

DeAnza Community College – CIS Dept – CIS64F
Introduction Big-Data and Analytics

Course	CIS D064F.62Z (CRN: 24683) <i>Introduction to Big-Data and Analytics</i>				
Term	2018-Fall	Dates	24 Sep 2018 to 14 Dec 2018	Units	4 Quarter Units
Format	<p>100% Online. Weekly Modules.</p> <p>Each week during the quarter, a “Weekly Module” will be posted to our course’s Canvas site. With the exception of the “Final Week” Module, Video Lectures will be an important centerpiece of all Modules. Video Lectures will be recorded and posted to YouTube(*) for students to complete each week.</p> <ul style="list-style-type: none"> • (*) <i>If needed: Closed captioned versions can be posted to 3C Media. If you wish to request transcribed versions of the Video Lectures, please contact the Instructor privately.</i> <ul style="list-style-type: none"> ○ <i>If no student requests transcripts, the Instructor will not submit them to 3C Media for transcription services.</i> <p>Weekly Canvas Modules will include links to both a YouTube version of the Video Lecture as well as a 3C Media version (without transcripts, unless one, or more, student requests transcripts).</p> <ul style="list-style-type: none"> • IMPORTANT NOTE: All Students are expected to view all Video Lectures within two days of their posting. • The timely viewing Video Lectures is a requirement of this course! <p>In addition to Video Lectures, there are also a mix of “Inline-Activities” (an analogy for in-class activities), quizzes, “Challenges” (Assignments), Exams (Mid-term and Final); and Online Office Hours. Additionally, all CIS64F students are expected to complete the Tableau Learning Course, “<i>Author a Viz</i>” during the quarter.</p> <ul style="list-style-type: none"> • See: https://www.tableau.com/learn/starter-kits • IMPORTANT NOTE: At least once-per-week, all students are required to “check-in” to Online Office Hours to ask questions, discuss course materials, gain clarification of Challenges, and other course activities. <p>This 100% Online course entails a combination of approximately four hours of Video Lectures, Readings, Inline-Activities, and Challenges per week—resulting in ~48 “Contact Hours” during the quarter (Online Office Hours are not included in Contact Hours).</p> <ul style="list-style-type: none"> • This means: In some weeks, there may be four hours of online video lectures with no supplemental Activities. However, during the majority of the course, each week will entail a combination of online Video Lectures PLUS “Inline-Activities” (small learning tasks which would otherwise be completed in class), plus quizzes, plus Challenges...the sum of which span ~four hours. <p>In all cases, there will also be extensive work outside of class (e.g., Readings, “Challenges” (Assignments)), <i>Author a Viz</i> coursework, and the like.</p>				

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Instructor	Dr. Rick Hubbard
Prerequisites	Advisory: EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273.
Class Schedule	<p>24 Sep 2018 to 14 Dec 2018</p> <p>Once-per-week Module posted to Canvas which contains such components as: Video Lectures (recorded video), “Inline-Activities,” “Challenges” (Assignments), quizzes, Exams, readings, etc.</p> <p>Once-per-week Online Office Hours (see <i>Instructor’s Online Office Hours</i>, below).</p>
Textbook	<p>In lieu of a textbook, various readings (all online) will be assigned throughout the quarter. Also, all CIS64F students are expected to complete the Tableau Learning Course, “<i>Author a Viz</i>” during the quarter.</p> <ul style="list-style-type: none"> • See: https://www.tableau.com/learn/starter-kits
Instructor’s Online Office Hours:	<p>Weekly Online Office Hours are scheduled(*) on Wednesday from 1630PT to 1800PT (4:30PM - 6:00PM Pacific Timezone) beginning on 26 Sep 2018 and concluding on 12 Dec 2018.</p> <ul style="list-style-type: none"> • Online Office Hours will not be held the day before Thanksgiving; Wed, 21 Nov 2018. <p>Online Office Hours will be conducted via Canvas’s Chat feature.</p> <ul style="list-style-type: none"> • <i>(*)If schedule adjustments are necessary (e.g., occasional date or time changes), they will be announced to all students via Email. In the absence of any announcement, Online Office Hours will be held as scheduled.</i> <p>Individual Office Hours are available with an appointment. Contact Dr. Hubbard via Email at hubbardrick@fhda.edu to request a scheduled appointment.</p> <ul style="list-style-type: none"> • IMPORTANT NOTE: All students are required to “check-in” during each Weekly Online Office Hour session to ask questions, raise discussions, obtain clarification, and the like. To be clear: Although every student is invited to, it is not necessary to participate in Weekly Online Office Hours for the full time period (1630PT to 1800PT). You may leave after asking a question, posting a comment, etc.
Phone:	<p>+1.415.690.7560 (Google Voice)</p> <p>If no response, please leave voicemail.</p>
Email:	hubbardrick@fhda.edu

