

# Designing for Defense (D4D) 2023

ASEN 5519 / CSCI 5550 / CYBR 5550

## Instructor Information

This course uses a team teaching model and “flipped classroom” concept. Students will interact with all of the instructors listed below. Most class presentations will be given by the students with the instructor team providing critiques, advice, and insights.

### Teaching Team:

Andy Meyer: [meyerandy1228@msn.com](mailto:meyerandy1228@msn.com) (preferred), or [andrew.f.meyer@colorado.edu](mailto:andrew.f.meyer@colorado.edu). Phone :, Office Hours: Virtual and by appointment.

## From your Teaching Team

This course teaches student how to develop and test hypotheses in order to **solve real-world Department of Defense (DoD) and Intelligence Community (IC) problems**.

Student teams will learn how to develop and deploy solutions for the DoD/IC community. Each team is assigned one problem from an existing set of provided by the DoD/IC community and will work on that problem throughout the semester. Each week the teams are expected to interview six or more potential project beneficiaries (typically military and government end users), produce and update a Mission Model Canvas, produce and update a Minimal Viable Prototype.

Each week the teams present their outcomes along with updated Mission Model Canvas (MMC) and Minimum Viable Product (MVP). At the conclusion of the course students will have been challenged to:

1. Solve complex real-world problems
2. Rapidly iterate technology solutions while searching for product-market fit
3. Understand all the stakeholders, deployment issues, costs, resources, and ultimate mission value
4. Deliver MVPs that match customer needs in an extremely short time, and
5. Produce a repeatable model that can be used to launch other potential technology solutions.

You were enrolled in Designing for Defense through competitive selection. We consider you to be elite and expect you to behave as elite. You will exercise considerable autonomy in this course, deal with sensitive information, and interact with stakeholders who have real-world

missions with potentially lethal consequences. These stakeholders have volunteered their time, at cost from other national security activities, to interact with you, and through you, with the University of Colorado Boulder. This course demands maturity. Please understand that we cannot, and thus will not, tolerate less. Exercise your judgment, and feel free to discuss with your instructors at any time.

The challenges are varied: some seek a technical solution, others ask difficult contemporary policy questions, still others need business process improvement. But no matter the challenge, the course will be driven by your ability to understand and intellectually empathize with real-world national security professionals and apply entrepreneurial methods to envision novel solutions.

Success in our course consists of two items; all other considerations, however valuable, remain secondary.

- First is our ability, through your creativity and insight, to provide **value to our national security sponsors**.
- Second is our ability to provide **value to our students through a unique, applied, and real-world experience in entrepreneurship, innovation, and civil-military relations**.

For most of you, this will be as close as you get to your national security community. Enjoy it! We look forward to hearing what you learn, thinking through the challenges with you, and seeing what you build.

Be Brilliant,

Andy

## Learning Goals

A key overarching goal of the course is for students to learn how to develop and test hypotheses related to a challenging problem. The course emphasizes the need to rapidly evolve a strategy and emphasizes the importance of “search” as part of a business model. The course will specifically focus on the following three (3) primary learning goals throughout the term:

1. Understand how to **interview stakeholders** and adapt a project plan based on interview results
  - Students will conduct a minimum of six interviews per week, learn and practice interviewing skills, and learn to capture interview outcomes.
  - Based on the interview outcomes, students will learn how to adapt project directions
  - Students will learn how to **apply interview results to business value proposition** and a minimum viable prototype.
2. Understand how to develop, iterate, and present a Value Proposition (**VP**) and Mission Model Canvas (**MMC**).
  - The approach taken in this course is based on the **Lean LaunchPad** model.

- Students will learn how to develop a mission directed Value Proposition Canvas (**VPC**).
  - Students will learn how to adapt a business model canvas into a mission model canvas that is better suited to the Department of Defense and Intelligence Communities.
3. Understand how to rapidly develop and demonstrate a Minimum Viable Product (**MVP**).
- Students will learn how to construct an MVP that demonstrates the key ideas behind a Value Proposition.
  - Students will learn to demonstrate MVPs to a wide range of stakeholders.
  - Students will learn how to iterate an MVP based on lessons learned.

