Designing for Defense (D4D) Fall 2024
ASEN 5550-800;CSCI 4830; CSCI 5550; CYBR 5550

Instructor Information

This course uses a team-teaching model and "flipped classroom" concept. Students will interact with the instructor listed below as well as their TAs, DoD/IC Sponsors, and their mentors. In-class presentations will be given by the student teams with the instructor/TA/Sponsor/Mentor team providing feedback, advice, and insights.

Teaching Team:

Andy Meyer

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 four (4) primary learning goals throughout the term:

1. Understand how to work effectively as part of an interdisciplinary team dedicated to solving a complex, real-world problem for the sake of delivering a product/solution to your sponsor that is:

    o Unique

    o Delivers great value than anything else available to your sponsor

    o Is deployable

    o Is sustainable in the long-term

2. Understand how to **interview stakeholders** and adapt a project plan based on interview results

    o Students will conduct a **minimum** of six interviews per week, learn and practice interviewing skills, and learn to capture interview outcomes.

o   Based on the interview outcomes, students will learn how to adapt project directions

o   Students will learn how to **apply interview results to business value proposition** and a minimum viable prototype.

3. Understand how to develop, iterate, and present a Value Proposition (**VP**) and Mission Model Canvas (**MMC**).

o   The approach taken in this course is a based on the **Lean LaunchPad** model.

o   Students will learn how to develop a mission directed Value Proposition Canvas (**VPC**).

o   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.

4. Understand how to rapidly develop and demonstrate a Minimum Viable Product **(MVP)**.

o   Students will learn how to construct an MVP that demonstrates the key ideas behind a Value Proposition.

o   Students will learn to demonstrate MVPs to a wide range of stakeholders.

o   Students will learn how to iterate an MVP based on lessons learned.

o   Students will make a professional presentation of their MVP to their sponsor's organization.

Course Schedule

1. 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**.
    a. <u>Lecture</u>: 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.

    b. <u>Process</u>: 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".

    c. <u>Final Pitch</u>: 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.*

2. You will find a more detailed weekly breakdown of the plan for each week by referring to "***D4D Fall 2024 Syllabus Development Spreadsheet – 081324.xlsx***" which you will find posted in Canvas.

Textbooks and Materials

There will be a few readings that will be assigned from three different text books. Those are:

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

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)

3. ***Value Proposition Design*** by Alexander Osterwalder; Published by John Wiley & Sons, Inc.; ISBN 978-1-118-96805-5 (paper); ISBN 978-1-118-96807-9 (ebk); ISBN 978-1-118-96806-2 (ebk); ISBN 978-1-118-97310-3 (ebk)

Here are some hints regarding how you might choose to access these three textbooks:

- The first book (***Business Model Generation***) can be downloaded in PDF format for free by going to http://alvarestech.com/temp/PDP2011/pdf/Business%20Model%20Generation%20(1).pdf . I have downloaded it from this site, and it seems to work relatively well, so there seems to be no need for students to purchase it if they want to avoid that.

- The second book (***The Startup Owner's Manual***) can be purchased on-line as either a Kindle download (about $24 through Amazon) at https://www.amazon.com/s?k=startup+owners+manual&i=stripbooks&crid=19UI56MZZQZF7&sprefix=startup+owners+manual%2Cstripbooks%2C110&ref=nb_sb_noss_1 or as an eTextbook from **Vital Source** for about $10 (for lifetime access) or for $4.00 (for 150 days of access) at https://www.vitalsource.com/products/the-startup-owner-39-s-manual-steve-blank-bob-dorf-v9780989200547 . The hardback version of this book lists for about $40, but you can normally find it for around $25 through Amazon if you want to own the physical copy.

- The third book (***Value Proposition Design***) can also be downloaded in PDF format for free by going to https://s3.tenten.co/share/Value-Proposition-Design-Book.pdf . Again, I have downloaded it and it works fine.

In summary, students should be able to gain access to all of the reading assignments for this course for anywhere from $4.00 to $24.00 in total if they take advantage of free PDF downloads and purchase an electronic version of The Startup Owner's Manual.

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*** (**100 points**)
    a. You will be assessed, by the **instructors (50 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.
        i. 50 points from your ***instructor's assessment*** of your team's ***weekly update presentations made in class***
        ii. 25 points from your ***instructor's assessment of the quality of your team's scoring of each of the presenting teams'*** weekly presentations.
        iii. 50 points from ***other teams' scores for your team's weekly update presentations*** made in class.

3. *Your **Team's Performance** in Final's Week Pitch/Presentations* (**75 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

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

As you can see from the table above, 200 out of the total of 300 points are assigned by your instructor, with the other 100 points being assigned by your classmates and your team's members.

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.

Every large, complex, public institution has prescribed statements that are required to be included in a document such as this syllabus. Here are the Syllabus Statements as required (or recommended) by CU Boulder:

Syllabus Statements

Classroom Behavior

Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure 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 Infectious Disease

Members of the CU Boulder community and visitors to campus must follow university, department, and building health and safety requirements and all applicable campus policies and public health guidelines to reduce the risk of spreading infectious diseases. If public health conditions require, the university may also invoke related requirements for student conduct and disability accommodation that will apply to this class.

If you feel ill and think you might have COVID-19 or if you have tested positive for COVID-19, please stay home and follow the guidance of the Centers for Disease Control and Prevention (CDC) for isolation and testing. If you have been in close contact with someone who has COVID-19 but do not have any symptoms and have not tested positive for COVID-19, you do not need to stay home but should follow the guidance of the CDC for masking and testing.

Accommodation for Disabilities, Temporary Medical Conditions, and Medical Isolation

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 for further assistance. If you have a temporary medical condition, see Temporary Medical Conditions on the Disability Services website.

This is an "in person" class, and as such students are required to attend each weekly class meeting. However, if you have a required medical isolation for which you require adjustment, please contact your instructor as well as the members of your student D4D team so that they are aware and can make appropriate accommodations and adjustments for your illness. Your instructor will advise you concerning any work that will need to be made up as a result of your absence.

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 (including use of paper writing services or technology [such as essay bots]), 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, 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. Visit Honor Code for more information on the academic integrity policy.

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 protected-class discrimination and harassment, sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, 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 have been subjected to misconduct can contact OIEC at 303-492-2127 or email 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 must inform OIEC when they are made aware of incidents related to these policies regardless of when or where something occurred. This is to ensure that individuals impacted receive outreach from OIEC about resolution options and support resources. To learn more about reporting and support for a variety of concerns, visit the Don't Ignore It page.

Religious Accommodations

Campus policy requires faculty to provide reasonable accommodations for students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please communicate the need for a religious accommodation in a timely manner to your instructor.

See the campus policy regarding religious observances for full details.

Mental Health and Wellness

The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact Counseling and Psychiatric Services (CAPS) located in C4C or call (303) 492-2277, 24/7.

Free and unlimited telehealth is also available through Academic Live Care. The Academic Live Care site also provides information about additional wellness services on campus that are available to students.