*“...he [Dr. Hubbard] hardly ever gave us answers, only difficult questions.
He expected us to think [...] too much.”*

—Prior Student (ASU)

Syllabus Table of Contents

Syllabus Table of Contents	3
Course Descriptions	4
CIS64F Catalog Course Description.....	4
CIS64F Instructor’s Informal Description	4
SPECIAL NOTE Regarding Add/Drop Policy.....	4
CIS64F Learning Goals and Outcomes	5
Goal of CIS64F.....	5
Student Learning Outcome Statements (SLO)	5
Objectives of CIS64F.....	5
Grading Approach.....	6
Grade Normalization.....	6
Canvas Modules.....	7
Tableau Learning: <i>Author a Viz</i> Online Course.....	7
Canvas Grades are Incomplete!	7
Grading Scale Approach.....	7
Extra Credit Policy.....	8
Make-Up Policy	8
Late-Work Policy.....	8
Student’s Key Responsibilities	8
Expectations, Due-Dates and Times.....	8
Self-Sufficiency	8
Inquisitiveness and Curiosity.....	8
Professional Decorum.....	8
Disagree Without Being Disagreeable.....	8
Advice.....	9
Academic Integrity.....	9
Access to Email, Canvas, and Broadband	9
Be Firm on Being Flexible (“ <i>Semper Gumby</i> ”)	10
Students with Disabilities	10
Confidentiality and Mandatory Reporting.....	10
Tentative Course Schedule (Subject to Revision)	11
Things To Do Now	12

Course Descriptions

CIS64F Catalog Course Description

Introduction to Big-Data deluge, management of unstructured and structured data and design of large scale database systems. Concepts covered include Map-reduce parallel processing algorithms, Real-time analytics and Predictive analytics, attributes of Big-Data and related issues. Introduction to large scale file systems and operations and parallel processing algorithms.

Source: <https://www.deanza.edu/publications/catalog/search/outlinepublic.html?searchID=CIS64F>

CIS64F Instructor’s Informal Description

Designed as a **first-course** in the field, **CIS64F**, *Introduction to Big-Data and Analytics*, [very, very] briefly introduces basic components and concepts of Analytics in so-called “Big Data” environments.

- In this introductory “overview” course, the content will provide you with important insights regarding undertaking computationally-intense analytical tasks using contemporary technologies.

Although as a first-course in the field, CIS64F is not sufficient to pursue a career (or job) in Data Science, Data-Analytics, and/or Big Data. This “Survey” course is designed for students to gain an understanding of the breadth of the topic; not the depth (sometimes referred to as “*an inch-deep and mile-wide view.*”).

- To such ends, this course is designed to introduce you to contemporary & foundational “Big Data” concepts (e.g., Map-Reduce) and technologies (such as: Hadoop).

Focus on Business Value

Because the **business value** of Big-Data is obtained only when used...this course also introduces analytical concepts (such as: EDA, or Exploratory Data Analysis); and analytical tools (e.g., Tableau).

The course’s “Course Challenge” (aka “Mini-case”) introduces students to the challenge(s) of defining and solving a “Business Case” using data, analysis, and reasoning all communicated effectively in written form.

SPECIAL NOTE Regarding Add/Drop Policy

Students (**NOT** your Instructor) are responsible for conforming to all student-oriented College policies and dates—including (but not limited to) DROP/ADD policy and dates; see: <https://www.deanza.edu/calendar/springdates.html>

Students that do not complete the Syllabus Quiz prior to 2359PDT on Sat, 29 Sep 2018 are **eligible** to be dropped from the course (but **not necessarily will** be dropped).

If you wish to drop the course: **DO NOT ASSUME** your Instructor has dropped you (e.g., due to lack of participation).

- **It is YOUR responsibility to ensure your desired Drop/Add/Registration status; not your Instructor’s!**

CIS64F Learning Goals and Outcomes

Goal of CIS64F

The primary **goal** of this course is for each student to develop unique, “first-hand” insights, knowledge, and skills regarding contemporary **Big-Data** and **associated Analytics** concepts, practices, and technologies.

