

Course: DMED 540: Special Topics in Digital Media: Designing AI-Driven Products (3 credits)
Term: Summer 2025
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Acknowledgement of Coast Salish Peoples and Land

We respectfully acknowledge the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh Úxwumixw (Squamish), səliłwətał (Tsleil-Waututh) peoples on whose unceded traditional territories our campus resides.

Course Description

Never has the future of software been evolving so rapidly. AI has opened a lot of doors for startups to become more efficient and to help employees accomplish their tasks more easily. But sometimes advancements in technology can supersede utility. What good is an AI-driven software if it cannot directly benefit the user?

This is why product designers (A.K.A. UX designers) are a crucial part of the startup world. They not only improve the user experience, they form the basis for all interactions that a user has with a product, and can greatly influence its success. But understanding how to integrate within a team of diverse skill sets and still meet strict business goals can be a huge challenge.

That's where this course comes in. This is for any aspiring product designers who want to understand real, practical lessons and enter confidently into the tech world. Students will come away with a deeper understanding of how to deliver usable, meaningful and enjoyable digital products which leverage the power of machine learning. They will know how to communicate with stakeholders and technical developers in order to bring their designs to fruition. Students will be exposed to real case studies and examples of how these AI products have been used in the entertainment world, medicine, and SaaS communication tools. And from all of this, they can be better prepared for the transformation that is currently taking place.

Course Objectives

Upon completion of this course students will be able to:

- Adapt their designs to incorporate basic machine learning concepts
- Gain knowledge in building a comprehensive design system to quickly scale up
- Understand their role within an organization and how they support development
- Advocate for transparency and ethical use of models within an organization
- Understand the core components of a modern SaaS platform

Format of the Course

The course will run for 13 weeks with 3-hour weekly class and will consist of graduate level seminars and product design artifact critiques. Students will be expected to participate in classroom activities and should show up prepared (having completed any necessary readings, or consumed any relevant media requested). Throughout the course of the semester, students will deconstruct the UX design of AI-driven SaaS products, using the principles taught in class, complete individual and/or team-based assignments, and deliver a final team-based (1-4 students) comprehensive Presentation and accompanying demo. The course is capped by a final class presentation of each team's project.



Course Schedule

The course will run on Thursdays, 4pm – 7pm, May 15 – August 7, 2025. The following schedule outlines most of the topics covered during the course. Based on discussions with students as well as topics covered in parallel courses, some topics may be added or modified during the semester at the discretion of the instructor.

Class	Topic
Week 1 (Thursday, May 15)	What are the fundamentals? What is a product designer? Overview: Product Design, UX and definitions. Objective: Understand what qualities are needed for a career in product design and how AI is reshaping the industry.
Week 2 (Thursday, May 22)	What is machine learning and which technologies can you leverage? Overview: Machine learning (LLMs, diffusion models, fine tuning) and how it's used to support many of the new startups today. Objective: Gain an understanding of the unique AI tools available today to enrich modern products.
Week 3 (Thursday, May 29)	What is the problem you're trying to solve, and for whom? Overview: Asking the right questions, doing market research and mapping out discovery tools. Object: Learn about how to conduct User Research, personas and the JBTD framework.
Week 4 (Thursday, June 5)	Sketching out the hypothesis? Using the right tools to make your ideas concrete. Overview: User Centred Design, wireframing, user stories and flows. Objective: Learn how to map out your assumptions to better guide the user along the right path. <i>Assignment #1 is due.</i>
Week 5 (Thursday, June 12)	What are the ethical implications and limitations of AI today? Overview: False information, privacy, inaccuracy and computing costs. Objective: Learn how to design a system which respects the user's privacy and supports transparency.
Week 6 (Thursday, June 19)	How can you test your prototype and evaluate assumptions? Overview: The importance of getting early tests in front of users to continuously evaluate your assumptions. Objective: Learn which tools are available to build a clickable prototype and write a proper user testing script.
Week 7 (Thursday, June 26)	What is the importance of UI Design and Accessibility? Overview: How final design deliverables impact the development team and life cycle of a product.

	Objective: Learn about what makes compelling visuals, the importance of brand and how to make the product more accessible. <i>Assignment #2 is due.</i>
Week 8 (Thursday, July 3)	How can you work with developers and hand off designs to be built properly? Overview: Specs, Sprint Planning and Agile. Objective: Learn what helps developers build it right with the right design deliverables.
Week 9 (Thursday, July 10)	What is a Design System? How does it help your company scale? Overview: Typography, Colours and Atomic Design. Objective: Learn how to design smart, scalable components for maximum re-usability.
Week 10 (Thursday, July 17)	The business side: How are modern SaaS products built & marketed? Overview: Growth, APIs, and monetization Objective: Understand the business and financial choices which impact the design of an AI product.
Week 11 (Thursday, July 24)	How can you build a portfolio and get a job as a Product Designer in 2025? Overview: Portfolio sites, writing case studies and best practices for interviews. Objective: Learn how to make your work shine and attract interest from potential employers.
Week 12 (Thursday, July 31)	Working Session Overview: Group collaboration on their final presentations. Objective: Finalize group slides and deliverables for their project.
Week 13 (Thursday, August 7)	Final Presentations Overview: Groups will present their pitch for an AI- driven startup, focusing on design deliverables. Objective: Pitch their AI product to a fictional group of investors and explain why it matters. <i>Assignment #3 is the presentation.</i>

Assignments & Final Project Evaluation:

- **Assignments** are designed to reinforce individual learning and application of course concepts, with feedback provided to encourage improvement.
- **The Final Presentation** encourages teamwork, application of comprehensive course content, and presentation skills, culminating in a showcase of students' abilities to design innovative products that significantly feature an existing AI technology. Grading is based upon how well students clearly define the problem, explain how their product addresses this problem in their design, and how well they can articulate the value that AI has contributed to the final output.