## Course Schedule

Please refer to Canvas for updated information. The **course schedule will be modified as required based on our progress**. Roughly speaking, the course will consist of **three phases**.

1. **Lecture**: In the first (approximately) seven weeks, we will learn how to deploy the **tools for applying startup methods** to national security problems. In this first phase teams will be providing the class with a **status update** each week.
2. **Process**: During the middle period, teams will **present on their evolving hypothesis**, decisions on persevere/pivot, interviews, and prototype development. These weekly in-class presentations will be much more like a “pitch”.
3. **Final Pitch**: In the final weeks, we will focus on the strength of your **final pitch as well as presentation of your product/solution to your sponsor’s organization**.

## Textbooks and Materials

Textbooks:

1. **Business Model Generation** by Alexander Osterwalder and Yves Pigneur; Publisher: John Wiley and Sons; 1st edition (July 13, 2010); ISBN-10: 9780470876411; ISBN-13: 978-0470876411
  - Free at [http://alvarestech.com/temp/PDP2011/pdf/Business%20Model%20Generation%20\(1\).pdf](http://alvarestech.com/temp/PDP2011/pdf/Business%20Model%20Generation%20(1).pdf)
2. **The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company** by Steve Blank and Bob Dorf; Page Numbers Source ISBN: 0984999302; Publisher: K&S Ranch (January 12, 2014)
  - Please purchase.
    - Kindle version is \$9.
    - Used copies available online.
3. **Value Proposition Design** by Alexander Osterwalder.
  - Free at <http://noahc.me/Value%20Proposition%20Design.pdf>

# Assignments

Outside of class, you will be expected to conduct the following:

- **Weekly Beneficiary Interviews:** Your team is expected to **conduct six to ten interviews per week**, starting in Week 2. Your team is responsible for scheduling interviews and must contribute to identifying interview candidates.
- **Weekly Mission Model Canvas Updates:** After Week 2, your team must provide a **weekly update to your Mission Model Canvas (MMC)**. Each week emphasizes a different aspect of the MMC and you are expected to fill in a portion. The entire canvas should be updated each week.
- **Weekly Value Proposition Updates:** After Week 2, your team must provide a weekly update to your Value Proposition. The week's Value Proposition should reflect work being carried out that week.
- **Weekly Presentations:** Each week your team will give a presentation to the class describing your lessons learned (primarily through beneficiary discovery interviews), progress on your MMC, and your MVP demo.
- **Evaluations of your Fellow Teams:** Each week your team will provide meaningful, critical commentary to the teams who pitched that week. That written feedback must be submitted to Canvas within 24 hours of the completion of each class.

# Grading

There will be no tests or quizzes. You will be graded, by your **instructors** and your **peers**, as outlined in the matrix below. We will discuss this in class. Your grade is dependent upon **your effort in the class**, your **contribution to your team**, and **your contribution to the other teams** who are part of this class. Your grade will **not** depend upon the behavior of your DoD sponsor, or your ability to solve their particular challenge. We will assess the effort, creativity, and teamwork you displayed in attempting to meet that goal.

Of **300 possible points**, they will be assigned as outlined below:

1. **Your Class participation as an individual (75 points)**
  - a. You will be assessed, by the **instructors (25 points)** and your **team members (50 points)** on your contributions to the course
2. **Your Team's performance in following the D4D Methodology (125 points)**
  - a. You will be assessed on the quality of your application of the Lean Launch method (or your modification of it), the quality of your process briefings, the intelligence of your pivot/persevere decisions, and the robustness of your interviews.
3. **Your Team's Performance in Final's Week Pitch/Presentations (100 points)**

- a. You will be assessed, as a team, on:
- i. The quality of your **final pitch** at the D4D Finale
  - ii. The final **Zoom call presentation to your sponsor**
  - iii. The final **product/solution deliverable** (your MVP) as presented to your sponsor in the final conference call

