

# Software Projects for Community Clients I/II

Autumn 2021 – Winter 2022

Updated: September 10, 2021

## Catalog Description

*IT 394 is the first course in a two-quarter sequence (autumn/winter) for CDM students that satisfies both the Senior Year Capstone requirement and the Junior Year Experiential Learning requirement. The second quarter's class is IT 395. Students earn four hours of credit for each quarter for a total of eight hours of credit. You must successfully and consecutively complete both quarters to receive any credit. In this is community-based service-learning course, students will have the opportunity to assess urban community needs in technology, and use problem-solving methods and strategies to make a difference in an inner-city community group, usually by developing an application or web site.*

## Logistics

**Day and Time:** This is an online class. Teams meet weekly with the instructor. (Wed nights over Zoom)  
**Location:** Online over zoom and or phone  
**Course Website:** <https://d2l.depaul.edu>

## Instructor Information

**Name:** Michael H Chase  
**Office Hours:** Remote via zoom. Posted on BlueStar by first week of class & by appointment  
**Email:** [mchase2@cdm.depaul.edu](mailto:mchase2@cdm.depaul.edu)  
**Phone:** 312-362-1352 (Leave a message and your callback number)

## Course Learning Objectives

Students will:

- Apply the Agile development methodology to a project;
- Construct a technology solution to a problem or opportunity;
- Evaluate and prioritize system requirements based on resources;
- Build a “Minimum Viable Product (MVP)”; and deliver a finished product/project/solution to their client
- Examine the dynamics of a social and economic system defined by geographic boundaries.
- Present project artifacts to multiple audiences.

## This is an Online Class – with Weekly Zoom Team + Instructor Meetings

In- class students must have access to a laptop, MacBook or any other web ready device that you use write Word documents and work on content management websites and attend zoom meetings.

## Class Kickoff Zoom Meetings

**Attendance is required.**

Scheduled for September 15<sup>th</sup> 2021 between 1-4 pm and 6-9 pm.

All registered students attend the class kickoff zoom meeting held the first day of the quarter.

Registered IT 394 students attend one (1) virtual thirty-minute class kickoff meeting on September 8th. The instructor will start the zoom meeting every half hour starting at 1 pm until 4 pm.

There will be a break starting at 4 pm.

The zoom meeting will resume at 6 pm and go every 30 minutes until 9 pm.

The zoom meeting credentials are posted in our class D2L in the “[Class Kickoff Zoom Meeting](#)” sub-section, under the “[IT394 Getting Started -READ ME FIRST](#)” Getting started section.

## Liberal Studies Domain

IT 394/ IT 395 is included in the Liberal Studies program as a course with credit in the Junior Year Experiential Learning (IT 394) and Senior Year Capstone (IT 395) domains.

The Experiential Learning requirement engages students in the first-hand discovery of knowledge through observation and participation in activities, most often in field-based settings outside the classroom. This inductive process of “learning by doing and reflecting” is supported by theory-based information. Students compare and analyze issues, problems, and ideas through the lenses of their own personal experiences and evolving intellectual worldview.

The Capstone provides students with an opportunity to integrate their major area of study with broader issues raised in their general education program. The Liberal Studies Capstone experience allows students to see the relationship between the ideas, perspectives, and substantive areas of scholarship and creative work within their major field and those learned through significant aspects of their course work in the learning domain courses and other courses and experiences of the Liberal Studies Program.

## JYEL Course Learning Objectives

Students will be able to:

- Apply particular concepts from readings, lectures, etc. to an analysis of lived experiences in the settings provided by the course.
- Use the experiences provided by the course to construct and articulate the impact of their experiences on their understanding of course content.
- Demonstrate an understanding of ethics appropriate to their experiential placement.
- Use their new understanding to make decisions and solve problems related to the course, whether in the setting provided by the course, or in other assignments.

## JYEL Writing Requirements

Students will be expected to complete multiple written assignments. This outcome will be met through reflective writing assignments, and essays based on required reading and guest speakers.

## Capstone Course Learning Objectives

Students will be able to:

- Apply one or more theories or concepts from courses within their major to an analysis of a particular issue relevant to the major.
- Discuss an idea, method or concept from a discipline outside their major field of study to an analysis of a particular issue relevant to their major field of study. This may include identifying perspectives and/or values of the major field, and comparing them with those of one or more disciplines outside the major.