This course is structured to further build on foundational knowledge, apply learning through practical assignments, and culminate in a collaborative project that showcases students' ability to innovate in the field of product design using AI.

Course Assignments

Note: Assignments, due dates, and weighting are subject to change before the start of the semester

Assignment	Due Date	Weight	Details
Assignment #1	Week 4	15%	Product Design Critique
Assignment #2	Week 7	35%	Prototype Review
Assignment #3	Week 13	35%	Final Presentation
Class Participation	Week 1 – 13	15%	<i>Contribution to class discussion, participation and group activities.</i>

Note on assessment: unless specified, a student's grade will be based on their individual contribution to team assignments and presentations.

Recommended Readings

Recommended readings will be provided in the course notes for students interested in delving deeper into the course content.

- Escaping the Build Trap – *Melissa Perri*
- Get Agile – *Pieter Jongerius*
- Atomic Design – *Brad Frost*
- Designing Interactive Systems: A comprehensive guide to HCI, UX and interaction design – *David Benyon*

Attendance and Participation

Regular attendance is expected of students in all their classes (including participation, group work, tutorials, seminars, online etc.). Students who are unavoidably absent due to illness or disability should notify their instructors of their situation.

- Students are expected to attend every class on the schedule (based on their assigned group) and be fully present. While sickness is sometimes inevitable, understand that due to the experiential nature of the material, classes cannot be made up.
- Lateness also informs grading. Classes start punctually every week according to the schedule. Instructions will not be repeated, nor will it be tolerated if a latecomer bothers another student for instructions. If arriving later than half an hour into a class, a student may be marked as absent.
- Due dates: Assignments granted an extension beyond the due date will have no extended comments; assignments handed in late without prior permission will be returned with a grade only, no comments, and 2% per day late, including weekends (i.e., 4% for Saturday and Sunday),

deducted from the grade assigned to your paper. Assignments submitted after the assignment has been returned to the rest of the class will not normally be accepted.

<https://www.sfu.ca/students/enrolment-services/policies-and-procedures/academic-concessions.html>

Grading Profile

A+	95-100	Exemplary expectations
A	90-94	Exceeding expectations
A-	85-89	Meet expectations
B+	80-84	Approaching expectations
B	75-79	
B-	70-74	Below expectations
C	60-69	Far below expectations
F	0 – 59	Fail (Students must retake the course).

A student in a master's or doctoral program must maintain a CGPA of 3.0. Under no circumstances will a student whose CGPA is below 3.0, be awarded a graduate degree.

<https://www.sfu.ca/students/advising-resources/calculators/gpa-calculator.html>

Laptops & Cell Phones

The use of laptops and cell phones during class is at the discretion of the instructor. *Please respect your classmates and instructors and refrain from text messages, social media, games and videos during class and workshop times.* Please note you should always bring pen and paper to class.

Written & Spoken English

English is the official language of the school and all communication (written and spoken) is expected to be conducted in English. SFU and the MDM Program provide a wide range of free language support for those who need and it's up to each learner to seek that support.

Accommodations

The university accommodates students whose religious obligations conflict with attendance, submitting assignments, or completing scheduled tests and examinations. Please let your instructor know in advance, preferably the first week of class, if you will require any accommodations on these grounds. The Centre for Accessible Learning (CAL) will make every effort to assist students with disabilities so that they achieve their educational goals. <https://www.sfu.ca/students/accessible-learning/establishing-accommodations/accommodation.html>

Academic Integrity: Your Work, Your Success

SFU's Academic Integrity website <http://www.sfu.ca/students/academicintegrity.html> is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating.

Each student is responsible for their conduct as it affects the university community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the university. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the university. <http://www.sfu.ca/policies/gazette/student/s10-01.html>



If you are using generative AI to produce content that will be part of your graded work in the course, you must be transparent about the tools that you use. Undeclared use of the tool/technology will be considered a violation of the academic integrity policy. Be aware that any tool used will require you to evaluate the output for accuracies and be responsible for making the appropriate corrections.

Inappropriate use of technology in coursework

If you are using any technology, including generative AI, to produce or edit content that will be part of your graded work in the course, you must be transparent about the tools that you use. Undeclared use of the tool/technology will be considered a violation of the academic integrity policy. Be aware that any tool used will require you to evaluate the output for accuracies and be responsible for making the appropriate corrections.

Graduate Studies Notes

Important dates and deadlines for graduate students are found here: http://www.sfu.ca/dean-gradstudies/current/important_dates/guidelines.html.