Student Learning Outcome Statements (SLO)

Student Learning Outcome: Design, implement and debug a large-scale database system using technology like Hadoop or Cassandra.

- In practice, the SLO will be achieved via the *Objectives* listed here:

Objectives of CIS64F

Gain a basic understanding of:

1. The **business value and purpose** of Big-Data and Analytics.
2. Big-Data technologies (*e.g.*, Hadoop) and methods (*e.g.*, ETL – Extract-Transform-Load).
3. Analysis approaches and methods (*e.g.*, qualitative analysis and reasoning; quantitative analysis and statistics).
4. Business Analysis Life-cycle(s) for undertaking Big-Data/Analytical efforts to solve business problems.
5. Accessing, acquiring, and preparing data (so-called “Data Wrangling”) for Big-Data/Analytical efforts.
6. Performing analytic operations on datasets to generate supported conclusions.
7. Data visualization, and its role in analysis and communicating data-analytic results (*e.g.*, for business executives).
8. Communicating Data-analytic results in a professional context (*e.g.*, professional report writing).

- See [*Tentative Course Schedule \(Subject to Revision\)*](#) for additional details.

Be Mindful!
No “Extra Credit.” No Make-ups. No
Late Work Accepted.

This course makes extensive use of the Data Visualization system “Tableau.”
As a supplement to Instructor-provided content (Canvas Modules), all CIS64F students are expected to complete the Tableau Learning Course, “*Author a Viz.*”

Grading Approach

“Gradable” items in the course include these three weighted components:

1. Quizzes and Online Office Hours Participation,
2. [Graded] Inline-Activities and Challenges (*e.g.*, Programming, Papers; including “Course Challenge (aka “Mini-case”)”), and
3. Mid-term plus Final Exam.

Grade Normalization

All gradable components will be “normalized;” as explained here:

1. All Quizzes and Online Office Hour Points will be summed, then divided by the maximum number of possible points for this grading category to yield a normalized score.
2. All [Graded] Inline-Activities and Challenges (*e.g.*, Programming, Papers; including “Course Challenge”) will be summed, then divided by the maximum number of possible points for this grading category to yield a normalized score.
 - *By [Graded] is meant:* Some Inline-Activities and/or Challenges will not be graded and are excluded from grade calculations.
3. Mid-term Exam points and Final Exam points will be summed, then divided by the maximum number of possible points for this grading category to yield a normalized score.
4. When Final Grades are computed, the three normalized “Category” scores will be Big-Data/Analytical efforts, as shown below:

Grade Component (Category)	Weight
Quizzes and Office Hours Participation	25%
[Graded] Inline-Activities and Challenges (<i>e.g.</i> , Programming, Papers; including “Course Challenge”)	50%
Mid-term and Final (Combined)	25%
Total	100%

Canvas Modules

In our course, Canvas “Modules” will be used to convey expectations, quizzes, exams, Challenges, deliverables, and the like.

- **IMPORTANT NOTE:** Dates in Canvas Modules have precedence over the [Tentative Course Schedule \(Subject to Revision\)](#).

Tableau Learning: *Author a Viz* Online Course

As a supplement to Instructor-provided content: All CIS64F students are expected to complete the Tableau Learning Course, “*Author a Viz*” during the quarter. Students are advised to complete *Author a Viz* at a pace that’s quicker than listed in [Tentative Course Schedule \(Subject to Revision\)](#):

- See: <https://www.tableau.com/learn/starter-kits>
- Authoritative use of Tableau in the Course Case (aka, Mini-case) is required.

Canvas Grades are Incomplete!

Because Canvas does not have the capabilities to combine and weight Gradable Components (as reflected above): Canvas’ Grade Reports are **incomplete**.

Grading Scale Approach

As noted in College’s Catalog, final course grades are based on your composite performance. The College’s designations for letters grades are listed here:

Letter Grade	Percentages	
	Greater Than or Equal to	And Less than
A+	96%	100+%
A	93%	96%
A-	90%	93%
B+	87%	90%
B	83%	87%
B-	80%	83%
C+	77%	80%
C	70%	77%
D+	67%	70%
D	63%	67%
F	0%	63%

Source:
<https://www.deanza.edu/policies/grading.html>

Extra Credit Policy

- **Simple: There is no Extra Credit.**

Make-Up Policy

- **Simple: There are no Make-ups.**

Late-Work Policy

- **Simple: No Late-Work is accepted.**

Student's Key Responsibilities

Expectations, Due-Dates and Times

You are responsible to understand all course expectations (*e.g.*, Challenges, Readings), including (but not limited to) all due-dates & times and submission requirements.

