COURSE OUTLINE		
TERM: Fall 2026	**COURSE NO:** DIGI 131	
INSTRUCTOR:	**COURSE TITLE:** Visual Effects Animation I	
OFFICE: **LOCAL:** **E-MAIL:** @capilanou.ca	**SECTION NO(S):**	**CREDITS:** 3.0
OFFICE HOURS:		
COURSE WEBSITE:		

Capilano University is named after Chief Joe Capilano (1854–1910), an important leader of the Sḵwx̱wú7mesh (Squamish) Nation of the Coast Salish Peoples. We respectfully acknowledge that our campuses are located on the unceded territories of the səlilwətaɬ (Tsleil-Waututh), shíshálh (Sechelt), Sḵwx̱wú7mesh (Squamish), and xʷməθkʷəy̓əm (Musqueam) Nations.

COURSE FORMAT
Classes are four hours per week for a 15-week semester. There are no exams scheduled for this course.

COURSE PREREQUISITES/CO-REQUISITES
None

CALENDAR DESCRIPTION
In this course, students will be introduced to the process of animating objects and effects in 3D space. This course will cover animation techniques used in the creation of visual effects shots in film projects. This course will focus on the use of realistic animated effects in film projects and their creation using advanced 3D animation software.

COURSE NOTE
DIGI 131 is equivalent to VFX 130. Duplicate credit will not be granted for this course and VFX 130.
DIGI 131 is an approved Numeracy course for Cap Core requirements.
DIGI 131 is an approved Quantitative/Analytical course for baccalaureate degrees.

REQUIRED TEXTS AND/OR RESOURCES
All course materials will be provided for students through digital handouts, and links.

COURSE STUDENT LEARNING OUTCOMES
On successful completion of this course, students will be able to do the following:

- Plan, organize and create an animated effects shot using complex particle and fluid simulations;

- Design and create many different types of armature and have the capacity to animate them using keyframe animation, motion capture or 3D simulation;
- Animate objects and simulations in a realistic manner utilizing the principles of animation;
- Determine the best approaches to creating effects animations for a given shot;
- Integrate visual effects into a shot;
- Perform efficient animation tasks in a specific time period;
- Interact effectively in team environment, showing leadership and responsible work habits

Students who complete a Numeracy course will be able to do the following:

- Apply both analytical and numerical skills to solve problems;
- Summarize and analyze data in quantitative forms;
- Interpret and draw conclusions from an analysis of quantitative data;
- Represent quantitative information in a variety of forms;
- Incorporate quantitative evidence in support of an argument.

COURSE CONTENT

This content will be delivered in the form of lectures, screenings and in class exercises as well as assignments. All course materials will be on elearn and the content will be delivered in-person.

WEEK	TOPICS	READINGS and ACTIVITIES
Week 1	• Introduction to computer graphics and visual effects animation • Animation fundamentals in a CG environment • Transforms, pivots, and simple deformations • Parent–child relationships and object hierarchies • Timing and motion control using graph editors and dope sheets	Assignment 1: VFX Animation
Week 2	• Principles of animation and their application to visual effects • Applying timing, spacing, weight, arcs, overlap and follow-through, and squash and stretch • Analyzing live-action reference and production assets • Using reference footage, beat boards, and image planning • Creating and refining looped animations	
Week 3	• Controlling motion using ease-in and ease-out techniques • Saving, loading, and reusing animation data • Building and refining performance using animation layers	
Week 4	• Polygon meshes and deformation fundamentals • Using animated and layered deformers • Introduction to joint-based armatures • Forward and inverse kinematics (FK/IK) • Baking and plotting animation data	Assignment 2: Animation Deformers
Week 5	• Control rigs and character animation workflows	

