

Intro to Machine Learning-14067 ITAI-1371

SS 2025 Section 05 3 Credits 09/15/2025 to 12/14/2025 Modified 09/09/2025

Our Vision

Houston Community College will deliver relevant, high-quality education and training, ensuring success for all students, our community, economy and beyond.

<https://www.hccs.edu/about-hcc/> (<https://www.hccs.edu/about-hcc/>)

Course Meetings

Course Modality

Hybrid

Meeting Days

Monday

Meeting Time

6:00PM - 9:50PM

Meeting Location

West Loop Center Rm C128

Welcome and Instructor Information

What's Exciting About This Course

"Introduction to Machine Learning" is a thrilling gateway into the world of computational intelligence and data-driven insights. What's particularly exciting is how it unveils the behind-the-scenes mechanisms that power many of the technologies we take for granted today—from personalized content recommendations on streaming platforms to self-driving car algorithms. The course not only introduces foundational concepts and algorithms, like regression, classification, and clustering, but also paves the way for understanding the ethical implications and societal impacts of machine learning. As students begin to grasp the potential of this field, they often experience an awakening to the endless opportunities and applications that beckon, ranging from healthcare diagnostics to financial forecasting. By demystifying the complex mathematical and computational underpinnings, the course enables learners

to envision themselves as future contributors to this dynamic and ever-evolving field.

My Personal Welcome

Welcome to Machine Learning I. I'm delighted that you have chosen this course!

As its title indicates, this is an introductory course to Machine Learning. The course starts with an overview of Artificial Intelligence, various stages of learning, and then dives deep into Machine Learning.

Preferred Method of Contact

viswanatha.rao@hccs.edu

Course Overview

Course Description

Credits: 3 (2 lecture, 4 lab). This introductory course gives an overview of many concepts, techniques, and algorithms in machine learning, beginning with topics such as classification and linear regression and ending up with solutions for single task deployment (like vacuum a room). The course will give the student the basic ideas and intuition behind modern machine learning methods as well as a bit more formal understanding of how, why, and when they work. The underlying theme in the course is a statistical inference as it provides the foundation for most of the methods covered.

Requisites

MATH 1314.

Department Website

[Artificial Intelligence | Houston Community College - HCC \(hccs.edu\)](https://www.hccs.edu/artificial-intelligence)

Core Curriculum Objectives (CCOs)

ITAI 1371 satisfies Component Area Option in the HCCS core curriculum. The HCCS Core Curriculum Committee has specified that the course address the following core objectives:

- **Critical Thinking:** Students will demonstrate the ability to engage in inquiry and analysis, evaluation and synthesis of information, and creative thinking by completing the class project and assignments, along with answering questions on quizzes and exams.
- **Communication Skills:** Students will demonstrate effective development, interpretation and expression of ideas through written, oral, and visual communication by completing assignments and participating in online or in-class discussions.
- **Quantitative and Empirical Literacy:** Students will demonstrate the ability to draw conclusions based on the systematic analysis of topics using observation, experiment, and/or numerical skills by completing assignments, and answering questions on quizzes and exams.

Student Learning Outcomes and Objectives

Learning Objectives for each CSLO are mapped within your Canvas Course.

Departmental Practices and Procedures

Department Specific Instructor and Student Responsibilities: Artificial Intelligence Department

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar
- Arrange to meet with individual students as needed

As a student, it is your responsibility to:

- Attend class in person and/or online
- Participate actively by reading and reviewing course material, interacting with classmates, and responding promptly in your communication with your instructor
- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Be aware of and comply with academic honesty policies in the [HCCS Student Handbook](#)

Program-Specific Student Success Information : Artificial Intelligence Department

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time is required for the assignments. The assignments provided will help you practice the concepts discussed in class lectures and hone your hands-on skills. Successful completion of this course requires a combination of the following:

- Reading the materials provided from the Internet
- Critically viewing the videos provided from the Internet
- Attending class in person and/or online
- Working with your teammates to complete assignments

- Participating in class activities

There is no short cut for success in this course; it requires reading and studying the material and more importantly completing the assignments.

Instructional Materials and Resources

Instructional Materials

The [HCC Online Bookstore \(https://hccs.bncollege.com/shop/hccs-central/page/find-textbooks\)](https://hccs.bncollege.com/shop/hccs-central/page/find-textbooks) provides searchable information on textbooks for all courses. Check with your instructor before purchasing textbooks because the book might be included in your course fees.

Add Instructional Materials Here

Temporary Free Access to E-Book

<< [add link] >>

Other Instructional Resources

Courseware

Content here...

