Class Schedule - Fall 2025

Computer Science

Siebel School of Computing and Data Science
Head of Department: Nancy Amato
Department Office: 2232 Siebel Center, 201 N. Goodwin Avenue, Urbana
Phone: 217-333-3426
www.cs.illinois.edu

CS 100 **Computer Science Orientation** credit: 1 hours.

Introduction to Computer Science as a field and career for incoming first year and external transfer students in the computer science majors. Overview of the field and specific examples of problem areas and methods of solution.

CRN	Type	Section	Time	Days	Location	Instructor
30094	Lecture	AL1	03:00 PM - 03:50 PM	F	THEAT - Lincoln Hall	Shaffer, E Tychonievich, L
Credit Hours: 1 hours Meets 25-Aug-25 - 17-Oct-25. Restricted to First Time Freshman students. Restricted to Computer Science or Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science & Advertising or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s). Restricted to Undergrad - Urbana-Champaign. This course is intended for Freshman in CS and CS related majors.						

CS 101 **Intro Computing: Engrg & Sci** credit: 3 hours.

Fundamental principles, concepts, and methods of computing, with emphasis on applications in the physical sciences and engineering. Basic problem solving and programming techniques; fundamental algorithms and data structures; use of computers in solving engineering and scientific problems. Intended for engineering and science majors. Prerequisite: One of MATH 220 or MATH 221 or MATH 231 or MATH 241.

Students must register for one lab-discussion and one lecture section. Engineering students must obtain a dean's approval to drop this course after the second week of instruction.

CRN	Type	Section	Time	Days	Location	Instructor
35879	Lecture-Discussion	AL1	10:00 AM - 10:50 AM	MW	AUD - Foellinger Auditorium	Fowler, M Ritschel, N
Quantitative Reasoning II course. Restricted to Undergrad - Urbana-Champaign. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister						
35886	Laboratory-Discussion	AYA	01:00 PM - 02:50 PM	M	0018 - Campus Instructional Facility	
Quantitative Reasoning II course.						
35889	Laboratory-Discussion	AYB	03:00 PM - 04:50 PM	M	0018 - Campus Instructional Facility	

Quantitative Reasoning II course.						
35893	Laboratory-Discussion	AYD	09:00 AM - 10:50 AM	T	0018 - Campus Instructional Facility	
Quantitative Reasoning II course.						
61077	Laboratory-Discussion	AYE	11:00 AM - 12:50 PM	T	2036 - Campus Instructional Facility	
Quantitative Reasoning II course.						
35915	Laboratory-Discussion	AYF	01:00 PM - 02:50 PM	T	3038 - Campus Instructional Facility	
Quantitative Reasoning II course.						
35896	Laboratory-Discussion	AYG	03:00 PM - 04:50 PM	T	2039 - Campus Instructional Facility	
Quantitative Reasoning II course.						
35902	Laboratory-Discussion	AYH	01:00 PM - 02:50 PM	W	0018 - Campus Instructional Facility	
Quantitative Reasoning II course.						
35918	Laboratory-Discussion	AYK	09:00 AM - 10:50 AM	R	0018 - Campus Instructional Facility	Johns, J
Quantitative Reasoning II course.						
61078	Laboratory-Discussion	AYL	11:00 AM - 12:50 PM	R	2036 - Campus Instructional Facility	
Quantitative Reasoning II course.						
35910	Laboratory-Discussion	AYM	01:00 PM - 02:50 PM	R	3038 - Campus Instructional Facility	
Quantitative Reasoning II course.						
35913	Laboratory-Discussion	AYN	03:00 PM - 04:50 PM	R	3038 - Campus Instructional Facility	
Quantitative Reasoning II course.						
62683	Laboratory-Discussion	AYP	09:00 AM - 10:50 AM	F	2036 - Campus Instructional Facility	

Quantitative Reasoning II course.						
62913	Laboratory-Discussion	AYQ	11:00 AM - 12:50 PM	F	2036 - Campus Instructional Facility	
Quantitative Reasoning II course.						
62914	Laboratory-Discussion	AYR	01:00 PM - 02:50 PM	F	2036 - Campus Instructional Facility	
Quantitative Reasoning II course.						
75847	Laboratory-Discussion	AYS	03:00 PM - 04:50 PM	F	2036 - Campus Instructional Facility	
Quantitative Reasoning II course.						

CS 105 **Intro Computing: Non-Tech** credit: 3 hours.

Computing as an essential tool of academic and professional activities. Functions and interrelationships of computer system components: hardware, systems and applications software, and networks. Widely used application packages such as spreadsheets and databases. Concepts and practice of programming for the solution of simple problems in different application areas. Intended for non-science and non-engineering majors. Prerequisite: MATH 112.

Students must register for one lab-discussion and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
35823	Lecture	AL1	03:30 PM - 04:20 PM	MF	0027/1025 - Campus Instructional Facility	Lewis, C
Quantitative Reasoning I course. Restricted to Undergrad - Urbana-Champaign. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister						
47174	Laboratory-Discussion	AYA	03:00 PM - 04:20 PM	T	70B - Wohlers Hall	
Quantitative Reasoning I course.						
35827	Laboratory-Discussion	AYB	12:30 PM - 01:50 PM	W	70B - Wohlers Hall	
Quantitative Reasoning I course.						
35828	Laboratory-Discussion	AYC	01:00 PM - 02:20 PM	R	70B - Wohlers Hall	
Quantitative Reasoning I course.						
35847	Laboratory-Discussion	AYD	02:30 PM - 03:50 PM	R	70B - Wohlers Hall	
Quantitative Reasoning I course.						

35833	Laboratory-Discussion	AYG	09:30 AM - 10:50 AM	T	101 - 901 W Oregon	
Quantitative Reasoning I course.						
35835	Laboratory-Discussion	AYH	11:00 AM - 12:20 PM	T	101 - 901 W Oregon	
Quantitative Reasoning I course.						
35854	Laboratory-Discussion	AYP	09:30 AM - 10:50 AM	R	101 - 901 W Oregon	
Quantitative Reasoning I course.						
35856	Laboratory-Discussion	AYQ	11:00 AM - 12:20 PM	R	101 - 901 W Oregon	
Quantitative Reasoning I course.						
35858	Laboratory-Discussion	AYR	04:00 PM - 05:20 PM	R	70B - Wohlers Hall	
Quantitative Reasoning I course.						

CS 107 **Data Science Discovery** credit: 4 hours.

Same as IS 107 and STAT 107. See STAT 107.