## Capstone Writing Requirements

Students will be expected to complete a minimum of 10 pages of writing for this course.

## Required Text

Debugging Teams – Brian Fitzpatrick (PDF provided on D2L)

Online resources will also be used. Additional information will be provided in class and on the D2L course site.

## Assignments – Artifacts and Documents

1. **Participation** – individual and team grade participation points are earned each class through peer and client review.
2. **Five Individual Writing Assignments – Reflections** – One individual assignment weekly.
3. **Team Peer Review** – Team evaluates itself
4. **Client Review of Team** – Client evaluates the team
5. **Project Deliverables - Team Project Documents:**

Team Introduction Document

Team Charter: This document defines your team practices and procedures

Problem Statement

Product Vision Board

High-level Project overview and list of appropriate project deliverables

SEO Schema (For Applicable Projects)

CMS Security Audit and Improvement Recommendations (For Applicable Projects)

### **Weekly Team Project Documents:**

Weekly Status Reports – Weeks 1-10

Meeting Agendas and Minutes

### **Weekly Team Agile Artifacts:**

Product Vision Board: This document helps Agile teams capture the vision.

CMS or CRM Justification: This document includes the justification for selecting a CMS or CRM product or tool.

**This justification document is only required if the project is a CMS project and the CMS tool is to be determined.**

Product Backlog: Prioritized features list containing a short description of all functionality desired in the product.

User Stories with Acceptance Criteria: User stories represent a small piece of business value that a team can deliver in a sprint. These artifacts are used in SCRUM Agile projects.

Test Plan Results – Used during the sprint to test the work. Completed with expected and actual results.

Sprint Backlogs: The tasks from the Product Backlog that will be completed during the sprint.

**Disaster Recovery Documents:**

Website Content Document – A collection of site screen captures and all site content and settings

Assets Manifest – A list of all images and social media settings

**Client Web Hosting Requirements:**

Deployment Document: This document is required for CMS/CRM migrations.

Training Guide(s) This document illustrates the required steps to maintain the site.

All Agile artifacts are living documents. This means they can be updated, re-evaluated and re-graded. In IT394, teams can resubmit artifacts up to 3 times. In IT395, artifacts are submitted once for evaluation and grading. Assignment Grade percentages differ between IT394 and IT 395 and are posted on D2L.

Not all agile artifacts apply to every project. Please contact the instructor to resolve any issues or questions you or your team have about required documents or agile artifacts ASAP.

Each team is responsible for reviewing project deliverables, including project documents and agile artifacts and work with the instructor, client, and team members to determine which artifacts apply to your project.

## Participation and Performance

Class is online. Each week, teams meet with their client and with the instructor.

The client meeting is a working meeting.

The instructor meeting is a weekly project review and chance to talk about the project, discuss and attempt to resolve any issues.

Team status reports are due the morning of their team + instructor zoom meeting.

Attending meetings and being an active participant in them helps keep the project moving forward.

Students are expected to have completed assignments and discussion question(s) before attending meeting.

Commenting, providing feedback, and helping to create and keep a forward project momentum is an important part of being a good team member.

All students attend team status meetings via Zoom meeting.

Client working meetings are at the discretion of the team and client.

Performance is based on participation, peer review, and project performance.

## Pass/Fail

Pass/Fail is not an option in this capstone class.

## Project Teams – Assignment and Virtual Meetings

IT394-IT395 is a project and Agile team-based class.

Project teams are established by the instructor prior to the first weeks zoom class.

At the start of the fall quarter, each team must meet, collaborate, exchange contact information and as a team select from a D2L list of weekly team + instructor time slots.

If all team members cannot attend the team + instructor meeting, then It is the responsibility of the attending team members to keep anyone who missed informed.

**Teams formed in IT 394 work the same project for both quarters.**

## Project Teams – Changing Teams

Students who wish to be on a different team must complete and email a Change of Team Request to the instructor. Changes are not guaranteed and may be denied based on team size and staffing needs.

Students should discuss a change with the instructor and their team before submitting the change request form.

## Teamwork and Agile Methodology Development Practices

IT394-IT395 is a project and team-based class.

If you want to review your Agile methodology development practices and skills learned in IT 280, please refer to the class D2L Agile refresher section for links on Agile training and learning content.

to their teams and project.

The goal of learning Agile development practices is to deliver value at a rapid pace.