D4D - Spring 2022							
Scoring Mechanism							
Total Possible	Description	From Instructor or Classmate?			Assessed to Individual or Team?		
		Instructor assigned	Classmate assigned	Total	Individual Score	Team Score	Total
50	Instructor's score for your team's <i>weekly update presentations made in class</i> .	50		50		50	50
25	Instructor's <i>assessment of reviewing team's scoring</i> of presenting teams.	25		25		25	25
25	Instructor's assessment of your <i>individual contribution to the class</i> .	25		25	25		25
100	Instructors' assessment of your team's <i>final video pitch and final product deliverable</i> .	100		100		100	100
50	Other teams' scores for your team's <i>weekly update presentations made in class</i> .		50	50		50	50
50	Your team mates' assessment of your <i>individual team contribution</i>		50	50	50		50
<b>300</b>	<b>Total</b>	<b>200</b>	<b>100</b>	<b>300</b>	<b>75</b>	<b>225</b>	<b>300</b>

If you have any questions about your grade or how you are being assessed, please do not hesitate to contact your instructors. If you have extenuating circumstances and are unable to meet an important deadline, please contact one of us directly to work out a resolution on a case-by-case basis.

## Classroom Behavior

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the [classroom behavior](#) policy, the [Student Code of Conduct](#), and the [Office of Institutional Equity and Compliance](#).

## Requirements for COVID-19

As a matter of public health and safety, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements and all public health orders in place to reduce the risk of spreading infectious disease. CU Boulder currently requires COVID-19 vaccination and boosters for all faculty, staff and students. Students, faculty

and staff must upload proof of vaccination and boosters or file for an exemption based on medical, ethical or moral grounds through the MyCUHealth portal.

The CU Boulder campus is currently mask-optional. However, if public health conditions change and masks are again required in classrooms, students who fail to adhere to masking requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct and Conflict Resolution. For more information, see the policy on classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the "Accommodation for Disabilities" statement on this syllabus.

If you feel ill and think you might have COVID-19, if you have tested positive for COVID-19, or if you are unvaccinated or partially vaccinated and have been in close contact with someone who has COVID-19, you should stay home and follow the further guidance of the Public Health Office ([contacttracing@colorado.edu](mailto:contacttracing@colorado.edu)). If you are fully vaccinated and have been in close contact with someone who has COVID-19, you do not need to stay home; rather, you should self-monitor for symptoms and follow the further guidance of the Public Health Office ([contacttracing@colorado.edu](mailto:contacttracing@colorado.edu)). {Faculty: insert your procedure here for students to alert you about absence due to illness or quarantine. Because of FERPA student privacy laws, do not require students to state the nature of their illness when alerting you. Do not require "doctor's notes" for classes missed due to illness; campus health services no longer provide "doctor's notes" or appointment verifications.}

## Accommodation for Disabilities

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu) for further assistance. If you have a temporary medical condition, see [Temporary Medical Conditions](#) on the Disability Services website.

## Preferred Student Names and Pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

## Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the [Honor Code](#). Violations of the Honor Code may include, but are not limited to: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without

permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution ([honor@colorado.edu](mailto:honor@colorado.edu)); 303-492-5550). Students found responsible for violating the [Honor Code](#) will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found on the [Honor Code website](#).

## **Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation**

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, protected-class discrimination and harassment, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who believe they have been subjected to misconduct can contact OIEC at 303-492-2127 or email [cureport@colorado.edu](mailto:cureport@colorado.edu). Information about university policies, [reporting options](#), and support resources can be found on the [OIEC website](#).

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of any issues related to these policies regardless of when or where they occurred to ensure that individuals impacted receive information about their rights, support resources, and resolution options. To learn more about reporting and support options for a variety of concerns, visit [Don't Ignore It](#).

## **Religious Holidays**

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance.

See the [campus policy regarding religious observances](#) for full details.