This course satisfies the General Education Criteria for a:
Quantitative Reasoning I

CRN	Type	Section	Time	Days	Location	Instructor
71813	Lecture	L1	11:00 AM - 11:50 AM	MWF	THEAT - Lincoln Hall	Fagen-Ulmschneider, W Flanagan, K
Quantitative Reasoning I course. Not intended for Statistics or Statistics & Computer Science or Information Sciences + DS or Astronomy + Data Science or Finance + Data Science or Accountancy + Data Science or Business + Data Science or Chemical Engr + Data Science or Molecular & Cellular Bio + DS or Materials Sci & Engr + DS major(s). Restricted to Undergrad - Urbana-Champaign. Students who are not in an X+DS major should register for this section. Students registering for this lecture are required to also register for one lab section. Lab sections require the use of a laptop. Students are highly encouraged to bring their own laptops to class. If you do not have the means to do so, the course instructor can provide a set of campus resources to assist you. Restricted to First Time Freshman students.						
78226	Lecture	L2	09:00 AM - 09:50 AM	MWF	AUD - Foellinger Auditorium	Fagen-Ulmschneider, W Flanagan, K
Quantitative Reasoning I course. Not intended for Statistics or Statistics & Computer Science or Information Sciences + DS or Astronomy + Data Science or Finance + Data Science or Accountancy + Data Science or Business + Data Science or Chemical Engr + Data Science or Molecular & Cellular Bio + DS or Materials Sci & Engr + DS major(s). Restricted to Undergrad - Urbana-Champaign. Students who are not in an X+DS major should register for this section. Students registering for this lecture are required to also register for one lab section. Lab sections require the use of a laptop. Students are highly encouraged to bring their own laptops to class. If you do not have the means to do so, the course instructor can provide a set of campus resources to assist you.						

Restricted to First Time Freshman students.

79489	Lecture	X1	11:00 AM - 11:50 AM	MWF	THEAT - Lincoln Hall	Fagen-Ulmschneider, W Flanagan, K

Quantitative Reasoning I course.
Restricted to Information Sciences + DS or Astronomy + Data Science or Finance + Data Science or Accountancy + Data Science or Business + Data Science or Chemical Engr + Data Science or Molecular & Cellular Bio + DS or Materials Sci & Engr + DS major(s). Students who have enrolled in an X+DS major should register for this section. Students registering for this lecture are required to also register for one lab section. Lab sections require the use of a laptop. Students are highly encouraged to bring their own laptops to class. If you do not have the means to do so, the course instructor can provide a set of campus resources to assist you.
Restricted to First Time Freshman students.

80908	Lecture	X2	09:00 AM - 09:50 AM	MWF	AUD - Foellinger Auditorium	Fagen-Ulmschneider, W Flanagan, K

Quantitative Reasoning I course.
Restricted to Information Sciences + DS or Astronomy + Data Science or Finance + Data Science or Accountancy + Data Science or Business + Data Science or Chemical Engr + Data Science or Molecular & Cellular Bio + DS or Materials Sci & Engr + DS major(s). Students who have enrolled in an X+DS major should register for this section. Students registering for this lecture are required to also register for one lab section. Lab sections require the use of a laptop. Students are highly encouraged to bring their own laptops to class. If you do not have the means to do so, the course instructor can provide a set of campus resources to assist you.
Restricted to First Time Freshman students.

71814	Laboratory-Discussion	Y01	12:30 PM - 01:50 PM	W	164 - Noyes Laboratory	

Quantitative Reasoning I course.
This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.

71815	Laboratory-Discussion	Y02	12:30 PM - 01:50 PM	W	1028 - Lincoln Hall	

Quantitative Reasoning I course.
This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.

71816	Laboratory-Discussion	Y03	12:30 PM - 01:50 PM	W	115 - David Kinley Hall	

Quantitative Reasoning I course.
This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.

71817	Laboratory-Discussion	Y04	02:00 PM - 03:20 PM	W	430 - Armory	

Quantitative Reasoning I course.
This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.

71818	Laboratory-Discussion	Y05	02:00 PM - 03:20 PM	W	125 - David Kinley Hall	

Quantitative Reasoning I course.
This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.

71819	Laboratory-Discussion	Y06	02:00 PM - 03:20 PM	W	113 - David Kinley Hall	

Quantitative Reasoning I course. This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.						
71820	Laboratory-Discussion	Y07	02:00 PM - 03:20 PM	W	2018 - Campus Instructional Facility	
Quantitative Reasoning I course. This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.						
71822	Laboratory-Discussion	Y08	03:30 PM - 04:50 PM	W	307 - David Kinley Hall	
Quantitative Reasoning I course. This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.						
71823	Laboratory-Discussion	Y09	03:30 PM - 04:50 PM	W	313 - Davenport Hall	
Quantitative Reasoning I course. This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.						
71824	Laboratory-Discussion	Y10	03:30 PM - 04:50 PM	W	312 - David Kinley Hall	
Quantitative Reasoning I course. This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.						
71825	Laboratory-Discussion	Y11	03:30 PM - 04:50 PM	W	115 - David Kinley Hall	
Quantitative Reasoning I course. This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.						
77320	Laboratory-Discussion	Y12	05:00 PM - 06:20 PM	W	313 - Davenport Hall	
Quantitative Reasoning I course.						
77323	Laboratory-Discussion	Y13	05:00 PM - 06:20 PM	W	1136 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course.						
77324	Laboratory-Discussion	Y14	05:00 PM - 06:20 PM	W	G32 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course.						
77325	Laboratory-Discussion	Y15	09:30 AM - 10:50 AM	R	320 - Mumford Hall	
Quantitative Reasoning I course.						
77326	Laboratory-Discussion	Y16	09:30 AM - 10:50 AM	R	3018 - Campus Instructional Facility	

Quantitative Reasoning I course.						
77327	Laboratory-Discussion	Y17	08:00 AM - 09:20 AM	R	136 - Armory	
Quantitative Reasoning I course.						
78680	Laboratory-Discussion	Y18	08:00 AM - 09:20 AM	R	300 - Noyes Laboratory	
Quantitative Reasoning I course.						
78682	Laboratory-Discussion	Y19	12:30 PM - 01:50 PM	R	242 - Bevier Hall	
Quantitative Reasoning I course.						
78686	Laboratory-Discussion	Y20	12:30 PM - 01:50 PM	R	147 - Loomis Laboratory	
Quantitative Reasoning I course.						
78688	Laboratory-Discussion	Y21	02:00 PM - 03:20 PM	R	215 - Gregory Hall	
Quantitative Reasoning I course.						
78690	Laboratory-Discussion	Y22	02:00 PM - 03:20 PM	R	4101 - Materials Science & Eng Bld	
Quantitative Reasoning I course.						
78693	Laboratory-Discussion	Y23	03:30 PM - 04:50 PM	R	1065 - Lincoln Hall	
Quantitative Reasoning I course.						
78695	Laboratory-Discussion	Y24	03:30 PM - 04:50 PM	R	104 - English Building	
Quantitative Reasoning I course.						
78727	Laboratory-Discussion	Y25	03:30 PM - 04:50 PM	R	137 - Armory	
Quantitative Reasoning I course.						
78730	Laboratory-Discussion	Y26	03:30 PM - 04:50 PM	R	303 - English Building	
Quantitative Reasoning I course.						
78733	Laboratory-Discussion	Y27	05:00 PM - 06:20 PM	R	313 - Davenport Hall	
Quantitative Reasoning I course.						

