

Data Science 301



Community-Engaged Computing

Fall 2026

3 Credits

Department of Computational Sciences
College of Business, Innovation, and Technology

Time: M/W/F 11:30am–12:20pm

Location: Computational Sciences Center, Tredtin Hall

Instructor: Amber Camp

Office: Computational Sciences Center, Tredtin Hall

Office Hours: T 2:00–4:00, W 9:00–10:00 & [by appointment](#)

Email: amber.camp@chaminade.edu

Required Materials: Class materials to be provided by instructor. Personal computer required.

Course Canvas: <https://chaminade.instructure.com/courses/46461>

Course Overview: An introduction to research methods for community-engaged data science. Students examine how research questions are formulated, how data are collected and by whom, and what different methodological approaches can and cannot reveal. Coursework covers survey design, qualitative and participatory methods, sampling, and the use of public and found data. Working in teams, students investigate a community issue computationally; individually, each student develops a research proposal on a question of their own choosing.

Catalog Description: Lecture course addressing the use of data analytics, visualization and visualization for evidence-based decision support across diverse organizations, with special reference to the potential impact of data-science mediated decision support on community, grassroots and social advocacy groups. Students will design community impact strategies based on stakeholder engagement, develop tools such as dashboards and story boards using relevant data sets and present outputs to the community constituents for the course.
Prerequisites: EN-102, COM-101 & DS-200

Grading:

Item	Percentage
In-class Participation	10%
Assignments (× 6)	30%
Group project	20%
Final Project	40%

Important Dates:

Final Project due dates:

10/23 – Topic statement

11/20 – Proposal Outline

11/30–12/4 – Final Presentation

12/10 – Final Paper

Final Grades – Final grades will be computed following the grading structure printed above. Grades will be regularly updated on Canvas, at least every two weeks. Final grades will be submitted to [Self-Service](#) at the end of the term.

Grades are interpreted as follows:

A 90–100%	Outstanding scholarship and an unusual degree of intellectual initiative
B 80–89%	Superior work done in a consistent and intellectual manner
C 70–79%	Average grade indicating a competent grasp of subject matter
D 60–69%	Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work
F < 60%	Failed to grasp the minimum subject matter; no credit given

Grades of “Incomplete” – Students and instructors may negotiate an incomplete grade when there are specific justifying circumstances. An Incomplete Contract must be completed. When submitting a grade, the “I” will be accompanied by the alternative grade that will automatically be assigned after 30 days. These include IB, IC, ID, and IF. If only an “I” is submitted the default grade is F. The completion of the work, evaluation, and reporting of the final grade is due within 30 days after the end of the semester or term. This limit may not be extended.

Learning Outcomes

Program Learning Outcomes (PLOs) – Upon completion of the B.S. program in Data Science, Analytics, and Visualization, the student will be able to:

1. Apply collection, storage, or cleaning of datasets;
2. Apply technologies to collect or manage data, analyze data, or program an application;
3. Analyze data using mathematics, statistics, prediction models, visualizations, or other forms of analytics to support decision-making;
4. Apply effective data communication approaches for stakeholders and the public;
5. Integrate an awareness of ethical issues and collective standards to positively influence the application of data science to service, justice and peace in working towards solutions for societal problems.

Course Learning Outcomes (CLOs) – Upon completion of DS-301, the student will be able to:

1. Formulate researchable questions grounded in real community problems or opportunities;
2. Critically evaluate research by interpreting results, identifying limitations, and distinguishing between strong and weak evidence;
3. Conduct a structured literature review by searching, synthesizing, and citing relevant scholarly work;
4. Design a feasible research plan including study design, sampling approach, and data collection strategy that considers community context;
5. Communicate research ideas effectively through a written proposal, oral presentation, and plain-language summary appropriate for stakeholders; and
6. Acquire, prepare, and analyze data from public or found sources to investigate a community question, and communicate the limits of what those data can support.

