Cover Sheet: Request 15324

CAP 4XXX – Spoken Dialogue Systems

Info

Process	Course|New|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Kristy Boyer keboyer@ufl.edu
Created	10/6/2020 12:47:24 PM
Updated	2/11/2021 4:16:00 PM
Description of request	Course Description Designing and building spoken dialogue systems. Fundamentals of speech recognition and generation, natural language understanding, dialogue management, task modeling, and voice user interface design.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Computer and Information Science and Engineering 19140000	Christina Gardner-McCune		10/30/2020
No document changes					
College	Recycled	ENG - College of Engineering	Heidi Dublin	Recycled back at the departments request. Please send back when ready to be reviewed.	12/7/2020
No document changes					
Department	Approved	ENG - Computer and Information Science and Engineering 19140000	Christina Gardner-McCune		2/1/2021
No document changes					
College	Approved	ENG - College of Engineering	Heidi Dublin	Approved by the HWCOE Curriculum Committee and Faculty Council.	2/11/2021
Spoken Dialogue Systems - Undergrad CAP 4XXX Feb 9 2021.docx Spoken Dialogue Systems - Grad CAP 6XXX Feb 8 2021 (1).docx					2/9/2021 2/8/2021
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			2/11/2021
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					

Step	Status	Group	User	Comment	Updated
College Notified					
No document changes					

Course|New for request 15324

Info

Request: CAP 4XXX – Spoken Dialogue Systems
Description of request: Course Description
Designing and building spoken dialogue systems. Fundamentals of speech recognition and generation, natural language understanding, dialogue management, task modeling, and voice user interface design.

Submitter: Kristy Boyer keboyer@ufl.edu
Created: 2/9/2021 1:02:34 PM
Form version: 3

Responses

Recommended Prefix
Enter the three letter code indicating placement of course within the discipline (e.g., POS, ATR, ENC). Note that for new course proposals, the State Common Numbering System (SCNS) may assign a different prefix.

Response:
CAP

Course Level
Select the one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).

Response:
4

Course Number
Enter the three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles. For new course requests, this may be XXX until SCNS assigns an appropriate number.

Response:
XXX

Category of Instruction
Indicate whether the course is introductory, intermediate or advanced. Introductory courses are those that require no prerequisites and are general in nature. Intermediate courses require some prior preparation in a related area. Advanced courses require specific competencies or knowledge relevant to the topic prior to enrollment.

Response:
Joint (Ugrad/Grad)

• 1000 level = Introductory undergraduate
• 2000 level = Introductory undergraduate
• 3000 level = Intermediate undergraduate
• 4000 level = Advanced undergraduate
• 5000 level = Introductory graduate
• 6000 level = Intermediate graduate
• 7000 level = Advanced graduate
• 4000/5000= Joint undergraduate/graduate
• 4000/6000= Joint undergraduate/graduate

Joint undergraduate/graduate courses must be approved by the UCC and the Graduate Council)

Lab Code
Enter the lab code to indicate whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).

Response:
None

Course Title
*Enter the title of the course as it should appear in the Academic Catalog. There is a 100 character limit for course titles. *

Response:
Spoken Dialogue Systems

Transcript Title
Enter the title that will appear in the transcript and the schedule of courses. Note that this must be limited to 30 characters (including spaces and punctuation).

Response:
Spoken Dialogue Systems

Degree Type
Select the type of degree program for which this course is intended.

Response:
Baccalaureate

Delivery Method(s)
Indicate all platforms through which the course is currently planned to be delivered.

Response:
On-Campus

Co-Listing
Will this course be jointly taught to undergraduate, graduate, and/or professional students?

Response:
Yes

Co-Listing Explanation
Please detail how coursework differs for undergraduate, graduate, and/or professional students. Additionally, please upload a copy of both the undergraduate and graduate syllabus to the request in .pdf format. For more information please see the Co-Listed Graduate Undergraduate Courses Policy.

Response:
The graduate version of this course requires the same learning objectives as undergraduates except 1) undergraduate students are expected to apply statistical analysis methodologies whereas graduate students are expected deeper mastery that allows them to select from among different methodologies to conduct the dialogue analyses at hand; 2) graduate students must demonstrate leadership within their project teams by designing, building, iteratively refining, and finally evaluating their system. Undergraduates must contribute as productive team members but are not expected to lead a team.