78736	Laboratory-Discussion	Y28	05:00 PM - 06:20 PM	R	312 - Davenport Hall	
Quantitative Reasoning I course.						
78775	Laboratory-Discussion	Y29	05:00 PM - 06:20 PM	R	336 - Davenport Hall	
Quantitative Reasoning I course.						
79505	Laboratory-Discussion	Y30	12:30 PM - 01:50 PM	F	147 - Loomis Laboratory	
Quantitative Reasoning I course.						
79507	Laboratory-Discussion	Y31	12:30 PM - 01:50 PM	F	137 - Henry Administration Bldg	
Quantitative Reasoning I course.						
79506	Laboratory-Discussion	Y32	12:30 PM - 01:50 PM	F	137 - Armory	
Quantitative Reasoning I course.						
79508	Laboratory-Discussion	Y33	02:00 PM - 03:20 PM	F	214 - Davenport Hall	
Quantitative Reasoning I course.						
79501	Laboratory-Discussion	Y34	02:00 PM - 03:20 PM	F	G24 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course.						
79503	Laboratory-Discussion	Y35	02:00 PM - 03:20 PM	F	119 - English Building	
Quantitative Reasoning I course.						
79502	Laboratory-Discussion	Y36	02:00 PM - 03:20 PM	F	307 - David Kinley Hall	
Quantitative Reasoning I course.						
79493	Laboratory-Discussion	Y37	03:30 PM - 04:50 PM	F	G32 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course.						
71821	Laboratory-Discussion	Y38	03:30 PM - 04:50 PM	F	G30 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course. This section has 0 capacity assigned. Interested students should enroll in the crosslisted section of STAT 107 instead.						

77321	Laboratory-Discussion	Y39	03:30 PM - 04:50 PM	F	G36 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course.						
78684	Laboratory-Discussion	Y40	03:30 PM - 04:50 PM	F	313 - Davenport Hall	
Quantitative Reasoning I course.						
78697	Laboratory-Discussion	Y41	03:30 PM - 04:50 PM	F	1136 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course.						
78699	Laboratory-Discussion	Y42	05:00 PM - 06:20 PM	F	313 - Davenport Hall	
Quantitative Reasoning I course.						
78772	Laboratory-Discussion	Y43	05:00 PM - 06:20 PM	F	G32 - Literatures, Cultures, & Ling	
Quantitative Reasoning I course.						
79504	Laboratory-Discussion	Y44	05:00 PM - 06:20 PM	F	312 - Davenport Hall	
Quantitative Reasoning I course.						

CS 124 **Introduction to Computer Science I** credit: 3 hours.

Basic concepts in computing and fundamental techniques for solving computational problems. Intended as a first course for computer science majors and others with a deep interest in computing. Credit is not given for both CS 124 and CS 125. Prerequisite: Three years of high school mathematics or MATH 112.

CRN	Type	Section	Time	Days	Location	Instructor
74477	Online Lecture	AL1	ARRANGED -		-	Challen, G
Quantitative Reasoning I course. Restricted to Computer Science or Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science & Advertising or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s). Restricted to Undergrad - Urbana-Champaign. This section is intended to CS & CS+X majors only. These restrictions remain in place throughout registration. This Lecture will be run online asynchronously. Quizzes are in person. https://www.cs124.org/ Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister						
75242	Online Lecture	AL2	ARRANGED -		-	Challen, G
Quantitative Reasoning I course. Restricted to Undergrad - Urbana-Champaign. This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration. This Lecture will be run online asynchronously. Quizzes are in person.						

Not intended for CS and blended CS majors students.						
74481	Laboratory-Discussion	QBA	10:00 AM - 10:50 AM	T	4025 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74482	Laboratory-Discussion	QBB	10:00 AM - 10:50 AM	T	4029 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74490	Laboratory-Discussion	QBC	11:00 AM - 11:50 AM	T	4025 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74491	Laboratory-Discussion	QBD	11:00 AM - 11:50 AM	T	4029 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74492	Laboratory-Discussion	QBE	01:00 PM - 01:50 PM	T	4025 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74493	Laboratory-Discussion	QBF	01:00 PM - 01:50 PM	T	4029 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74494	Laboratory-Discussion	QBG	02:00 PM - 02:50 PM	T	4025 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74495	Laboratory-Discussion	QBH	02:00 PM - 02:50 PM	T	4029 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74496	Laboratory-Discussion	QBI	03:00 PM - 03:50 PM	T	4025 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74497	Laboratory-Discussion	QBJ	12:00 PM - 12:50 PM	T	4025 - Campus Instructional Facility	Challen, G

Quantitative Reasoning I course.						
74498	Laboratory-Discussion	QBK	04:00 PM - 04:50 PM	T	4025 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74499	Laboratory-Discussion	QBL	12:00 PM - 12:50 PM	T	4029 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74500	Laboratory-Discussion	QBM	05:00 PM - 05:50 PM	T	4025 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						
74501	Laboratory-Discussion	QBN	05:00 PM - 05:50 PM	T	4029 - Campus Instructional Facility	Challen, G
Quantitative Reasoning I course.						

CS 128 **Introduction to Computer Science II** credit: 3 hours.

Continuation of CS 124. More advanced concepts in computing and techniques and approaches for solving computational problems. Prerequisite: CS 124 or CS 125.

CRN	Type	Section	Time	Days	Location	Instructor
74509	Laboratory-Discussion	ADD	09:30 AM - 10:45 AM	F	0218 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
74511	Laboratory-Discussion	ADF	09:30 AM - 10:45 AM	F	0220 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
74512	Laboratory-Discussion	ADG	11:00 AM - 12:15 PM	F	0218 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
74513	Laboratory-Discussion	ADH	11:00 AM - 12:15 PM	F	0220 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course.						