Alignment of Data Science PLOs and Course Learning Outcomes

I = introduced, R = reinforced, M = mastery of skills and concepts, A = assessed in this course

DS-301 CLO	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5
1. Formulate researchable questions					R
2. Critically evaluate research			R		R
3. Structured literature review			I/R		
4. Design a feasible research plan	R				R/A
5. Communicate research ideas				R/A	
6. Acquire, prepare, and analyze data	R/A	R/A	R/A	R	

Marianist Values –An education in the Marianist Tradition is marked by five principles. Reflect on how this course relates to one or more:

1. Education for formation in faith.
2. Provide an integral, quality education.
3. Educate in family spirit.
4. Educate for service, justice and peace, and integrity of creation.
5. Educate for adaptation and change.

DS-301 draws specifically upon the Marianist principles of educating for service, justice and peace and educating in family spirit. Community-engaged research begins by taking seriously the questions communities themselves are asking and recognizing that the people closest to a problem understand it in ways the data alone will not show. This course asks you to consider who is asking a question, whose data are being used, who is represented and who is missing, and what a community actually gains from the work. You will also do much of that work alongside others—in teams and in conversation with community partners—because research that serves a community has to be accountable to it.

Native Hawaiian Values – Education is central to both Marianist and Native Hawaiian culture — both seek transformative, value-centered learning that serves the marginalized. This is reflected in the ‘Ōlelo No‘eau (Hawaiian proverbs) below:

1. **Educate for Formation in Faith (Mana):** E ola au i ke akua (‘Ōlelo No‘eau 364) — May I live by God.
2. **Provide an Integral, Quality Education (Na‘auao):** Lawe i ka ma‘alea a kū‘ono‘ono (‘Ōlelo No‘eau 1957) — Acquire skill and make it deep.
3. **Educate in Family Spirit (‘Ohana):** ‘Ike aku, ‘ike mai, kōkua aku, kōkua mai (‘Ōlelo No‘eau 1200) — Recognize others, be recognized, help others, be helped.
4. **Educate for Service, Justice and Peace (Aloha):** Ka lama kū o ka no‘eau (‘Ōlelo No‘eau 1430) — Education is the standing torch of wisdom.
5. **Educate for Adaptation and Change (‘Āina):** ‘A‘ohe pau ka ‘ike i ka hālau ho‘okahi (‘Ōlelo No‘eau 203) — All knowledge is not taught in the same school.

Alignment of DS-301 Outcomes to Marianist and Native Hawaiian Values

Value	DS-301
Educate for service, justice and peace (Aloha)	Research questions drawn from real community problems; sustained attention to whose data are used, who is represented, and what a community gains from the work
Educate in family spirit (‘Ohana)	Team-based investigation of a community issue
Provide an integral, quality education (Na‘auao)	Methodological depth across survey design, qualitative and participatory approaches, and sampling, including honest accounting of what each method can and cannot reveal

Class Policies

Communication – Communication with the instructor will primarily take place over email. I will respond to your emails as soon as possible, within **36 hours**. All students are also welcome to attend [office hours](#) or stop by anytime my office door is open.

Quick reading: [Why College Professors Want You to Talk to Them](#)

Absences – Each student, regardless of the reason for absence, is responsible for completing all assigned work by the scheduled deadline, or in advance in cases of planned absences. Review the official [CUH Attendance Policy](#).

Time Allocation - This is a three-credit hour course requiring 135 clock hours of student engagement, per the official CUH Credit Hour Policy. Over the 15 weeks of this course, students will spend approximately 34 hours in class (lecture, discussion, and classwork activities), 51 hours completing homework and group assignments, and 50 hours researching, writing, and refining their final research proposal. This is an average of about 9 hours per week, including class time.

Participation - Group discussion and collaboration are essential to the sciences, and therefore participation is essential in this course. Active participation (listening, asking/answering questions, offering perspectives/examples, etc.) is *required* to earn participation credit.

Assignments and Late Work - All assignments must be submitted by the due date listed on the syllabus or as instructed in class. Each student has three extension requests for the semester, and these requests must be submitted before the assignment due date.

Late assignments may receive reduced or no credit.

Classroom Etiquette - Electronic devices should be used responsibly during class meetings. Devices should not distract the classroom environment, and students who are distracted, or distracting to others, will not earn participation credit for that session.

Assignment Drafts – Students may submit rough drafts of their assignments no later than three days in advance of the final due date for that assignment. Students who choose to do this will receive extensive comments and suggestions for improvements no later than 1 day before the assignment due date. **This is optional** but will benefit your work and your grade.