Course Requirements

Assignments, Exams, and Activities

Type	Weight	Topic	Notes
Assignment	25%		Describe the assignment here.
Labs	25%		Describe the assignment here.
Mid Term	25%		Describe the assignment here.
Final Exam	25%		Describe the assignment here.
Extra Credit			Describe the assignment here.

Grading Formula

Grade	Range	Notes
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Grade	Range	Notes
A	≥ 90 and < 100	
B	≥ 80 and < 90	
C	≥ 70 and < 80	
D	≥ 60 and < 70	
F	< 60	

* Instructor's Practices and Procedures

Incomplete Policy

In order to receive a grade of Incomplete ("I"), a student must have completed at least 85% of the work in the course. In all cases, the instructor reserves the right to decline a student's request to receive a grade of Incomplete.

Missed Assignments/Make-Up Policy

Late submissions are not accepted

Academic Integrity

Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance):

<https://www.hccs.edu/studentprocedures> (<https://www.hccs.edu/studentprocedures>)

Attendance Procedures

Attendance is mandatory

Student Conduct

Add Content Here

Instructor's Course-Specific Information

Add Content Here

Devices

Add Content Here

Faculty Statement about Student Success

Add Content Here

Faculty-Specific Information Regarding Canvas

This course section will use Canvas (<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)) to supplement in-class assignments, exams, and activities.

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

Statement Regarding Classroom Environment

Add Content Here

HCC Policies and Information

HCC Grading System

HCC uses the following standard grading system:

Grade	Grade Interpretation	Grade Points
A	Excellent (90-100)	4
B	Good (80-89)	3
C	Fair (70-79)	2
D	Passing (60-69), except in developmental courses.	1
F	Failing (59 and below)	0
FX	Failing due to non-attendance	0
W	Withdrawn	0

Grade	Grade Interpretation	Grade Points
I	Incomplete	0
AUD	Audit	0
IP	In Progress. Given only in certain developmental courses. A student must re-enroll to receive credit.	0
COM	Completed. Given in non-credit and continuing education courses.	0

Link to Policies in Catalog and Student Handbook

Here's the link to the HCC Catalog and Student Handbook: <https://catalog.hccs.edu/> (<https://catalog.hccs.edu/>)

In it you will find information about the following:

- Academic Information
- Academic Support
- Attendance, Repeating Courses, and Withdrawal
- Career Planning and Job Search
- Childcare
- Ability Support Services
- Electronic Devices
- Equal Educational Opportunity
- Financial Aid TV (FATV)
- General Student Complaints
- Grade of FX
- Incomplete Grades
- International Student Services
- Health Awareness
- Libraries/Bookstore
- Police Services & Campus Safety
- Student Life at HCC
- Student Rights and Responsibilities
- Student Services
- Testing
- Transfer Planning
- Veteran Services

Link to HCC Academic Integrity Statement

<https://www.hccs.edu/student-conduct> (<https://www.hccs.edu/student-conduct>) (scroll down to subsections)

Campus Carry Link

Here's the link to the HCC information about Campus Carry:

<https://www.hccs.edu/campuscarry> (<https://www.hccs.edu/campuscarry>)

HCC Email Policy

When communicating via email, HCC requires students to communicate only through the HCC email system to protect your privacy. If you have not activated your HCC student email account, you can go [to HCC Eagle ID \(https://www.hccs.edu/email\)](https://www.hccs.edu/email) and activate it now. You may also use Canvas Inbox to communicate.

Office of Equal Opportunity and Title IX

Use the following link to access the HCC Office of Equal Opportunity and Title IX:

<https://www.hccs.edu/oeotix/> (<https://www.hccs.edu/oeotix/>)

Ability Services

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including long and short term conditions, mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <https://www.hccs.edu/accommodations> (<https://www.hccs.edu/accommodations>)

Title IX

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

Sandra Jacobson, J.D., M.Ed., SHRM-SCP

Interim Director of EEO and Compliance/Title IX and ADA/Section 504 Coordinator

Office of Equal Opportunity and Title IX

3100 Main, 7th Floor
Houston, TX 77002
(713) 718-8271
hcc.oeotix@hccs.edu (<mailto:hcc.oeotix@hccs.edu>)
<https://www.hccs.edu/oeotix/> (<https://www.hccs.edu/oeotix/>)

Mandatory Reporters

Under Texas Education Code 51.252 (formerly known as Senate Bill 212), HCC Instructors are mandatory reporters of sexual harassment, dating violence (domestic violence), sexual assault, and stalking. All instructors are required by law to report to the College's Title IX coordinator or Deputy Title IX coordinator all reports disclosed to them relating to sexual harassment, dating violence (domestic violence), sexual assault, and stalking alleged to have been committed by or against a person who was a student enrolled at or an employee of the institution at the time of the incident. Instructors are required by law to include all the information they know about the incident, including the name of the student(s), in the report to the College's Title IX coordinator or deputy Title IX coordinator.