	• FK/IK armatures and animation control systems • Painting and adjusting deformations using weighting and component tools • Character sets and efficient keyframe management • Animation workflow stages: blocking, breakdowns, and cleanup	
Week 6	• Matchmoving fundamentals and workflows • Ingesting and managing plates and metadata • Manual and automated tracking techniques • Camera reconstruction and scene alignment • Building 3D geometry for tracked shots • Exporting tracked plates and data for production	Assignment 3: Platematching and Tracking
Week 7	• Render passes and compositing AOV fundamentals • Common AOV types and their production uses • Se□ng up and managing AOVs • Creating and using custom AOVs • Basic node-based compositing and plate integration	
Week 8	• Humanoid FK armature fundamentals • Basic FK/IK setups for humanoid characters • Introduction to digital human workflows • Exporting animation and rig data	Assignment 4: Motion Capture
Week 9	• Introduction to motion capture workflows • Common file formats for mocap data • Se□ng up basic mocap armatures • Capturing and recording performances	
Week 10	• Retargeting and refining motion capture performances	
Week 11-15	Creating a VFX shot for an animated production • Creating a VFX shot for an animated production • Simulation techniques for VFX, including rigid body dynamics • Plate matching and shot tracking • Compositing CG elements into live-action plates • Post-production workflow and final delivery	Assignment 5: VFX Shot

EVALUATION PROFILE

Participation	10%
Assignment 1 – VFX Animation	15%
Assignment 2 – Animation Deformers	15%
Assignment 3 – Platematching and Tracking	15%
Assignment 4 – Motion Capture	20%
Assignment 5 – VFX Shot	25%
Total:	100%

Assignment Descriptions
All assessments will be completed and/or submitted online.

- Assignments – MS Teams
- Final Assignments – copy to class folder on the Bosanas
- Work in progress – upload your video files to SyncSketch for weekly feedback and/or drawovers

All assignments will be included in the calculation of your final grade. Failure to submit assignments may result in failing the course.

Participation
Participation is evaluated based on regular attendance in classes and labs, active engagement in discussions and projects, demonstrated understanding of assigned readings and coursework, and the frequency and quality of relevant comments, questions, and observations.

GRADING PROFILE

A+ = 90-100	B+ = 77-79	C+ = 67-69	D = 50-59
A = 85-89	B = 73-76	C = 63-66	F = 0-49
A- = 80-84	B- = 70-72	C- = 60-62	

Incomplete Grades
Grades of Incomplete "I" are assigned only in exceptional circumstances when a student requests extra time to complete their coursework. Such agreements are made only at the request of the student, who is responsible to determine from the instructor the outstanding requirements of the course.

Late Assignments
All assignments must be delivered at the place and time specified by the instructor. Late assignments will only be accepted if prior approval for a late submission date has been given by the instructor.

Missed Exams/Quizzes/Labs etc.
If you anticipate missing an exam/quiz/or lab, please consult with your instructor prior to the scheduled date, so that alternate arrangements can be considered. Accommodation can be made to honour community needs and traditional practices.

Attendance
Students are expected to a□end all classes and associated activities. Attendance is taken at the start of each class. Students who miss more than 20% of the course will not receive credit. Students are responsible for all material and assignments, even if absent. If circumstances affect attendance or coursework, email the instructor in advance to discuss possible adjustments. Instructors are not required to repeat missed material.

English Usage
Students are expected to proofread all written work for any grammatical, spelling and stylistic errors. Instructors may deduct marks for incorrect grammar and spelling in written assignments.

Electronic Devices
Students may use personal electronic devices during class for note taking only.

On-line Communication
Please be sure to check your official Capilano University email regularly as all official communication will be sent via this email address only. Additionally, you should be logging on to eLearn/teams 3 to 4 times per week for class updates and/or to engage in learning activities.

UNIVERSITY OPERATIONAL DETAILS

Tools for Success
Many services are available to support student success for Capilano University students. A central navigation point for all services can be found at: https://www.capilanou.ca/student-services/

Capilano University Security: download the CapU Safe Alert App

Policy Statement (S2009-06)
Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Academic Integrity, Academic Probation and other educational issues. These and other policies are available on the University website.

Academic Integrity (S2017-05)
Any instance of academic dishonesty or breach of the standards of academic integrity is serious and students will be held accountable for their actions, whether acting alone or in a group. See policy and procedures S2017-05 Academic Integrity for more information:
https://www.capilanou.ca/about-capu/governance/policies/

Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances, are prohibited and will be handled in accordance with the Student Academic Integrity Procedures.