Extra Credit – Extra credit opportunities will be offered throughout the semester and will often require work outside of the classroom. The number of extra credit opportunities cannot be anticipated or guaranteed, so, while it is a good opportunity to boost your grade, the best way to do well in this class will be to participate regularly and submit quality work on time.

Changes to the Syllabus – While the provisions of this syllabus are as accurate and complete as possible, your instructor reserves the right to change any provision herein at any time. Every effort will be made to keep you advised of such changes, and information about such changes will be available from your instructor over email and/or on Canvas, as well as announced in class.

Important Information

Academic Honesty – Academic honesty is an essential aspect of all learning, scholarship, and research. It is one of the values regarded most highly by academic communities throughout the world. Violations of the principle of academic honesty are extremely serious and will not be tolerated.

Students are responsible for promoting academic honesty at Chaminade by not participating in any act of dishonesty and by reporting any incidence of academic dishonesty to an instructor or to a University official. Academic dishonesty may include theft of records or examinations, alteration of grades, plagiarism, **and unauthorized and/or undisclosed AI usage**, in addition to more obvious dishonesty. See catalog section [*Student Use of Artificial Intelligence in Academic Work*](#) for further information.

Questions of academic dishonesty in a particular class are first reviewed by the instructor, who must make a report with recommendations to the Director of the Academic College. Punishment for academic dishonesty will be determined by the instructor, Director, and the Dean of Academic College and may include an “F” grade for the work in question, an “F” grade for the course, academic notice, or dismissal from the University.

For the most up to date information, please refer to the [Academic Honesty Policy](#) on the Chaminade University Catalog website.

AI (Artificial Intelligence) Statement – Chaminade University recognizes the increasing role of artificial intelligence (AI) technologies in academic and professional environments. AI encompasses, but is not limited to, generative AI platforms, automated writing or content generation software, coding assistants, and similar tools. Students must ensure all submitted work genuinely reflects their knowledge and effort. Using AI to produce or significantly complete graded assignments, exams or other academic tasks – defined as use that substitutes for or substantially replaces a student’s own analysis, reasoning or written expression – without explicit instructor approval is considered academic misconduct and will be dealt with according to the University’s Academic Honesty Policy.

If an instructor has reasonable grounds to question whether submitted work genuinely reflects a student’s own knowledge, authorship, or mastery of course material — or whether it meets the course’s expectations for AI use — the instructor may require the student to provide additional or alternative evidence of authorship and content mastery. Such evidence may include drafts, notes, revision history, source materials, process explanations, oral discussion, in class work, or completion of an alternative assessment. A student’s refusal or inability to provide such evidence may be considered, along with other available information, in evaluating whether the work meets course requirements and stated learning outcomes. Instructors will not rely solely on AI detection software or other automated tools in making grading or academic integrity determinations. Such determinations will be based on the totality of the available information and handled in accordance with applicable University policies and procedures. See the catalog section Student Use of Artificial Intelligence in Academic Work for further information.

Title IX and Nondiscrimination – Chaminade University of Honolulu is committed to providing a learning, working and living environment that promotes the dignity of all people, inclusivity and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to

immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. For pregnant and parenting students, I am also obligated to provide you with similar resources for support and protections available to you. My goal is to make sure that you are aware of the range of options available to you and have access to the resources and support you need.

Nondiscrimination Policy & Notice of Nondiscrimination – The university is committed to comply with all State and Federal statutes, rules, and regulations which prohibit discrimination. The university is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin (including shared ancestry and ethnic characteristics), ancestry, citizenship, disability, genetic information, marital status, breastfeeding, arrest and court record (except as permissible under State law), sexual orientation, or status as a covered veteran. Inquiries about Title IX or general Civil Rights concerns may be referred to the University's Title IX Coordinator, the U.S. Department of Education's Office for Civil Rights, or both and contact information may be found [HERE](#). On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#).

The University's Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the Campus Incident Report form. Chaminade University of Honolulu prohibits sex discrimination in any education program or activity that it operates.

The NOTICE of NONDISCRIMINATION can be found here: [Notice of Nondiscrimination](#).