Effective Term
Select the requested term that the course will first be offered. Selecting "Earliest" will allow the course to be active in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's best projection. Courses cannot be implemented retroactively, and therefore the actual effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires 2 to 6 weeks after approval of the course at UF.

Response:
Fall

Effective Year
Select the requested year that the course will first be offered. See preceding item for further information.

Response:
Earliest Available

Rotating Topic?
Select "Yes" if the course can have rotating (varying) topics. These course titles can vary by topic in the Schedule of Courses.

Response:
No

Repeatable Credit?
Select "Yes" if the course may be repeated for credit. If the course will also have rotating topics, be sure to indicate this in the question above.

Response:
No

Amount of Credit
Select the number of credits awarded to the student upon successful completion, or select "Variable" if the course will be offered with variable credit and then indicate the minimum and maximum credits per section. Note that credit hours are regulated by Rule 6A-10.033, FAC. If you select "Variable" for the amount of credit, additional fields will appear in which to indicate the minimum and maximum number of total credits.

Response:
3

S/U Only?
Select "Yes" if all students should be graded as S/U in the course. Note that each course must be entered into the UF curriculum inventory as either letter-graded or S/U. A course may not have both options. However, letter-graded courses allow students to take the course S/U with instructor permission.

Response:
No

Contact Type
Select the best option to describe course contact type. This selection determines whether base hours or headcount hours will be used to determine the total contact hours per credit hour. Note that the headcount hour options are for courses that involve contact between the student and the professor on an individual basis.

Response:
Regularly Scheduled

• Regularly Scheduled [base hr]
• Thesis/Dissertation Supervision [1.0 headcount hr]
• Directed Individual Studies [0.5 headcount hr]
• Supervision of Student Interns [0.8 headcount hr]
• Supervision of Teaching/Research [0.5 headcount hr]
• Supervision of Cooperative Education [0.8 headcount hr]

Contact the Office of Institutional Planning and Research (352-392-0456) with questions regarding contact type.

Weekly Contact Hours
Indicate the number of hours instructors will have contact with students each week on average throughout the duration of the course.

Response:
3

Course Description
Provide a brief narrative description of the course content. This description will be published in the Academic Catalog and is limited to 500 characters or less. See course description guidelines.

Response:
Designing and building spoken dialogue systems. Fundamentals of speech recognition and generation, natural language understanding, dialogue management, task modeling, and voice user interface design.

Prerequisites
Indicate all requirements that must be satisfied prior to enrollment in the course. Prerequisites will be automatically checked for each student attempting to register for the course. The prerequisite will be published in the Academic Catalog and must be formulated so that it can be enforced in the registration system. Please note that upper division courses (i.e., intermediate or advanced level of instruction) must have proper prerequisites to target the appropriate audience for the course.
Courses level 3000 and above must have a prerequisite.
Please verify that any prerequisite courses listed are active courses.

Response:

COP 3530 & STA 2023

Completing Prerequisites on UCC forms:

• Use "&" and "or" to conjoin multiple requirements; do not used commas, semicolons, etc.
• Use parentheses to specify groupings in multiple requirements.
• Specifying a course prerequisite (without specifying a grade) assumes the required passing grade is D-. In order to specify a different grade, include the grade in parentheses immediately after the course number. For example, "MAC 2311(B)" indicates that students are required to obtain a grade of B in Calculus I. MAC2311 by itself would only require a grade of D-.
• Specify all majors or minors included (if all majors in a college are acceptable the college code is sufficient).
• "Permission of department" is always an option so it should not be included in any prerequisite or co-requisite.
• If the course prerequisite should list a specific major and/or minor, please provide the plan code for that major/minor (e.g., undergraduate Chemistry major = CHY_BS, undergraduate Disabilities in Society minor = DIS_UMN)

Example: A grade of C in HSC 3502, passing grades in HSC 3057 or HSC 4558, and undergraduate PBH student should be written as follows: HSC 3502(C) & (HSC 3057 or HSC 4558) & UGPBH
* *

Co-requisites
Indicate all requirements that must be taken concurrently with the course. Co-requisites are not checked by the registration system. If there are none please enter N/A.

Response:
N/A

Rationale and Placement in Curriculum
Explain the rationale for offering the course and its place in the curriculum.