This section will require a laptop.						
74514	Laboratory-Discussion	ADI	11:00 AM - 12:15 PM	F	2406 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
74515	Laboratory-Discussion	ADJ	12:30 PM - 01:45 PM	F	0218 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75285	Laboratory-Discussion	ADK	12:30 PM - 01:45 PM	F	0220 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75286	Laboratory-Discussion	ADL	12:30 PM - 01:45 PM	F	2406 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75287	Laboratory-Discussion	ADM	02:00 PM - 03:15 PM	F	0218 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75288	Laboratory-Discussion	ADN	02:00 PM - 03:15 PM	F	0220 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75290	Laboratory-Discussion	ADP	03:30 PM - 04:45 PM	F	0218 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75291	Laboratory-Discussion	ADQ	03:30 PM - 04:45 PM	F	0220 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						

75293	Laboratory-Discussion	ADS	02:00 PM - 03:15 PM	F	2406 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75294	Laboratory-Discussion	ADT	03:30 PM - 04:45 PM	F	2406 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
75295	Laboratory-Discussion	ADU	09:30 AM - 10:45 AM	F	2406 - Siebel Center for Comp Sci	Nowak, M
Quantitative Reasoning II course. This section will require a laptop.						
74478	Online Lecture	AL1	ARRANGED -		-	Nowak, M
Quantitative Reasoning II course. Restricted to Computer Engineering or Computer Science or Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science & Advertising or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s). Restricted to Undergrad - Urbana-Champaign. This section is intended for CS and CS+X majors only. These restrictions remain in place throughout registration. This lecture will be taught online asynchronously. Discussions are in person. You MUST have earned CS 124 or 125 credit to register or your enrollment will be deleted before classes begin. cs128.org Restricted to CS and blended CS majors students.						
75244	Online Lecture	AL2	ARRANGED -		-	Nowak, M
Quantitative Reasoning II course. Restricted to Undergrad - Urbana-Champaign. This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration. This lecture will be taught online asynchronously. Discussions are in person. You MUST have earned CS 124 or 125 credit to register or your enrollment will be deleted before classes begin. cs128.org Not intended for CS and blended CS majors students.						

CS 173 **Discrete Structures** credit: 3 hours.

[IAI Code: CS915] Discrete mathematical structures frequently encountered in the study of Computer Science. Sets, propositions, Boolean algebra, induction, recursion, relations, functions, and graphs. Credit is not given toward graduation for: Credit is not given for both CS 173 and MATH 213. Prerequisite: One of CS 124, CS 125, ECE 220; one of MATH 220, MATH 221.

CRN	Type	Section	Time	Days	Location	Instructor
30102	Lecture	AL1	09:30 AM - 10:50 AM	TR	3039 - Campus Instructional Facility	Balepur, N Evans, C
Restricted to Undergrad - Urbana-Champaign. Restricted to Computer Engineering or Computer Science or Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science &						

Advertising or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s).
This section is for CS, CS&, CS+X and Computer Engineering majors only. These restrictions remain in place throughout registration. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister
Restricted to CS and blended CS majors students.

72280	Lecture	AL2	09:30 AM - 10:50 AM	TR	3039 - Campus Instructional Facility	Balepur, N Evans, C

Restricted to Undergrad - Urbana-Champaign.
This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration.
Not intended for CS and blended CS majors students.

40083	Lecture	BL1	02:00 PM - 03:15 PM	TR	1404 - Siebel Center for Comp Sci	Balepur, N Evans, C

Restricted to Undergrad - Urbana-Champaign.
Restricted to Computer Engineering or Computer Science or Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science & Advertising or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s).
This section is for CS, CS&, CS+X and Computer Engineering majors. These restrictions remain in place throughout registration. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister
Restricted to CS and blended CS majors students.

72281	Lecture	BL2	02:00 PM - 03:15 PM	TR	1404 - Siebel Center for Comp Sci	Balepur, N Evans, C

Restricted to Undergrad - Urbana-Champaign.
This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration.
Not intended for CS and blended CS majors students.

51495	Lecture	CL1	12:30 PM - 01:50 PM	TR	3039 - Campus Instructional Facility	Balepur, N Evans, C

Restricted to Undergrad - Urbana-Champaign.
Restricted to Computer Engineering or Computer Science or Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science & Advertising or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s).
This section is for CS, CS&, CS+X and Computer Engineering majors. These restrictions remain in place throughout registration. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister
Restricted to CS and blended CS majors students.

51497	Lecture	CL2	12:30 PM - 01:50 PM	TR	3039 - Campus Instructional Facility	Balepur, N Evans, C

Restricted to Undergrad - Urbana-Champaign.
This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration.
Not intended for CS and blended CS majors students.

51499	Lecture-Discussion	HON	09:30 AM - 10:45 AM	WF	3025 - Campus Instructional Facility	Parthasarathy, M

Restricted to Undergrad - Urbana-Champaign.
This section is for CS, CS&, CS+X and Computer Engineering majors only. These restrictions remain in place throughout registration. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister
Restricted to James Scholars Program students.

CS 199 **Undergraduate Open Seminar in Computer Science** credit: 0 TO 5 hours.

Topics vary. Approved for Letter and S/U grading. May be repeated.

CRN	Type	Section	Time	Days	Location	Instructor
70754	Online	12	ARRANGED -		-	Challen, G
Credit Hours: 1 hours CS 124 CA Training Restricted to Undergrad - Urbana-Champaign. Credit for CS 124 Course Assistants engaged in staff training. Restricted to CS 124 Course Assistants.						
67084	Online	124	ARRANGED -		-	Challen, G
Supplementary Proj for CS 124 Restricted to Undergrad - Urbana-Champaign. Restricted to students concurrently registered in CS 124. Not intended for James Scholars. James Scholars should file an HCLA with their college James Scholar program instead of registering for this section. Students complete an independent development project with supervision from CS 124 Honors staff. Not intended for James Scholars Program students.						
56131	Online	128	ARRANGED -		-	Nowak, M
Supplementary Proj for CS 128 Restricted to Undergrad - Urbana-Champaign. SECTION 128 is for students concurrently registered in CS 128. Not intended for James Scholars. James Scholars should file an HCLA with their college James Scholar program instead of registering for this section. Not intended for James Scholars Program students.						
55189	Online	173	ARRANGED -		-	
Supplementary Proj for CS 173 Restricted to Undergrad - Urbana-Champaign. SECTION 173 is students concurrently registered in CS 173. Not intended for James Scholars. James Scholars should file an HCLA with their college James Scholar program instead of registering for this section. Not intended for James Scholars Program students.						
69687	Online	196	ARRANGED -		-	Challen, G
Credit Hours: 1 hours Pedagogy Practicum Restricted to Undergrad - Urbana-Champaign. Credit for CS 124 Honors staff engaged in staff training. Restricted to CS 124 Honors staff.						
40944	Laboratory	225	05:00 PM - 05:50 PM	M	0216 - Siebel Center for Comp Sci	Solomon, B
Supplementary Proj for CS 225 Restricted to Undergrad - Urbana-Champaign. SECTION 225 is students concurrently registered in CS 225. Not intended for James Scholars. James Scholars should file an HCLA with their college James Scholar program instead of registering for this section. James Scholars should register for discussion section CRN 75824.						

Not intended for James Scholars Program students.

70755	Lecture	233	04:00 PM - 04:50 PM	W	0220 - Siebel Center for Comp Sci	Ghose, S

Supplementary Proj for CS 233
Restricted to Undergrad - Urbana-Champaign.
SECTION 233 is students concurrently registered in CS 233. Not intended for James Scholars. James Scholars should file an HCLA with their college James Scholar program instead of registering for this section.
Not intended for James Scholars Program students.

69688	Online	341	07:00 PM - 08:50 PM	T	-	Angrave, L

Supplementary proj for CS 341
Restricted to Undergrad - Urbana-Champaign.
SECTION 341 is for students concurrently registered in CS 341. Not intended for James Scholars. James Scholars should file an HCLA with their college James Scholar program instead of registering for this section.
Not intended for James Scholars Program students.