Compared to traditional development teams, Agile teams are:

- More productive
- Create higher quality products
- Satisfy clients more consistently

As a project team member, you will learn how to collaborate.

Collaboration:

- Solves problems
- Clarifies changes
- Builds consensus
- Creates cohesion

When the team and client have a shared understanding of the goals, they are more likely to achieve the desired results. The most effective software development teams make collaboration and other Agile best practices their standard way of working.

### **Why we use Agile Teams:**

Traditional software development follows the classic waterfall methodology, where teams develop a detailed project plan, then launch into a linear, step-by-step development process with set deadlines and no deviations.

Instead of planning the entire project up front, Agile teams plan continuously throughout the project, making adjustments as changes arise.

Planning two to four weeks out is acceptable and is actually done in the real world.

Organizations operating in dynamic market environments need Agile teams who can work within short development cycles to achieve a faster time-to-market.

Agile teams are desirable because they are more innovative, adaptable and responsive to rapidly changing conditions.

Using methods designed to produce frequent, high-quality, sustainable releases, your Agile teams will deliver tested, working software in one-week iterations.

## Team Communication and Collaboration Best Practices

Team members will treat each other with dignity and respect.

An Agile team is a tight-knit group of highly skilled people working together on a project.

Team members will learn to speak the same language, no matter what their discipline.

You will put ego aside to ask for and accept help, and share accountability for the outcomes, both the successes and the failures. As a team, you will learn from every iteration, continuously adding to the list of Agile best practices that guide them.

Agile Values, Principles, and Practices:

Agile projects are driven by a shared commitment to the values, principles and practices that define the Agile methodology.

Teams will follow Agile Manifesto principles:

1. Our highest priority is to satisfy the client through early and continuous delivery of working software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the client's competitive advantage.
3. Deliver working software frequently.
4. Business people and developers must work together throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. **Working software is the primary measure of progress.**
8. Agile processes promote sustainable development.
9. Continuous attention to technical excellence and good design enhances agility.
10. The best architectures, requirements, and designs emerge from self-organizing teams.
11. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

**Teams will collaborate with the client on a weekly basis.**

The client is satisfied when requirements are fulfilled and expectations are met.

Software developers must come up with various ways to discover what the client wants and to deliver exactly that. Traditionally, teams record user requirements at one end of the funnel, and then deliver the product at the other end with negligible client interaction in between. An Agile team is in near-constant communication with the client, clarifying expectations, collaborating on fixes, and communicating options not previously considered. This frequent interaction between the team and the client is what promotes creativity and heightens quality. The best teams manage the risk of clients coming back with too many changes by collaborating on how to satisfy their demands. Together, they devise a better way to make the product do what users want it to do. It may not work the way the client initially envisioned, but it will function in a more innovative and sustainable way.

Teams succeed when they collaborate as a cohesive unit.

Agile teams will utilize the following six components of Teamwork Quality:

- Communication
- Coordination
- Balance of team member contributions
- Mutual support
- Effort
- Cohesion

Agile teams operate on the assumption that **individuals accomplish more when they rely on each other**, than when they rely upon the processes and tools that are the mainstays of software development.

Working together empowers and emboldens teams to take the imaginative leaps that produce truly innovative software.

## CMS Extension Selection Best Practices

In WordPress extensions are themes and plugins. In Drupal extensions can be JS Libraries, themes, or modules. In Joomla and other CMS tools they can be packages. Whatever extension you are selecting for your client and project, you must follow the following best practices:

1. Extension selection starts with a conversation with the client in which they provide the functional requirements for the extension. What do they want it to do? Do they have a budget or are we restricted to selecting only no cost extensions?
2. Teams must publish the notes and write up an extension requirements based on the meeting mentioned in the previous item.
3. Teams must review the feature and functional requirements comparing several extensions and prepare a feature analysis (GAP Analysis) report for the client.
4. feature analysis (GAP Analysis) report must contain a conclusion and recommendations.
5. Publish all feature comparison (GAP Analysis) reports on D2L
6. Do not recommend freemium extensions. These are plugins that have a no cost version and a for cost version. We have been burned in the past with these types of plugins that do not allow updates or upgrades without upgrading to the premium (for cost) version.