Response:
This course is at the advanced undergraduate level where students are prepared with multiple programming language paradigms and the ability to create large, complex projects as part of a team.

Course Objectives
Describe the core knowledge and skills that student should derive from the course. The objectives should be both observable and measurable.

Response:
At the end of this course, students will be able to:
•   Design voice user interfaces and dialogue systems that follow best practices
•   Compare and contrast different types of dialogue managers and dialogue personas
•   Implement dialogue understanding pipelines including speech recognition; part of speech tagging; dialogue
act tagging; response selection; and speech generation
•   Use appropriate statistical paradigm to analyze different forms of dialogue data
•   Describe the current state of the art in commercial and research dialogue systems
•   Annotate and conduct agreement studies on dialogue corpora
•   Plan and execute the evaluation of a dialogue system or voice user interface

Course Textbook(s) and/or Other Assigned Reading
*Enter the title, author(s) and publication date of textbooks and/or readings that will be assigned. Please provide specific examples to evaluate the course and identify required textbooks. *

Response:
Required Textbooks and Software
• Speech & Language Processing
• Jurafsky & Martin
• 3rd edition, Forthcoming
• ISBN Forthcoming

Recommended Materials
• Designing Voice User Interfaces
• Cathy Pearl
• 2017, 1st Edition
• 978-1-491-85541-3

Weekly Schedule of Topics
Provide a projected weekly schedule of topics. This should have sufficient detail to evaluate how the course would meet current curricular needs and the extent to which it overlaps with existing courses at UF.

Response:
Week 1:   What is a Dialogue System
The Linguistics of Conversation
Week 2:   Introduction to dialogue system development frameworks
                 Dialogue systems & the mechanics of conversation
Week 3:   Dialogue systems & the mechanics of conversation (continued)
                 The mechanics of conversation: Voice user interface design   / Deadline to form
teams
                 Voice user interface design: personas and system role   / Homework 1 due
Week 4:   Voice user interface design: Iterative prototyping
                 Development, testing, and tuning methodologies
                 Speech act theory   /Homework 2 due
Week 5:   Dialogue Act labeling   /Project proposal
presentations
Week 6:   Inter-rater reliability
                 Intro to Statistics for Evaluating Dialogue Systems
Week 7:   Evaluating Dialogue Systems   /Homework 3 due
                 Manual labeling of corpora for system evaluation
                 PARADISE dialogue system evaluation
Week 8:   An NLP view on state-of-the-art systems   /Homework 4 due
Week 9:   EXAM 1
Week 10:   Introduction to NLP algorithms
Week 11:   Evaluation Round Robin (all teams test each other's prototype dialogue systems)
Week 12:   Regular expressions & text normalization
                 Edit distance
                 n-gram language models
Week 13:   Vector semantics   /Evaluation writeup of
prototype
dialogue systems
                 Neural networks for language modeling   /Homework 5 due
      Part of Speech tagging
Week 14:   Sequence processing with recurrent networks
                 Discourse Coherence   /Homework 6 due
Week 15:   Question Answering
                 Final evaluation round robin (all teams test each other's final dialogue systems)

Last day of class: Final project writeups due

Final exam period: Final presentations of project writeups

Grading Scheme
List the types of assessments, assignments and other activities that will be used to determine the course grade, and the percentage contribution from each. This list should have sufficient detail to evaluate the course rigor and grade integrity. Include details about the grading rubric and percentage breakdowns for determining grades. If participation and/or attendance are part of the students grade, please provide a rubric or details regarding how those items will be assessed.

Response:
Assignment   Percentage of Final Grade
Exam #1   15%
Exam #2   15%
Project Proposal   5%
Project prototype writeup/evaluation   10%
Final project writeup/evaluation   15%
Final project presentation   10%
Homeworks   30%

Instructor(s)
Enter the name of the planned instructor or instructors, or "to be determined" if instructors are not yet identified.

Response:
Kristy Boyer
Juan Gilbert

Attendance & Make-up
Please confirm that you have read and understand the University of Florida Attendance policy.
A required statement statement related to class attendance, make-up exams and other work will be included in the syllabus and adhered to in the course. Courses may not have any policies which conflict with the University of Florida policy. The following statement may be used directly in the syllabus.

• Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Response:
Yes

Accomodations
Please confirm that you have read and understand the University of Florida Accommodations policy.
A statement related to accommodations for students with disabilities will be included in the syllabus and adhered to in the course. The following statement may be used directly in the syllabus:

• Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Response:
Yes

UF Grading Policies for assigning Grade Points
Please confirm that you have read and understand the University of Florida Grading policies.
Information on current UF grading policies for assigning grade points is require to be included in the course syllabus. The following link may be used directly in the syllabus:

• *https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx*

    Response:
Yes

Course Evaluation Policy
Course Evaluation Policy
Please confirm that you have read and understand the University of Florida Course Evaluation Policy.
A statement related to course evaluations will be included in the syllabus. The following statement may be used directly in the syllabus:

• *Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/public-results/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.*

* *

    Response:
Yes

<p style="text-align:center">**Spoken Dialogue Systems**
CAP 6XXX
Class Periods: [Mon, Wed, Fri 2:00-2:50pm]
Location: Classroom location
Academic Term: Fall/Spring NNNN</p>

Instructor:
Name
Email Address
Office Phone Number
Office Hours: Days of week, hours available, office location

Teaching Assistant/Peer Mentor/Supervised Teaching Student:
Please contact through the Canvas website
- Name, email address, office location, office hours
- Name, email address, office location, office hours

Course Description
Designing and building spoken dialogue systems. Fundamentals of speech recognition and generation, natural language understanding, dialogue management, task modeling, and voice user interface design.

Course Pre-Requisites / Co-Requisites
- Data structures (such as COP 3530) or equivalent, or permission of the instructor.
- Elementary statistics (such as STA 2023) or equivalent, or permission of the instructor.

Course Objectives
At the end of this course, students will be able to:
- Design voice user interfaces and dialogue systems that follow best practices
- Compare and contrast different types of dialogue managers and dialogue personas
- Implement dialogue understanding pipelines including speech recognition; part of speech tagging; dialogue act tagging; response selection; and speech generation
- Select and use appropriate statistical paradigm to analyze different forms of dialogue data
- Describe the current state of the art in commercial and research dialogue systems
- Annotate and conduct agreement studies on dialogue corpora
- Demonstrate leadership on a project team to design, build, refine, and test a spoken dialogue system
- Plan and execute the evaluation of a dialogue system or voice user interface

Materials and Supply Fees
N/A

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Medium
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3. An ability to communicate effectively with a range of audiences	High

4.	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	Medium
5.	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	High
6.	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Medium
7.	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

Required Textbooks and Software
- Speech & Language Processing
- Jurafsky & Martin
- 3rd edition, Forthcoming
- ISBN Forthcoming

Recommended Materials
- Designing Voice User Interfaces
- Cathy Pearl
- 2017, 1st Edition
- 978-1-491-85541-3

Course Schedule

Week 1: What is a Dialogue System
         The Linguistics of Conversation
Week 2: Introduction to dialogue system development frameworks
         Dialogue systems & the mechanics of conversation
Week 3: Dialogue systems & the mechanics of conversation (continued)
         The mechanics of conversation: Voice user interface design / Deadline to form teams
         Voice user interface design: personas and system role   / Homework 1 due
Week 4: Voice user interface design: Iterative prototyping
         Development, testing, and tuning methodologies
         Speech act theory   /Homework 2 due
Week 5: Dialogue Act labeling   /Project proposal presentations
Week 6: Inter-rater reliability
         Intro to Statistics for Evaluating Dialogue Systems
Week 7: Evaluating Dialogue Systems   /Homework 3 due
         Manual labeling of corpora for system evaluation
         PARADISE dialogue system evaluation
Week 8: An NLP view on state-of-the-art systems   /Homework 4 due
Week 9: Review and In-class EXAM 1
Week 10: Introduction to NLP algorithms
Week 11: Evaluation Round Robin (all teams test each other's prototype dialogue systems)
Week 12: Regular expressions & text normalization
         Edit distance
         n-gram language models
Week 13: Vector semantics   /Evaluation writeup of prototype

		dialogue systems
Neural networks for language modeling		/Homework 5 due
Part of Speech tagging		

Week 14:   Sequence processing with recurrent networks
            Discourse Coherence   /Homework 6 due

