Viewpoints Graded Discussion Forum: Initial Post	100 60 70 90 5
2	<ul style="list-style-type: none"> ○ Basic and Advanced Section Tools ○ Viewpoint Animations ○ Exporting Section Animations ○ Importing and Exporting Revit (.rvt), AutoCAD (.dwg), Navisworks Cache (.nwc) files and 2D Elements ○ Appearance Overrides 	Quiz: Sections and Animations	100

Lesson	Topics	Quizzes/Assignments	Points
3	<ul style="list-style-type: none"> ○ Animator Overview ○ Cameras and Viewpoints ○ Manipulate Geometry Objects ○ Section Plane Sets ○ Controlling Animation Scene ○ Playback & Scripter <p><i>Recommended Reading:</i> Chapter 8: 8.1 - 8.3 Chapter 9: 9.1 - 9.3</p>	<p>Quiz: Scripter</p> <p>Quiz: Animator</p> <p>Midterm Submission</p>	<p>60</p> <p>80</p> <p>100</p>
4	<ul style="list-style-type: none"> ○ Presenter Overview ○ Apply Materials & Lighting ○ Real-Time Rendering ○ Background & Rendering Effects ○ Rendered Images & Animations <p><i>Recommended Reading:</i> Chapter 11: 11.1 - 11.3</p>	<p>Quiz: Rendering</p>	<p>70</p>
5	<ul style="list-style-type: none"> ○ Curtain Walls ○ TimeLiner Overview ○ Creating and Importing Tasks ○ Simulations ○ Time-Based Clashing <p><i>Recommended Reading:</i> Chapter 10: 10.1 - 10.5</p>	<p>Quiz: TimeLiner</p> <p>Graded Discussion Forum: Reflection</p>	<p>70</p> <p>5</p>
6	<ul style="list-style-type: none"> ○ Clash Detective Overview ○ Clash Test Settings & Rules ○ Clash Results & Reporting ○ Clash Test Batches ○ Custom Clash Tests ○ Holding and Releasing Objects <p><i>Recommended Reading:</i> Chapter 6: 6.1 - 6.7</p>	<p>Quiz: Clash Detective</p> <p>Final Submission</p>	<p>80</p> <p>100</p>

Attendance

To satisfy the course attendance requirements, students are typically required to complete at a minimum, the initial graded discussion forum engagement by the 4th day of the course and the midterm before the end of the 11th day of the course. All remaining course deliverables including the second graded discussion forum engagement, quizzes and final are due before the end of the 18th day of the course. Course attendance is also evaluated by the timely submission of a student’s quizzes. Specific due dates for this course can be found in “Assignment Instructions & Deadlines”.

Participation

Participation is evaluated by engagement in the Graded Discussion Forum. This forum encourages participation directly with instructors and students in a course. Typically, ten percent of the course grade is assigned for participation. A specific grading breakdown for this course can be found in “Weighted Grading Criteria”.

Grading Policies

After you have successfully completed all course requirements, you will receive a VDCI course completion certificate. If you are registered as an Audit student, you will not have access to course assignments or quizzes and you will not receive a grade in the course. To change your VDCI grading option from letter grade to Audit, please contact Admissions at learn@vdc.edu. If you are a VDCI Technology Certificate student, your course must be taken for a letter grade.

Letter grades are based on the following scale. Your final course grade is based on the weighted grading criteria of the points you have earned.

Passing Grades	
A+	100%
A	93-99%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%

Non-Passing Grades	
D	60-69%
F	59% and below

Weighted Grading Criteria

Discussion Forums	10%
Quizzes	10%
Hands-On Quizzes	20%
Midterm Submission	20%
Final Submission	40%
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Total	100%

NOTE: Students can check their course progress in the VDCI Learning Hub at any time by clicking the Assignments tab on the right sidebar of each course page.

Assignment Instructions & Deadlines

Below is a calendar view of your 18-day course, please use this to budget your time as you work through Lessons 1 through 6 and complete the required assignments.

NOTE: Courses always begin on Fridays and end on the third Monday – specific start dates will vary, please email learn@vdc.edu with any questions regarding your course schedule.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					Class Start Date	
	Discussion Forum Post					
	Midterm Due					
	All Quizzes, Second Discussion Forum Post, & Final Due	Grading Period	Grading Period	Final Grades Posted		

Graded Discussion Forum:

- There are two Graded Discussion Forum posts that will be graded in this course:
 1. The first post in Lesson 1, where you will answer the discussion prompt, is due the first Monday by 11:59 pm (PT).
 - If you are less knowledgeable about the discussion prompt topic, you can ask questions about the discussion prompt and/or share what you find when you research the topic yourself.
 2. Your response to a classmate's post in Lesson 1 is due the last day of class, the third Monday by 11:59 pm (PT).
- Your grade for each post will be reduced by 10% for every day the post/response is late.
- Posts and responses should be meaningful and geared towards expanding you and your classmate's learning experience.

Midterm Submission:

- The midterm is due before the end of the second Monday by 11:59 pm (PT).
- Your grade for this submission will be reduced by 10% (one full letter grade) for every day your submission is late.

Final Submission:

- Final course project deliverables will not be accepted any later than one day after the course has formally been closed the end of the third Monday by 11:59 pm (PT).
- Your grade will be reduced by 10% (one full letter grade) for being late.

All remaining course assignments are due by the end of the third Monday by 11:59 pm (PT).

Student Groups & Engagement

The Learning Hub will automatically add you to the course's Student Group - this is a non-graded area for you to interact with your fellow classmates. Please use the Student Group to discuss any issues you are having with the course and to get to know one another.

Another great way to connect with other VDCI current students and alumni, is through the [Facebook VDCI Student Lounge](#).

Academic Integrity Policy

The Virtual Design & Construction Institute (VDCI) is an institution of learning, career education, and technical skill development – a community based on academic honesty and integrity. As members of the VDCI community, faculty, students, and administrative staff share responsibility for maintaining this environment. It is essential that all members of the VDCI community subscribe to the ideal of academic honesty and integrity and accept individual responsibility for their work. Academic dishonesty is unacceptable and will not be tolerated at VDCI. Cheating, forgery, dishonest conduct, plagiarism, and collusion in dishonest activities erode the Institute's educational, research, and social roles.

If students who knowingly or intentionally conduct or help another student perform dishonest conduct, acts of cheating, or plagiarism will be subject to disciplinary action at the discretion of VDCI.