63523	Online	CAO	ARRANGED -		-	Lewis, C

Credit Hours: 1 hours
CA Training
Restricted to Undergrad - Urbana-Champaign.
Description: This course is designed for students working as or interested in becoming a Course Assistant (CAs) in the computer science department. The goal of the course is to help students learn the skills and knowledge they need to be effective Course Assistants. Topics include: (a) principles of learning, (b) motivating students, (c) tutoring practices, (d) encouraging effective collaboration, (e) grading practices, (f) developing a positive classroom community, and (g) ethical considerations. Current Course Assistants who have not completed the course are expected to enroll.

31512	Lecture-Discussion	CSX	11:00 AM - 12:15 PM	M	1214 - Siebel Center for Comp Sci	Gertner, Y
	Online	CSX	ARRANGED -		-	Gertner, Y

Credit Hours: 3 hours
CS Beyond STEM w/ Python
Restricted to Undergrad - Urbana-Champaign.
Topic: CS Beyond STEM w/ Python
 Computer science is a growing field with growing impact in a vast variety of areas, including agricultural innovations, social sciences research methods, social networks, and language processing. To match the wealth of fields computer science can impact, CS+X and interdisciplinary programs are rapidly growing in availability. As an introduction to these options, this course provides a broad exposure to the various non-STEM fields that computer science combines with: music, anthropology, linguistics, advertising, agriculture, and philosophy. The course introduces students to the questions, ideas, and ethical considerations that drive each field, as well as to coding in Python. Students will read articles, individually reflect on them, and discuss ethics and challenges in class. Students will also create projects in Python. The open-ended nature of projects encourages students to focus on exploring the pieces that most interest them. No prior programming experience is required.
Not intended for CS and blended CS majors or Engineering tuition program students.

60891	Lecture	E28	03:00 PM - 04:50 PM	M	0216 - Siebel Center for Comp Sci	

Credit Hours: 1 hours
Even More Practice 128
Restricted to Undergrad - Urbana-Champaign.
Instructor Approval Required
Even More Practice (EMP) is a one-credit course designed for CS 128 students who think that they might benefit from extra practice and instruction. Students will receive help analyzing algorithms; solving computational problems; and understanding, writing, and

debugging computer programs. Examples will be drawn from material covered in CS 128. Graded pass/fail. Requires concurrent enrollment in CS 128. Class first meets on the first Monday of the semester.

55187	Discussion/ Recitation	SOC	02:00 PM - 03:30 PM	F	1214 - Siebel Center for Comp Sci	Challen, G

Credit Hours: 2 hours
Technology and Society
Restricted to Undergrad - Urbana-Champaign.
Through reading, reflection, conversation, and experimentation, students will examine their relationship with technology. Topics may include social media and mental health, surveillance capitalism, search and algorithmic bias, deep work, and viewpoint polarization. Readings by Cathy O'Neil, Jonathan Haidt, Shoshana Zuboff, Wendell Berry, Safiya Noble, Dave Eggers, and others.

31511	Lecture	STR	05:00 PM - 06:00 PM	W	ARR - Siebel Center for Comp Sci	Amato, N

Credit Hours: 1 hours
CS Stars Seminar
Restricted to Undergrad - Urbana-Champaign.
CS Stars, Ambassador program.

CS 210 **Ethical & Professional Issues** credit: 2 hours.

Ethics for the computing profession. Ethical decision-making; licensing; intellectual property, freedom of information, and privacy. Credit is not given for both CS 210 and either CS 211 or ECE 316. Prerequisite: CS 225. Junior standing required.

CRN	Type	Section	Time	Days	Location	Instructor
31517	Lecture-Discussion	CSP	09:30 AM - 12:20 PM	F	-	Winter, G

Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. The class will be held in conference room 707 at 200 S. Wacker Dr. Chicago.
Restricted to O/C Engineering City Scholars students.

31516	Lecture-Discussion	EA1	03:00 PM - 03:50 PM	MW	1404 - Siebel Center for Comp Sci	Cunningham, R

Restricted to Undergrad - Urbana-Champaign.
Restricted to Computer Science major(s). Restricted to students with Junior or Senior class standing.
Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister

CS 211 **Ethical and Professional Conduct** credit: 3 hours.

Navigating the complex ethical and professional landscape of the computing professional: privacy, intellectual property, cybersecurity, and freedom of speech. Hands-on exercises, assignments, and discussions in which students analyze current events from perspectives in both philosophical and professional ethics. Writing professionally and technically in several writing assignments requiring peer review, workshops, and multiple rounds of editing and revising. Credit is not given for both CS 211 and CS 210 or ECE 316. Prerequisite: CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
77707	Lecture-Discussion	CSP	09:30 AM - 12:20 PM	F	-	Winter, G

Credit Hours: 3 hours
Advanced Composition course.
Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. The class will be held in conference room 707 in 200 S. Wacker Dr. Chicago.
Restricted to O/C Engineering City Scholars students.

74483	Lecture-Discussion	EA1	03:00 PM - 03:50 PM	MWF	1404 - Siebel Center for Comp Sci	Cunningham, R

Credit Hours: 3 hours
Advanced Composition course.
Restricted to Undergrad - Urbana-Champaign.
Restricted to Computer Science major(s). Restricted to students with Junior or Senior class standing.
Advanced Comp for CS 210. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 222 **Software Design Lab** credit: 1 hours.

Design and implementation of novel software solutions. Problem identification and definition; idea generation and evaluation; and software implementation, testing, and deployment. Emphasizes software development best practices—including framework selection, code review, documentation, appropriate library usage, project management, continuous integration and testing, and teamwork. Prerequisite: CS 128; credit or concurrent registration in CS 225. Restricted to majors in Computer Science undergraduate curricula only.

CRN	Type	Section	Time	Days	Location	Instructor
80041	Online	CSP	ARRANGED -		-	Woodley, M

Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only.
Restricted to O/C Engineering City Scholars students.

74484	Lecture-Discussion	SL1	02:00 PM - 02:50 PM	F	0027/1025 - Campus Instructional Facility	Woodley, M

Credit Hours: 1 hours
Restricted to Undergrad - Urbana-Champaign.
Not intended for Computer Engineering major(s). Not intended for BS:Computer Engineering -UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Restricted to CS and blended CS majors students.

CS 225 **Data Structures** credit: 4 hours.

Data abstractions: elementary data structures (lists, stacks, queues, and trees) and their implementation using an object-oriented programming language. Solutions to a variety of computational problems such as search on graphs and trees. Elementary analysis of algorithms. Credit is not given toward graduation for: CS 277 if credit for CS 225 has been earned. Prerequisite: CS 126 or CS 128 or ECE 220; One of CS 173, CS 413, MATH 213, MATH 314, MATH 347, MATH 412, or MATH 413.