Office of the Dean of Students

Contact the office of the Dean of Students to seek assistance in determining the correct complaint procedure to follow or to identify the appropriate academic dean or supervisor for informal resolution of complaints.

<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/> (<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/>)

Student Success

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:

- Reading the textbook
- Attending class in person and/or online
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the material using the course objectives as a guide.

Canvas Learning Management System

Canvas is HCC's Learning Management System (LMS), and can be accessed at the following URL:

<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

HCC Online Information and Policies

Here is the link to information about HCC Online classes, which includes access to the required Online Information Class Preview for all fully online classes: <https://www.hccs.edu/online/> (<https://www.hccs.edu/online/>)

Scoring Rubrics, Sample Assignments, etc.

Look in Canvas for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course. <https://eagleonline.hccs.edu/> (<https://eagleonline.hccs.edu/>)

Instructor and Student Responsibilities

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students during office hours, and before and after class as required

As a student, it is your responsibility to:

- Attend class in person and/or online
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook
- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Be aware of and comply with academic honesty policies in the [HCCS Student Handbook](https://www.hccs.edu/studenthandbook) (<https://www.hccs.edu/studenthandbook>)

Sensitive or Mature Course Content

In this college-level course, we may occasionally discuss sensitive or mature content. All members of the classroom environment, from your instructor to your fellow students, are expected to handle potentially controversial subjects with respect and consideration for one another's varied experiences and values.

EGLS3

The EGLS³ ([Evaluation for Greater Learning Student Survey System \(https://hccs.campuslabs.com/courseeval/\)](https://hccs.campuslabs.com/courseeval/)) will be available for most courses near the end of the term but before finals. Results are confidential and will be available to faculty and division chairs after the end of the term, after grades are due. Confidential means that responses to the survey will not be associated with your identity when provided to the faculty.

<https://www.hccs.edu/egls3> (<https://www.hccs.edu/egls3>)

Housing and Food Assistance for Students

If you are experiencing any hardship related to food, shelter, mental health, or other basic needs areas, please visit the Basic Needs page for resources (<https://www.hccs.edu/cares> (<https://www.hccs.edu/cares>)). You have the option to take the Basic Needs Questionnaire and ask to be contacted by a counselor for additional assistance or support (<https://www.hccs.edu/basicneeds> (<https://www.hccs.edu/basicneeds>)). Furthermore, please notify the professor if you are comfortable doing so.

Student Resources

Tutoring

HCC provides free and convenient academic support, in a large variety of subjects, to HCC students in both an online environment and in-person on campus. Tutoring is provided by HCC personnel in order to ensure that it is appropriate. Visit the HCC Tutoring Services website for more information at <https://hccs.edu/tutoring> (<https://hccs.edu/tutoring>).

Libraries

The HCC Library System consists of 9 libraries and 6 Electronic Resource Centers (ERCs) that are inviting places to study and collaborate on projects. Librarians are available both at the libraries and online to show you how to locate and use the resources you need. The libraries maintain a large selection of electronic resources as well as collections of books, magazines, newspapers, and audiovisual materials. The portal to all libraries' resources and services is the HCCS library web page at <https://library.hccs.edu> (<https://library.hccs.edu/>).

Supplementary Instruction

Supplemental Instruction is an academic enrichment and support program that uses peer-assisted study sessions to improve student retention and success in historically difficult courses. Peer Support is provided by students who have already succeeded in completion of the specified course, and who earned a grade of A or B. Find details at <https://www.hccs.edu/supplemental-instruction> (<https://www.hccs.edu/supplemental-instruction>)

Resources for Students:

<https://www.hccs.edu/covid19students> (<https://www.hccs.edu/covid19students>)

Basic Needs Resources:

<https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/> (<https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/>)

Student Basic Needs Application:

<https://www.hccs.edu/basicneeds> (<https://www.hccs.edu/basicneeds>)

COVID-19

Here's the link to the HCC information about COVID-19:

<https://www.hccs.edu/covid-19> (<https://www.hccs.edu/covid-19>)

Instructional Modalities

HCC offers many options for learning modalities and information may be obtained at <https://www.hccs.edu/campaigns/college-your-way/> (<https://www.hccs.edu/campaigns/college-your-way/>).