7. If your team is working on a development environment or platform, if the extension only supports a one-time non-transferable registration, you should recommend purchasing two versions of the plugin, so we have version ready to use when we migrate the site to the client's web host account.
8. The client and or stakeholder makes the decision
9. The client, not the team, purchases any extensions that cost money.

**Selecting Extensions Anti patterns:**

Please avoid the following when selecting CMS extensions:

1. Teams do not make the decision, the client does and it's based on your research, feature comparison, and recommendations.
2. Do not select a plugin just because you have experience with it. Do the research and create a feature comparison report for each and every plugin used on your CMS site.
3. Your class instructor does not do your research, recommend, or select extensions.

**CMS Contact Forms:**

Team projects that implement a contact form must takes steps to protect their client's CMS website contact forms from SPAM. This can be achieved through implementing plugins, like Askimet, and using HoneyPot fields and Captcha.

**CMS Registered Plugins:**

Team projects that implement plugins that require registration please note. If you register a plugin to a development domain name and URL, your team is responsible for recording the plugin name and registration information and verifying the plugin is migrated correctly and successfully from its development to production environment.

## Scrum vs. Kanban

Scrum and Kanban are both Agile frameworks used to manage Agile projects. They are slightly different in their approach to running a project. Each team will choose a Framework that best suits their team and project. Teams can change frameworks during the class. Teams may also elect to use a web based Agile project management tool. Information on Agile frameworks and project management tools are on D2L.

## Team Roles

Each team will have volunteers to serve as team lead, communications officer, and engagement officer. These roles are not meant to be permanent. Team members should spend time in each role throughout the quarter. Team role descriptions and responsibilities are listed on the class D2L site.

## Report Incidents to the Class Instructor

Agile is based on openness, honesty, and transparency. Agile team members treat each other with dignity and respect.



If you are ever disrespected or mistreated by anyone in class, please contact the instructor to discuss the incident and your concerns as soon as possible.

Also, please download and fill out a D2L Incident Report and email it to the instructor.

In the incident report please give a thorough account of what happened.

It is crucial to describe the incident clearly, and submit the report as an email to the instructor.

The instructor will attempt to resolve the incident and may forward the incident details to the Dean of Students for additional guidance and assistance.

## Removing Team Members

**Teams formed in IT 394 work the same project for both quarters.**

Teams with underperforming team members may elect to have team members removed from the project.

To do so, the team must document the reasons for removal. Teams must submit a D2L **Team Member Removal Request Form** and meet with the instructor to review their case. The instructor must approve the action. Not all case reviews result in a team member being removed.

Team members removed from a team may be reassigned to a different team or a different project, if possible.

If reassignment is not possible, **students who have been removed from a team may receive a failing grade for this class** and will not return for IT 395.

## Assignment and Agile Artifact Grading

Writing assignments and artifacts are due on their assigned date and time.

Due dates and times are listed in D2L.

Not all artifacts apply to each team project. If an artifact is not part of your team project, contact the instructor to have it marked as exempt for your team.

Agile projects are dynamic and can experience delays in your team's ability to produce certain Agile artifacts by their D2L due dates and times. If this happens, contact the instructors and they will modify the D2L artifact initial due dates of the effected artifacts, so they are not marked as late.

**Late project assignments receive the following percentage point deductions:**

Less than an hour late:-5%

Between 1 and 3 hours late: -10%

Between 3 and 10 hours late: -20%

Anything over 10 hours late: -30%

**Late individual reflection assignments receive the following percentage point deductions:**

Less than an hour late:-5%

Between 1 and 3 hours late: -10%

Between 3 and 10 hours late: -20%

Anything over 10 hours late: -30%

## Weekly Team + Instructor Meeting (Zoom – Beginning 2<sup>nd</sup> week of class)

Weekly Team + Instructor Meetings:

Teams select a time slot during the first week of class.

Weekly Team + Instructor meetings start the second week of class:

**Wednesdays starting September 15th, thirty (30) min meetings between 1-4 pm or 6-9 pm.**

Please Be on time for zoom meetings.

Teams that are late to a weekly team meeting, receive a 2% grade deduction per incident.

Individuals who are habitually late will received participation overall grade reductions of up to 20%.

Available students attend weekly team + instructor meetings via Zoom meeting.

We will use the same Zoom link for each class quarter.

The Zoom links are different in the two classes IT394 and IT395.

If no one from the team attends the weekly team + instructor meeting, the team receives a grade deduction.