Students must register for one laboratory-discussion and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor

65054	Laboratory-Discussion	ABA	09:00 AM - 10:50 AM	R	4025 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
61264	Laboratory-Discussion	ABB	09:00 AM - 10:50 AM	R	4029 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
35926	Laboratory-Discussion	ABC	11:00 AM - 12:50 PM	R	4025 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
35923	Laboratory-Discussion	ABD	11:00 AM - 12:50 PM	R	4029 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
35944	Laboratory-Discussion	ABE	01:00 PM - 02:50 PM	R	4025 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
58757	Laboratory-Discussion	ABF	01:00 PM - 02:50 PM	R	4029 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
62137	Laboratory-Discussion	ABG	03:00 PM - 04:50 PM	R	4025 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
58758	Laboratory-Discussion	ABH	03:00 PM - 04:50 PM	R	4029 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
35947	Laboratory-Discussion	ABI	05:00 PM - 06:50 PM	R	4025 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						
35954	Laboratory-Discussion	ABJ	05:00 PM - 06:50 PM	R	4029 - Campus Instructional Facility	Solomon, B
Quantitative Reasoning II course.						

75824	Laboratory	AH	05:00 PM - 05:50 PM	M	0216 - Siebel Center for Comp Sci	Solomon, B
Quantitative Reasoning II course. Restricted to Undergrad - Urbana-Champaign. SECTION 225 is students concurrently registered in CS 225. Supplementary Proj for CS 225 for the James Scholars. James Scholars should also file an HCLA with their college. Restricted to James Scholars Program students.						
35917	Lecture	AL1	11:00 AM - 11:50 AM	MWF	AUD - Foellinger Auditorium	Solomon, B
Quantitative Reasoning II course. Restricted to Undergrad - Urbana-Champaign. This section is for CS, CS&, CS+X and Computer Engineering majors only. These restrictions remain in place throughout registration. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Restricted to CS and blended CS majors students.						
72271	Lecture	AL2	11:00 AM - 11:50 AM	MWF	AUD - Foellinger Auditorium	Solomon, B
Quantitative Reasoning II course. Restricted to Undergrad - Urbana-Champaign. This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration. Not intended for CS and blended CS majors students.						

CS 233 **Computer Architecture** credit: 4 hours.

Fundamentals of computer architecture: digital logic design, working up from the logic gate level to understand the function of a simple computer; machine-level programming to understand implementation of high-level languages; performance models of modern computer architectures to enable performance optimization of software; hardware primitives for parallelism and security. Prerequisite: CS 125 or CS 128; CS 173 or MATH 213; credit or concurrent enrollment in CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
63733	Lecture-Discussion	AL1	09:00 AM - 10:50 AM	TR	0035 - Campus Instructional Facility	Herman, G
Restricted to Undergrad - Urbana-Champaign. Not intended for Computer Engineering major(s). This section is for CS, CS&, CS+X majors only. These restrictions remain in place throughout registration. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister Restricted to CS and blended CS majors students.						
72275	Lecture-Discussion	AL2	09:00 AM - 10:50 AM	TR	0035 - Campus Instructional Facility	Herman, G
Restricted to Undergrad - Urbana-Champaign. Not intended for Computer Engineering or Electrical Engineering major(s). This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration. Not intended for CS and blended CS majors or First Time Freshman students.						
64513	Discussion/ Recitation	OL1	ARRANGED -		-	Herman, G

	Online Lecture	OL1	09:00 AM - 10:50 AM	TR	-	Herman, G
Restricted to Undergrad - Urbana-Champaign. Not intended for BS:Computer Engineering -UIUC or BS:Electrical Engineerng -UIUC. This section is for CS, CS&, CS+X majors only. These restrictions remain in place throughout registration. This section will be taught in an online format. You are responsible for homeworks, quizzes, and any in person activities that are required. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister Restricted to CS and blended CS majors students.						
72276	Discussion/ Recitation	OL2	ARRANGED -		-	Herman, G
	Online Lecture	OL2	09:00 AM - 10:50 AM	TR	-	Herman, G
Restricted to Undergrad - Urbana-Champaign. Not intended for Computer Engineering or Electrical Engineering major(s). This section is for CS minors, NON CS majors, and general campus. These restrictions remain in place throughout registration. This section will be taught in an online format. You are responsible for homeworks, quizzes, and any in person activities that are required. Not intended for CS and blended CS majors or First Time Freshman students.						

CS 307 **Modeling and Learning in Data Science** credit: 4 hours.

Introduction to the use of classical approaches in data modeling and machine learning in the context of solving data-centric problems. A broad coverage of fundamental models is presented, including linear models, unsupervised learning, supervised learning, and deep learning. A significant emphasis is placed on the application of the models in Python and the interpretability of the results. Prerequisite: STAT 207; one of MATH 225, MATH 227, MATH 257, MATH 415, MATH 416, ASRM 406.

CRN	Type	Section	Time	Days	Location	Instructor
77586	Discussion/ Recitation	M1	09:30 AM - 10:45 AM	F	1320 - Digital Computer Laboratory	Dalpiaz, D
	Lecture	M1	02:00 PM - 03:15 PM	TR	3039 - Campus Instructional Facility	Dalpiaz, D
Restricted to Undergrad - Urbana-Champaign. Restricted to Data Science or Information Sciences + DS or Astronomy + Data Science or Finance + Data Science or Accountancy + Data Science or Business + Data Science or Chemical Engr + Data Science or Molecular & Cellular Bio + DS major(s) or minor(s).						
77587	Discussion/ Recitation	M2	09:30 AM - 10:45 AM	F	1320 - Digital Computer Laboratory	Dalpiaz, D
	Lecture	M2	02:00 PM - 03:15 PM	TR	3039 - Campus Instructional Facility	Dalpiaz, D
Restricted to Undergrad - Urbana-Champaign. Not intended for Information Sciences + DS or Astronomy + Data Science or Finance + Data Science or Accountancy + Data Science or Business + Data Science or Chemical Engr + Data Science or Molecular & Cellular Bio + DS major(s).						
80859	Discussion/ Recitation	M3	11:00 AM - 12:15 PM	F	1320 - Digital Computer Laboratory	Dalpiaz, D

	Lecture	M3	02:00 PM - 03:15 PM	TR	3039 - Campus Instructional Facility	Dalpiaz, D
Restricted to Undergrad - Urbana-Champaign. This section is restricted to students in DS+X majors initially, and open initially to students who were freshmen in Fall 2022 or earlier. Fall 2023-start students will get a later opportunity to register. DS minors may be given access later if seats are available.						
80885	Discussion/ Recitation	M4	11:00 AM - 12:15 PM	F	1320 - Digital Computer Laboratory	Dalpiaz, D
	Online Lecture	M4	ARRANGED -		-	Dalpiaz, D
Restricted to Undergrad - Urbana-Champaign. Not intended for Information Sciences + DS or Astronomy + Data Science or Finance + Data Science or Accountancy + Data Science or Business + Data Science or Chemical Engr + Data Science or Molecular & Cellular Bio + DS major(s). Students in this section will watch lecture videos asynchronously but attend discussions in-person. Initially this section is restricted to X+Data Science majors but will be open to later to Data Science minors and then all students meeting the prerequisites.						