All students, regardless of their selected learning options, will still have access to the support available to help with their success, including tutoring, student life, basic needs support, career and employment services, counseling and ability services, and supplemental instruction. HCC also provides financial aid options.

In-Person (P)

In-Person gives students the opportunity to participate in class in person.

Online on a Schedule (WS)

Online on a Schedule allows students to take classes online, but at scheduled dates and times. Instead of visiting the campus for class, students log into the class online at the specified time they selected during registration. This gives students a safe and flexible learning option that allows for more interaction with professors and classmates without coming to campus. Access to a computer and WIFI are necessary to complete this class successfully.

Online Anytime (WW)

Online Anytime gives students the flexibility to complete coursework throughout the semester at times that works best for them. When a student enrolls in Online Anytime at the beginning of a semester, the course instructor will share pre-determined deadlines and requirements, along with the syllabus and full details of all assignments that must be completed to successfully finish the course. This option-most like a traditional online course -gives students the flexibility of completing coursework without visiting the campus. Access to a computer and WIFI is necessary to complete this class successfully.

Hybrid (H)

Hybrid provides students the opportunity to attend a lecture class meeting half-time in person and half-time remotely.

Hybrid Lab (HL)

Hybrid Lab-Based courses will be conducted in person and remotely, allowing HCC students access to essential hands-on, skills-based learning experiences needed for success.

Copyright Statement

In order to uphold the integrity of the academic environment and protect and foster a cohesive learning environment for all, HCC prohibits the unauthorized use of course materials. Materials shared in this course are based on my professional knowledge and experience as an instructor and are presented in an educational context for the students in the course. Authorized use of course materials is limited to personal study or educational uses. Material should not be shared, distributed, or sold outside the course without permission. Students are also explicitly forbidden in all circumstances from plagiarizing or appropriating course materials. This includes but is not limited to publicly posting quizzes, essays, or other materials. This prohibition extends not only during this course, but after. Sharing of the materials in any context will be a violation of the HCC Student Code of Conduct and may subject the student to discipline, as well as any applicable civil or criminal liability. Consequences for unauthorized sharing, plagiarizing, or other methods of academic dishonesty may range from a 0 on the specified assignment and/or up to expulsion from Houston Community College. Questions about this policy may be directed to me, your instructor, or to the Manager of Student Conduct and Academic Integrity.

Unauthorized Disclosure

"Unauthorized disclosure" occurs when any student provides instructional materials and/or assessments to other students in violation of a clear prohibition by the instructor. Examples include: posting assessment items to online sites such as Chegg or CourseHero; asking exam questions in forums like Reddit or Yahoo Answers; discussions of confidential question using Wechat or GroupMe, etc.

Our Vision

Houston Community College will deliver relevant, high-quality education and training, ensuring success for all students, our community, economy and beyond.

Course Calendar

Syllabus Modifications

The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.

Additional Information

Artificial Intelligence

Artificial Intelligence is the current, future discipline fostering the next generation of Computer Science, Networking, Cloud and High Performance Computing environments.

Degrees and Certificates

- Artificial Intelligence (A.I.) - AAS (Associate of Applied Science)

Degree program for Artificial Intelligence will prepare students for the following entry- level job roles:

- A.I. Application Developer
- A.I. Software Architect
- Artificial Intelligence Developer (software)

Employment

Examples of specific jobs held by AI professionals include:

- Software analysts and developers and programmers
- Computer scientists, computer engineers, cyber security specialists
- Algorithm specialists, Data Scientists, Data Engineers, Data Researchers
- Research scientists, engineering consultants, Cloud Computing Specialists
- Mechanical engineers and maintenance technicians.
- Manufacturing and electrical engineers. Software analysts and developers.

The estimated annual job openings is approx. 3,000+ jobs a year.

- Median Wages - \$79 hourly, \$92,000 - \$150,000 annually.
- Job Roles and the shift from Computer Software Developers to AI Developers.

Student Clubs

- Computer Science Association (CSA) club dit.csa@hccs.edu
- Women in Technology (WIT) club <https://hccs.presence.io/organization/women-in-technology>

Process for Expressing Concerns about the Course

If you have concerns about any aspect of this course, please reach out to your instructor for assistance first. If your instructor is not able to assist you, then you may wish to contact the Department Chair.

Liene Joshua Lo

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Office: C.152