Student with Disabilities Statement- Kōkua 'Ike – Accessibility Services recognizes disability as a valued aspect of diversity and ensures equal access to the educational environment in accordance with Section 504 of the Rehabilitation Act; the Americans with Disabilities Act, as amended; and the principles and professional standards of the Association on Higher Education and Disability. Access is supported through reasonable accommodations and referrals to campus and community resources.

Appointments with the Accessibility Services Coordinator are available through Stellic at <https://chaminade.stellic.com> and may be held virtually or in person. Drop-in appointments are also welcome.

Students seeking support must meet with the Accessibility Services Coordinator as early as possible, even if they are unsure whether they have appropriate documentation of their disability or its impacts. The Accessibility Services Coordinator prioritizes listening to students' experiences and will discuss any documentation needs during the initial intake meeting. Students may seek support at any time.

Learn more at <https://chaminade.edu/ada-accommodations>

Assessment of Student Work – Chaminade University may use student work anonymously to assess achievement of course, program, and institutional learning outcomes as part of ongoing quality improvement efforts.

Campus Resources & Support Services – The following resources are available to all Chaminade students. Reach out early — these services exist to support your success.

Resource	Description	Contact / Website
Accessibility Services (Kōkua ‘Ike)	Accommodations under Section 504 and ADA. Contact early — appointments via Stellic, virtual or in person.	ada@chaminade.edu chaminade.edu/ada-accommodations
Tutoring & Academic Coaching (Kōkua ‘Ike)	Tutoring and Academic Coaching Services support students’ progression toward their academic, personal, and professional goals with clarity and intention. Services include individualized support in English, math, nursing, sciences, and social sciences, as well as guidance in developing goals and study strategies.	chaminade.edu/tutoring-academic-coaching-services
Career Services	Career Services supports students throughout their career journeys. Services include individualized job search strategy coaching, resume reviews, job interview coaching, and access to career-related resources and opportunities.	chaminade.edu/career-services
Basic Needs Resources	Support for food insecurity, housing instability, and other basic needs.	chaminade.edu/basic-needs/
Title IX / Nondiscrimination	Reporting and support for sex discrimination and gender-based violence. Campus Incident Report Form available online.	chaminade.edu/titleix/resources-and-support/
Hazing Prevention	Confidential support, crisis intervention, and reporting for any type of abuse including hazing.	hazingpreventionnetwork.org/athlete-helpline/
Campus Safety / SafeSwords	Security escort service for anyone who feels unsafe walking alone on campus at any time of day. Call security and a professional will escort you to your destination.	chaminade.edu/student-life/security/campus-safeswords-program/
CUH Alert Emergency Notification	Emergency text system. Register your cell number via the Chaminade portal and confirm the text to complete enrollment.	chaminade.edu

Course Schedule (Dated 8/19/26. Subject to change as needed)

Week	Module	Assignment Due
One 8/17-8/21	Syllabus & introduction	
Two 8/24-8/28	Wed convocation - no class - Research questions - Why questions come before data	
Three 8/31-9/4	- Stakeholders & community context - Friday group work	Assignment 1
Four 9/7-9/11	Mon holiday - Where data comes from - Friday group work	Assignment 2
Five 9/14-9/18	- Quantitative methods - Survey design & measurement - Friday group work	
Six 9/21-9/25	- Qualitative methods - Friday group work	Assignment 3
Seven 9/28-10/2	- Sampling - Friday group work	
Eight 10/5-10/9	Group midterm presentations	Group midterm
Nine 10/12-10/16	Wellness Week (TBD) & Mon holiday	
Ten 10/19-10/23	- Debrief - Research proposal launch	Topic statement
Eleven 10/26-10/30	- Literature search & synthesis - Writing & APA workshops	Assignment 4
Twelve 11/2-11/6	- Reading empirical papers - Strong vs. weak evidence	Assignment 5
Thirteen 11/9-11/13	Wed holiday - Study design and ethics	Assignment 6
Fourteen 11/16-11/20	Amber traveling - Work on final projects	Proposal outline
Fifteen 11/23-11/27	Fri no class - Work on final projects	
Sixteen 11/30-12/4	Final presentations	
Finals 12/8-12/12	Final Paper due Thursday, December 10 at 5:30 pm	

Note: Final grades submitted by 12/17.