CS 340 **Introduction to Computer Systems** credit: 3 hours.

Basics of computer systems. Number representations, assembly/machine language, abstract models of processors (fetch/execute, memory hierarchy), processes/process control, simple memory management, file I/O and directories, network programming, usage of cloud services. Credit is not given for both CS 340 and CS 240. Prerequisite: CS 128 and CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
77096	Lecture	ICS	02:00 PM - 03:15 PM	TR	2079 - Natural History Building	Schatz, J Tychonievich, L
Credit Hours: 3 hours Not intended for First Time Freshman students. Restricted to Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science & Advertising or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s). Restricted to Undergrad - Urbana-Champaign. Not intended for BS:Computer Science - UIUC. This course is not meant for CS Engineering majors.						

CS 341 **System Programming** credit: 4 hours.

Basics of system programming, including POSIX processes, process control, inter-process communication, synchronization, signals, simple memory management, file I/O and directories, shell programming, socket network programming, RPC programming in distributed systems, basic security mechanisms, and standard tools for systems programming such as debugging tools. Credit is not given for both CS 341 and either CS 241 or ECE 391. Prerequisite: CS 225 and CS 233.

Students must register for one lecture and one discussion section.

CRN	Type	Section	Time	Days	Location	Instructor
76768	Laboratory-Discussion	ADA	11:00 AM - 12:20 PM	R	0218 - Siebel Center for Comp Sci	Angrave, L

76769	Laboratory-Discussion	ADB	12:30 PM - 01:50 PM	R	0218 - Siebel Center for Comp Sci	Angrave, L
76770	Laboratory-Discussion	ADC	02:00 PM - 03:20 PM	R	0218 - Siebel Center for Comp Sci	Angrave, L
76771	Laboratory-Discussion	ADD	03:30 PM - 04:50 PM	R	0218 - Siebel Center for Comp Sci	Angrave, L
76772	Laboratory-Discussion	ADE	11:00 AM - 12:20 PM	R	2406 - Siebel Center for Comp Sci	Angrave, L
76773	Laboratory-Discussion	ADF	12:30 PM - 01:50 PM	R	2406 - Siebel Center for Comp Sci	Angrave, L
76775	Laboratory-Discussion	ADH	02:00 PM - 03:20 PM	R	2406 - Siebel Center for Comp Sci	Angrave, L
76776	Laboratory-Discussion	ADI	03:30 PM - 04:50 PM	R	0220 - Siebel Center for Comp Sci	Angrave, L
76777	Laboratory-Discussion	ADJ	05:00 PM - 06:15 PM	R	0220 - Siebel Center for Comp Sci	Angrave, L
76767	Lecture	AL1	10:00 AM - 10:50 AM	MWF	0027/1025 - Campus Instructional Facility	Angrave, L
Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
77652	Laboratory	CSP	02:00 PM - 03:20 PM	R	-	Angrave, L
	Online Lecture	CSP	10:00 AM - 10:50 AM	MWF	-	Angrave, L
Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations.						

Restricted to O/C Engineering City Scholars students.

CS 357 **Numerical Methods I** credit: 3 hours.

Fundamentals of numerical methods for students in science and engineering; floating-point computation, systems of linear equations, approximation of functions and integrals, the single nonlinear equation, and the numerical solution of ordinary differential equations; various applications in science and engineering; programming exercises and use of high quality mathematical library routines. Same as MATH 357. Credit is not given towards graduation for CS 357 if credit for CS 450 has been earned. (Counts for advanced hours in LAS). Prerequisite: One of CS 101, CS 105, CS 124, CS 125 or ECE 220; MATH 241; one of MATH 225, MATH 257, MATH 415, MATH 416, ASRM 406 or BIOE 210.

CRN	Type	Section	Time	Days	Location	Instructor
63536	Discussion/ Recitation	M	ARRANGED -		-	Silva, M
	Online Lecture	M	12:30 PM - 01:45 PM	TR	-	Silva, M
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. Students registered in the online section will complete all assessments online via PrairieLearn. This course uses a flipped format – there are no traditional lectures on Tuesdays and Thursdays. Instead, students complete pre-lecture assignments delivered online via PrairieLearn. On Tuesdays, students will complete a group assessment, which can be completed during lecture time (optional attendance to a virtual classroom via Zoom to get support from course staff) or can be completed at another time during the same day, upon agreement of group members. There will be weekly asynchronous quizzes at CBTF. To be approved for a time conflict override, students must understand it is their responsibility to find other students to complete the group activities on Tuesdays. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
53280	Lecture-Discussion	N	12:30 PM - 01:45 PM	TR	0035 - Campus Instructional Facility	
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. Students registered in the in-person section will complete all assessments online via PrairieLearn. This course uses a flipped format – there are no traditional lectures on Tuesdays and Thursdays. Instead, students complete pre-lecture assignments delivered online via PrairieLearn. On Tuesdays, students will complete a group assessment, which must be completed during lecture time. Classroom attendance is required. There will be weekly asynchronous quizzes at CBTF. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 361 **Probability & Statistics for Computer Science** credit: 3 hours.

Introduction to probability theory and statistics with applications to computer science. Topics include: visualizing datasets, summarizing data, basic descriptive statistics, conditional probability, independence, Bayes theorem, random variables, joint and conditional distributions, expectation, variance and covariance, central limit theorem. Markov inequality, Chebyshev inequality, law of large numbers, Markov chains, simulation, the PageRank algorithm, populations and sampling, sample mean, standard error, maximum likelihood estimation, Bayes estimation, hypothesis testing, confidence intervals, linear regression, principal component analysis, classification, and decision trees. Same as STAT 361. Credit is not given for both CS 361 and ECE 313. Prerequisite: MATH 220 or MATH 221; credit or concurrent registration in one of MATH 225, MATH 257, MATH 415, MATH 416 or ASRM 406. For majors only.