Week 15:   Question Answering
            Final evaluation round robin (all teams test each other's final dialogue systems)
            Last day of class:
            Final project writeups and team organizational report (graduate students only) due
            Final exam period: Final presentations of project writeups

Projects

Each student must complete a term project as part of a group. This project will involve implementing a fully functional dialogue system or voice user interface. In order to ensure progress is made throughout the semester, several presentations will be made by project teams. First, they will propose their projects and receive approval and/or feedback from the teaching staff regarding scope and plans. Second, teams will provide a project waypoint update in which they present their incremental progress. When the dialogue systems are complete, students will bring demo versions to class for an evaluation "round robin" which will facilitate data collection for evaluating the dialogue system using techniques learned in class. The final project writeup must be between 8-10 pages in length. For systems projects, it will include a description of the system and its evaluation results. Source code, data, processing scripts, and raw results of statistical analyses must be available upon request but are NOT to be included in the 8-10 page writeup. Final project presentations will be held during the final examination period as indicated in the course schedule.

F2F Course Policy in Response to COVID-19

We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.

- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.

- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.

- Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.

- If you are experiencing COVID-19 symptoms (Click here for guidance from the CDC on symptoms of coronavirus), please use the UF Health screening system and follow the instructions on whether you are able to attend class. Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms.
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies.

Attendance Policy, Class Expectations, and Make-Up Policy

You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives. Excused absences must be consistent with university policies in the graduate catalog (https://catalog.ufl.edu/graduate/) and require appropriate documentation. Any make-up test will be comprehensive and will be held after the final day of class.

Evaluation of Grades

Assignment	Percentage of Final Grade
Exam #1	15%
Exam #2	15%
Project Proposal	5%
Project prototype writeup/evaluation	10%
Final project writeup/evaluation	12%
Team leadership report	3%
Final project presentation	10%
Homeworks	30%

Grading Policy

Percent	Grade	Grade Points
93.0 - 100.0	A	4.00
90.0-92.9	A-	3.67
87.0 - 89.9	B+	3.33
83.0 - 86.9	B	3.00
80.0 – 82.9	B-	2.67
77.0 - 79.9	C+	2.33
73.0 - 76.9	C	2.00
70.0 – 72.9	C-	1.67
67.0 - 69.9	D+	1.33
63.0 - 66.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	F	0.00

More information on UF grading policy may be found at:
http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:
• Your academic advisor or Graduate Program Coordinator
• Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
• Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:
Health and Wellness

> **U Matter, We Care:**
> Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.
>
> **Counseling and Wellness Center:** http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
>
> **Sexual Discrimination, Harassment, Assault, or Violence**

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall*, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus*: https://care.dso.ufl.edu.

On-Line Students Complaints*: http://www.distance.ufl.edu/student-complaint-process.

Spoken Dialogue Systems
CAP 4XXX
Class Periods: [Mon,Wed,Fri 2:00-2:50pm]
Location: Classroom location
Academic Term: Fall/Spring NNNN

Instructor:
Name
Email Address
Office Phone Number
Office Hours: Days of week, hours available, office location

Teaching Assistant/Peer Mentor/Supervised Teaching Student:
Please contact through the Canvas website
- Name, email address, office location, office hours
- Name, email address, office location, office hours

Course Description
Designing and building spoken dialogue systems. Fundamentals of speech recognition and generation, natural language understanding, dialogue management, task modeling, and voice user interface design.

Course Pre-Requisites / Co-Requisites
COP 3530 & STA 2023

Course Objectives
At the end of this course, students will be able to:
- Design voice user interfaces and dialogue systems that follow best practices
- Compare and contrast different types of dialogue managers and dialogue personas
- Implement dialogue understanding pipelines including speech recognition; part of speech tagging; dialogue act tagging; response selection; and speech generation
- Use appropriate statistical paradigm to analyze different forms of dialogue data
- Describe the current state of the art in commercial and research dialogue systems
- Annotate and conduct agreement studies on dialogue corpora
- Plan and execute the evaluation of a dialogue system or voice user interface

Materials and Supply Fees
N/A

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Medium
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3. An ability to communicate effectively with a range of audiences	High
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the	Medium

impact of engineering solutions in global, economic, environmental, and societal contexts	
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	High
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Medium
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

Required Textbooks and Software
- Speech & Language Processing
- Jurafsky & Martin
- 3rd edition, Forthcoming
- ISBN Forthcoming