Teams who do not attend a weekly team + instructor meeting will receive a 10% deduction from their class grade.

Teams that miss four (4) or more weekly team + instructor meetings will fail the class.

If you are absent or late to meetings, for any reason, it is your responsibility to contact your team and get caught up.

The instructor will not contact you.

**You must take the initiative.**

## Content Management System (CMS) Projects

Teams working a content management system project will develop their CMS website on their own host or work with the instructor on utilizing DePaul's GoDaddy account.

Teams will keep their websites up to date during development. Up to date means that you will keep the CMS core and plugins/modules and themes up to date throughout development.

WordPress sites will be kept lean by removing unused plugins and themes.

Toward the end of IT394, teams will migrate their CMS sites to a DePaul owned web host. CMS site migration how to documentation will be provided to teams. During site development, if required, teams will work with clients to select and purchase a web host. Existing web hosts will be reviewed that they support the finish product and support a site migration. At the end of the project, teams will work with their clients to migrate the development website to a client owned web host.

## Incomplete and FX Grades

Incompletes are typically not granted for this class.

Grades of Incomplete are given only in cases of medical emergency or other highly unusual emergency situations.

University guidelines require that you must be earning a passing grade in order to request an incomplete.

To request an incomplete, please visit the CDM grading policies web page at <http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx>

Incompletes revert to an **F** if they are not resolved within one quarter.

## R Grade at the end of IT 394

IT 394 is initially graded as an “R” in the grading system.

The R grade is a place holder that we use for two (2) quarter classes as the D2L grading systems for sequential classes where both must be completed to receive grades.

All students initially receive an "R" for IT394. Once student's complete IT 395 and grades for IT 395 are posted, your IT 394 grade will be changed to the letter grade you and your team mates earned for it.

## Grades

Grades are a combination of points for submitted writing assignments, participation, and attendance.

Team members receive the same grade on team assignments.

### **IT 394:**

Individual Writing Assignments (Reflections): 20%

Team client content Email: 5%

Team weekly deliverable artifacts + Project documents: 50%

Surveys: 10%

Client Evaluation of Team: 5%

Participation – Quality – Performance: 20%

### **IT 395:**

Final Paper Assignments: 25%

Team client content Email: 5%

Team weekly deliverable artifacts + Project documents: 10%

Final Project Deliverables: 25%

Evaluation Surveys: 10%

Participation – Quality – Performance: 25%

## Grading Scale

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
F	60-0

## Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to providing you with the highest quality of teaching. The evaluations are anonymous.

Please complete the evaluation online in [Campus Connect](#).

## Academic Integrity and Plagiarism

University policies on academic integrity will be strictly adhered to. Violations of academic integrity, including (but not limited to): cheating; plagiarism; fabrication of data; and complicity, are not tolerated. It is expected and understood you are familiar with DePaul's Academic Integrity Policy, at:

<http://academicintegrity.depaul.edu/AcademicIntegrityPolicy.pdf>, which defines the terms used above and provides a complete statement about the rules. Consult the Academic Integrity website for further guidance:

<http://academicintegrity.depaul.edu/>

All students are expected to abide by the University's Academic Integrity Policy which prohibits cheating and other misconduct in student coursework. Publicly sharing or posting online any prior or current materials from this course (including exam questions or answers), is considered to be providing unauthorized assistance prohibited by the policy. Both students who share/post and students who access or use such materials are considered to be cheating under the Policy and will be subject to sanctions for violations of Academic Integrity.

## Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the [University Academic Calendar](#). Information on enrollment, withdrawal, grading and incompletes can be found at

<http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>.

## Students with Disabilities

Students requiring an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: Student Center, LPC, Suite #370/Phone number: (773)325.1677/Fax: (773)325.3720/TTY:(773)325.7296

## Preferred Names & Gender Pronouns

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the quarter so that I may make appropriate changes to my records. Please also note that students may choose to identify within the University community with a preferred first name that differs from their legal name and may also update their gender. The preferred first name will appear in University related systems and documents except where the use of the legal name is necessitated or required by University business or legal need. For more information and instructions, please see the Student Preferred Name and Gender Policy at <http://policies.depaul.edu/policy/policy.aspx?pid=332>

## Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If this occurs, reasons for the change and options available to students will be thoroughly addressed on the course D2L site. Changes are not made lightly as this syllabus is considered a contract between instructor and student.