Academic dishonesty is any act that breaches one or more of the principles of academic integrity. Acts of academic dishonesty may include but are not limited to the following types:

Cheating: Using or providing unauthorized aids, assistance or materials while preparing or completing assessments, or when completing practical work (in clinical, practicum, or lab settings), including but not limited to the following:

- Copying or attempting to copy the work of another during an assessment;
- Communicating work to another student during an examination;
- Using unauthorized aids, notes, or electronic devices or means during an examination;

- Unauthorized possession of an assessment or answer key; and/or,
- Submitting of a substantially similar assessment by two or more students, except in the case where such submission is specifically authorized by the instructor.

Fraud: Creation or use of falsified documents.

Misuse or misrepresentation of sources: Presenting source material in such a way as to distort its original purpose or implication(s); misattributing words, ideas, etc. to someone other than the original source; misrepresenting or manipulating research findings or data; and/or suppressing aspects of findings or data in order to present conclusions in a light other than the research, taken as a whole, would support.

Plagiarism: Presenting or submitting, as one's own work, the research, words, ideas, artistic imagery, arguments, calculations, illustrations, or diagrams of another person or persons without explicit or accurate citation or credit.

Self-Plagiarism: Submitting one's own work for credit in more than one course without the permission of the instructors, or re-submitting work, in whole or in part, for which credit has already been granted without permission of the instructors.

Prohibited Conduct: The following are examples of other conduct specifically prohibited:

- Taking unauthorized possession of the work of another student (for example, intercepting and removing such work from a photocopier or printer, or collecting the graded work of another student from a stack of papers);
- Falsifying one's own and/or other students' attendance in a course;
- Impersonating or allowing the impersonation of an individual;
- Modifying a graded assessment then submitting it for re-grading; or,
- Assisting or attempting to assist another person to commit any breach of academic integrity.

Sexual Violence and Misconduct

All Members of the University Community have the right to work, teach and study in an environment that is free from all forms of sexual violence and misconduct. Policy B401 defines sexual assault as follows:

> Sexual assault is any form of sexual contact that occurs without ongoing and freely given consent, including the threat of sexual contact without consent. Sexual assault can be committed by a stranger, someone known to the survivor or an intimate partner.

Safety and security at the University are a priority and any form of sexual violence and misconduct will not be tolerated or condoned. The University expects all Students and Members of the University Community to abide by all laws and University policies, including B.401 Sexual Violence Policy and B.401.1 Sexual Violence Procedure (found on Policy page https://www.capilanou.ca/about-capu/governance/policies/)

Emergencies: Students are expected to familiarise themselves with the emergency policies where appropriate and the emergency procedures posted on the wall of the classroom.

DEPARTMENT OR PROGRAM OPERATIONAL DETAILS

Continuation Policy

Students must successfully complete the required and elected 2D Animation (ANIM), 3D Animation (DIGI) or VFX course credits in one term before continuing to the next term.

Punctuality

Punctuality is essential. Students more than 15 minutes late for class will be marked absent.

Professional Behaviour

Students must demonstrate a professional attitude and behaviour toward work, other students, guests, and instructors. Each student should demonstrate reliability, respect for and co-operation with colleagues. A willingness to work calmly and courteously under difficult conditions as well as a determination to achieve first-class work while meeting deadlines is necessary in this course. Students must show respect for equipment and facilities.

Class Recordings

Class sessions may be recorded for use within this course only. Recordings may not be shared, reproduced, or uploaded outside the class. If recordings are to be used for any other purpose, students who are identifiable will be notified and their consent requested in advance.

Online Community and Communication Tools

All class content will be available through the course on https://elearn.capu.ca. All direct student communication will be done via Capilano email/teams.

Software	Link
eLearn	https://elearn.capu.ca/
myCapU	www.capilanou.ca/mycapu/
Zoom	www.zoom.com/
Microsoft Teams	teams.microsoft.com