Recommended Materials
- Designing Voice User Interfaces
- Cathy Pearl
- 2017, 1st Edition
- 978-1-491-85541-3

Course Schedule

Week 1:	What is a Dialogue System The Linguistics of Conversation	
Week 2:	Introduction to dialogue system development frameworks Dialogue systems & the mechanics of conversation	
Week 3:	Dialogue systems & the mechanics of conversation (continued)	
	The mechanics of conversation: Voice user interface design	/ Deadline to form teams
	Voice user interface design: personas and system role	/ Homework 1 due
Week 4:	Voice user interface design: Iterative prototyping Development, testing, and tuning methodologies	
	Speech act theory	/Homework 2 due
Week 5:	Dialogue Act labeling	/Project proposal presentations
Week 6:	Inter-rater reliability Intro to Statistics for Evaluating Dialogue Systems	
Week 7:	Evaluating Dialogue Systems	/Homework 3 due
	Manual labeling of corpora for system evaluation PARADISE dialogue system evaluation	
Week 8:	An NLP view on state-of-the-art systems	/Homework 4 due
Week 9:	Review and in-class EXAM 1	
Week 10:	Introduction to NLP algorithms	
Week 11:	Evaluation Round Robin (all teams test each other's prototype dialogue systems)	
Week 12:	Regular expressions & text normalization Edit distance n-gram language models	
Week 13:	Vector semantics	/Evaluation writeup of prototype dialogue systems
	Neural networks for language modeling Part of Speech tagging	/Homework 5 due

Week 14:	Sequence processing with recurrent networks	
	Discourse Coherence	/Homework 6 due
Week 15:	Question Answering	
	Final evaluation round robin (all teams test each other's final dialogue systems)	
	Last day of class: Final project writeups due	
	Final exam period: Final presentations of project writeups	

Projects

Each student must complete a term project as part of a group. This project will involve implementing a fully functional dialogue system or voice user interface. In order to ensure progress is made throughout the semester, several presentations will be made by project teams. First, they will propose their projects and receive approval and/or feedback from the teaching staff regarding scope and plans. Second, teams will provide a project waypoint update in which they present their incremental progress. When the dialogue systems are complete, students will bring demo versions to class for an evaluation "round robin" which will facilitate data collection for evaluating the dialogue system using techniques learned in class. The final project writeup must be between 8-10 pages in length. For systems projects, it will include a description of the system and its evaluation results. Source code, data, processing scripts, and raw results of statistical analyses must be available upon request but are NOT to be included in the 8-10 page writeup. Final project presentations will be held during the final examination period as indicated in the course schedule.

F2F Course Policy in Response to COVID-19

We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.

- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.

- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.

- Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.

- If you are experiencing COVID-19 symptoms (Click here for guidance from the CDC on symptoms of coronavirus), please use the UF Health screening system and follow the instructions on whether you are able to attend class. Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms.
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies.

Attendance Policy, Class Expectations, and Make-Up Policy
You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives. Excused absences must be consistent with university policies in the undergraduate catalog (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) and require appropriate documentation. Any make-up test will be comprehensive and will be held after the final day of class.

Evaluation of Grades

Assignment	Percentage of Final Grade
Exam #1	15%
Exam #2	15%
Project Proposal	5%
Project prototype writeup/evaluation	10%
Final project writeup/evaluation	15%
Final project presentation	10%
Homeworks	30%

Grading Policy

Percent	Grade	Grade Points
93.0 - 100.0	A	4.00
90.0-92.9	A-	3.67
87.0 - 89.9	B+	3.33
83.0 - 86.9	B	3.00
80.0 – 82.9	B-	2.67
77.0 - 79.9	C+	2.33
73.0 - 76.9	C	2.00
70.0 – 72.9	C-	1.67
67.0 - 69.9	D+	1.33
63.0 - 66.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	F	0.00

More information on UF grading policy may be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Students Requiring Accommodations
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

University Honesty Policy
UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment
The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:
• Your academic advisor or Graduate Program Coordinator
• Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
• Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use
All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy
There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:

<u>Health and Wellness</u>

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus*:* https://care.dso.ufl.edu.

On-Line Students Complaints*:* http://www.distance.ufl.edu/student-complaint-process.