Self-Sufficiency

In our course, Students are expected to exhibit high degrees of self-sufficiency; including:

1. **Self-Organizing.** You are responsible to select, plan, organize, execute, and evaluate the way(s) you approach our course and the degree of purposeful effort you invest.
2. **Self-Directing.** You are responsible for determine how you approach (which also includes determining how you will not approach) fulfilling course requirements.
3. **Self-Reliance.** You are responsible to “*find a way*” to succeed—especially in the presence of impediments (*e.g.*, schedule conflicts, technical challenges).

Inquisitiveness and Curiosity

In our course, the defined content and work should be considered “a starting point.”

- **You are expected (and will benefit considerably by doing so) to progress far beyond the scope of the course content.**

Professional Decorum

The College expects that students will behave in a professional and respectful manner while involved in our course (*e.g.*, online, discussion groups, chat) and during any interaction with professors, colleagues, and other stakeholders (*e.g.*, recruiters).

Disagree Without Being Disagreeable

As we mutually explore and consider various ideas in this class, differences are likely to emerge...knowledge, opinions, perceptions, perspectives, etc. When they do—please engage in mutually respectful discourse...in the spirit of *disagreeing without being disagreeable*.

Challenging and Disagreeing with me (Dr. Hubbard)

If/When you have a material difference (*e.g.*, knowledge, opinion, perspective) with *anything* I present in class—you are **expected**...even encouraged...to challenge me.

You are absolutely free to disagree! While I prefer that you have a substantive basis for any such challenge (*e.g.*, facts, logic)—even in their absence: **please raise an objection.**

Advice

Nothing stated by your Instructor should be regarded as legal advice or financial advice. Rather, the purpose of all exchanges between Facilitator and Student, regardless of the location of such exchanges, is to further the objectives of this course.

Undue, Undisclosed Advocacy. If you perceive I am unduly advocating an **undisclosed** personal opinion—**call me out! Right then. Right there.**

Be assured, I endeavor to disclose my opinions...but, if/when I slip—shout out!

Academic Integrity

Cheating of any kind is an unacceptable behavior and will not be tolerated. Some of the more common types of academic dishonesty relate to the following:

1. **Plagiarism.** Do not use published and/or unpublished material without acknowledging the source.
2. **Cheating on assignments or projects.** Do not collaborate with other students unless it is specifically stated by the instructor that working with others is allowed (*e.g.*, a team project).
3. **Cheating on exams.** Do not acquire from, or give information to, other students about exams. Do not use materials or resources during exams that are not expressly permitted by the instructor.

Penalties for cheating and plagiarism may range from an F on a particular assignment, an F for the course, to expulsion from the College. Violators of the College's Codes on Academic Integrity will be referred to the appropriate DeAnza authorities.

You are responsible to know and conform to the College's Academic Integrity expectations; see: <https://www.deanza.edu/studenthandbook/academic-integrity.html>.

Access to Email, Canvas, and Broadband

Students must have working access to their established College-oriented Email system (the email system that you routinely send and receive College-oriented messages) and Canvas systems; as well as broadband access to the internet.

- ALL QUIZZES, EXAMS, CHALLENGES, DISCUSSION GROUPS, and OFFICE HOURS are provisioned via the College’s Canvas site.
 - This means: You **must** use Canvas to take quizzes and exams; participate in course Discussion Groups; as well as submit Challenge deliverables; and participate in Online Office Hours.

If a student does not have personal access to these resources, they may use the College’s various computer labs.

Be Firm on Being Flexible (“*Semper Gumby*”)

Course Design, Content, Topical Schedule, Syllabus, Grading Mechanisms, Assignments, Readings, and all other course elements are subject to change without prior notice at any time.

Students with Disabilities

If you have a disability-related need for reasonable academic accommodations or services in this course, provide your instructor with a Test Accommodation Verification Form (also known as a TAV form) from Disability Support Services (DSS) or the Educational Diagnostic Center (EDC). Students are expected to provide a minimum of five business days advanced notice of the need for accommodations.

Students with disabilities can obtain a TAV form from their DSS counselor (864-8753 DSS main number) or EDC advisor (864-8839 EDC main number).

Confidentiality and Mandatory Reporting

As a DeAnza College Instructor, one of my responsibilities is to help create a safe learning environment for all students. It is my goal that you feel able to share information related to your life experiences in class-related discussions, in our course Discussion Forums, in your written work, and during Online Office Hours.

When appropriate and to the greatest degree practical, I will seek to keep information you elect to share confidential. **However, you are advised that I am required to share information regarding harassment, sexual misconduct, or violence with the College.**

Tentative Course Schedule (Subject to Revision)

Week	Begin	End	Topics	Tableau "Author a Viz" Course
1	24-Sep-2018	30-Sep-2018	Module-000: Course Overview	
2	1-Oct-2018	7-Oct-2018	Module-010: The Business Case for Big-Data and Analytics in Business	Section 1
3	8-Oct-2018	14-Oct-2018	Module-020: Technologies: Introduction to Big-Data and Data-Analytic Technologies	Section 2
4	15-Oct-2018	21-Oct-2018	Module-030: Data: Characteristics, Acquisition, Preparation, Storage, Use	Section 3
5	22-Oct-2018	28-Oct-2018	Module-040: Analysis: Characteristics, Components, Introductory Methods	Section 4
6	29-Oct-2018	4-Nov-2018	Module-050: Business Analysis Life-cycle 1 of 2. Mid-term Review and Prep. Course Case Project (Mini-case) Assigned	Section 5
7	5-Nov-2018	11-Nov-2018	Module-060: Business Analysis Life-cycle 2 of 2. Mid-term Exam.	Section 6
8	12-Nov-2018	18-Nov-2018	Module-070: Exploratory Data Analysis (EDA), Elementary Statistical Analysis (Descriptive), Overview of Linear Trendlines.	Section 7
9	19-Nov-2018	25-Nov-2018	Module-080: Business Analysis Reports (An Approach), PLUS Thanksgiving. No Online Office Hours on Wed, 21 Nov 2018.	Section 8
10	26-Nov-2018	2-Dec-2018	Module-090: Reserved	
11	3-Dec-2018	9-Dec-2018	Module-100: Reserved	
12	10-Dec-2018	14-Dec-2018	Course Review. Final Prep. Final Exam.	

Things To Do Now

1. Ensure you have broadband internet access; access to Email for campus-related matters; and access to our course materials on Canvas.
2. If you are not proficient in Canvas (*e.g.*, you are new to using Canvas, or it's been a while since you last used Canvas), ensure you are familiar with the Student-oriented features of Canvas. Here is a link to some (not all) resources for your use:
<https://deanza.instructure.com/courses/3382>
3. If you are not already familiar with **Canvas Chat**: open it and glean an idea of its functioning.
4. Download and install the student version of Tableau software and provision it on a computer you can easily access.
 - 4.1. <https://www.tableau.com/academic/students>
5. Gain access to Tableau Learning's *Author a Viz* course. Gain familiarity with the eight sections of the course. Although not formally assigned until Week 2, you are encouraged to complete Section 1 as quickly as possible.
 - 5.1. <https://www.tableau.com/learn/starter-kits>
6. **Complete the Syllabus Quiz prior to 2359PDT on Sat, 29 Sep 2018.**
 - 6.1. Failure to complete the Syllabus Quiz by the stated date/time is grounds for dropping a student from the course—but DO NOT ASSUME you have been dropped!
 - 6.1.1. Your add/drop/registration status is your responsibility; not your Instructor's.
 - 6.2. Students (NOT your Instructor) are responsible for conforming to all student-oriented College policies and dates—including (but not limited to) DROP/ADD policy and dates; see: <https://www.deanza.edu/calendar/winterdates.html>.
7. If you wish to drop the course: DO NOT ASSUME you have been dropped (*e.g.*, due to lack of participation).
8. Be mindful:
 - 8.1. **Make-up Policy**: There is no provision for late/make-up work. This includes (and is not limited to): there are no make-up quizzes. No make-up exams. No make-up Challenges.
 - 8.2. **Extra Credit Policy**: There is no Extra Credit.
 - 8.3. **Late-Work Policy**: No Late-Work will be accepted.
 - 8.4. **Weekly Online Office Hours Check-in is Required**. You are required to participate in Online Offices hours at least once per week to ask questions, discuss course content, or gain clarification.