CRN	Type	Section	Time	Days	Location	Instructor
72361	Discussion/ Recitation	ADA	09:00 AM - 09:50 AM	M	0218 - Siebel Center for Comp Sci	Karan, A

66306	Discussion/ Recitation	ADB	10:00 AM - 10:50 AM	M	0218 - Siebel Center for Comp Sci	Karan, A
66307	Discussion/ Recitation	ADC	11:00 AM - 11:50 AM	M	0218 - Siebel Center for Comp Sci	Liu, H
66303	Discussion/ Recitation	ADD	12:00 PM - 12:50 PM	M	0218 - Siebel Center for Comp Sci	Liu, H
66304	Discussion/ Recitation	ADE	01:00 PM - 01:50 PM	M	0218 - Siebel Center for Comp Sci	Liu, H
66305	Discussion/ Recitation	ADF	02:00 PM - 02:50 PM	M	0218 - Siebel Center for Comp Sci	Liu, H
76052	Discussion/ Recitation	ADG	03:00 PM - 03:50 PM	M	0218 - Siebel Center for Comp Sci	Liu, H
76054	Discussion/ Recitation	ADH	04:00 PM - 04:50 PM	M	0218 - Siebel Center for Comp Sci	Liu, H
76056	Discussion/ Recitation	ADI	05:00 PM - 05:50 PM	M	0218 - Siebel Center for Comp Sci	Liu, H
66298	Lecture	AL1	09:30 AM - 10:45 AM	TR	0027/1025 - Campus Instructional Facility	Liu, H
Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 374 **Introduction to Algorithms & Models of Computation** credit: 4 hours.

Analysis of algorithms, major paradigms of algorithm design including recursive algorithms, divide-and-conquer algorithms, dynamic programming, greedy algorithms, and graph algorithms. Formal models of computation including finite automata and Turing machines. Limitations of computation arising from fundamental notions of algorithm and from complexity-theoretic constraints. Reductions, undecidability and NP-completeness. Same as ECE 374. Prerequisite: One of CS 173, MATH 213; CS 225.

CRN	Type	Section	Time	Days	Location	Instructor

70644	Discussion/ Recitation	ADB	10:00 AM - 10:50 AM	WF	1302 - Everitt Laboratory	Erickson, J
72092	Discussion/ Recitation	ADD	12:00 PM - 12:50 PM	WF	1302 - Everitt Laboratory	Erickson, J
72094	Discussion/ Recitation	ADE	01:00 PM - 01:50 PM	WF	1302 - Everitt Laboratory	Erickson, J
66451	Discussion/ Recitation	ADF	02:00 PM - 02:50 PM	WF	1302 - Everitt Laboratory	Erickson, J
72201	Discussion/ Recitation	ADG	03:00 PM - 03:50 PM	WF	1302 - Everitt Laboratory	Erickson, J
66445	Lecture	AL1	11:00 AM - 12:15 PM	TR	0027/1025 - Campus Instructional Facility	Erickson, J
Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Restricted to CS and blended CS majors students.						
70641	Lecture	BL1	03:30 PM - 04:45 PM	TR	0027/1025 - Campus Instructional Facility	Alabi, D Kani, N
Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Restricted to CS and blended CS majors students.						
66446	Discussion/ Recitation	BYA	09:00 AM - 09:50 AM	WF	2017 - Electrical & Computer Eng Bldg	Alabi, D Kani, N
66447	Discussion/ Recitation	BYB	10:00 AM - 10:50 AM	WF	4070 - Electrical & Computer Eng Bldg	Alabi, D Kani, N
66448	Discussion/ Recitation	BYC	11:00 AM - 11:50 AM	WF	4070 - Electrical & Computer Eng Bldg	Alabi, D Kani, N
66449	Discussion/ Recitation	BYD	12:00 PM - 12:50 PM	WF	4070 - Electrical & Computer Eng Bldg	Alabi, D Kani, N

66450	Discussion/ Recitation	BYE	01:00 PM - 01:50 PM	WF	4070 - Electrical & Computer Eng Bldg	Alabi, D Kani, N
66452	Discussion/ Recitation	BYF	02:00 PM - 02:50 PM	WF	4070 - Electrical & Computer Eng Bldg	Alabi, D Kani, N
66454	Discussion/ Recitation	BYG	03:00 PM - 03:50 PM	WF	4070 - Electrical & Computer Eng Bldg	Alabi, D Kani, N
75925	Discussion/ Recitation	BYH	04:00 PM - 04:50 PM	WF	2015 - Electrical & Computer Eng Bldg	Alabi, D Kani, N
72090	Discussion/ Recitation	CSP	02:00 PM - 03:15 PM	F	-	Abraham, I Kani, N
	Lecture	CSP	ARRANGED -		-	Abraham, I Kani, N

Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http:// go.cs.illinois.edu/csregister.
Restricted to O/C Engineering City Scholars students.

CS 397 **Individual Study** credit: 1 TO 3 hours.

May be repeated. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
14855	Independent Study		ARRANGED -		-	

Instructor Approval Required
Restricted to Computer Science major(s). Restricted to Undergrad - Urbana-Champaign.
Students must submit the independent study form via my.siebelschool. Each person involved in an independent study must fill out a separate form that includes the name and UIN of the participating person. You will receive a CRN upon instructor approval and departmental notification. Requests should be done at the following site address: https://siebelschool.illinois.edu/academics/undergraduate/undergraduate-forms

CS 400 **Accelerated Fundamentals of Computing I** credit: 3 hours.

The first class in a sequence of two classes that introduces students to the basic concepts in computing with an emphasis on the fundamental techniques for solving computational problems. Topics include: core programming concepts (variables, data types, conditional expressions, loops, functions), basic data structures, searching and sorting algorithms, and data exploration and visualization. No prior programming experience is required. No undergraduate credit. 3 graduate hours. Prerequisite: Current enrollment in the Illinois Computing Accelerator for Non-specialists (iCAN) program or consent of instructor. Restricted to post-baccalaureate students with a non-computing background.

CRN	Type	Section	Time	Days	Location	Instructor
75641	Online Lecture	AFC	12:30 PM - 01:45 PM	TR	-	Williams, T
Restricted to GCRT:ComputingFundam - UIUC or GCRT:ComputingFundam ONL- UIUC. This section will be taught online synchronously.						

CS 401 **Accelerated Fundamentals of Algorithms I** credit: 3 hours.

The first class in a sequence of two classes that introduces students to the theoretical foundations of computer science. Topics include counting, sets, functions, decision trees, recursion, binary numbers, basic graph theory, depth first search and breadth first search, algorithms for computing shortest paths, data structures like stacks and queues, big O notation and asymptotic analysis, complexity classes like P and NP, and reductions. No undergraduate credit. 3 graduate hours. Prerequisite: Current enrollment in the Illinois Computing Accelerator for Non-specialists (iCAN) program or consent of instructor. Restricted to post- baccalaureate students with a non-computing background.

CRN	Type	Section	Time	Days	Location	Instructor
75642	Online Lecture	AFA	02:00 PM - 03:15 PM	TR	-	Gertner, Y
Restricted to GCRT:ComputingFundam - UIUC or GCRT:ComputingFundam ONL- UIUC. This section will be taught online synchronously.						

CS 407 **Cryptography** credit: 3 OR 4 hours.

Same as ECE 407. See ECE 407.

CRN	Type	Section	Time	Days	Location	Instructor
76149	Lecture	A	05:00 PM - 06:20 PM	TR	1013 - Electrical & Computer Eng Bldg	Luo, N
Cryptography is a powerful toolbox for building secure systems --- not just for private communication, but also for building fault tolerant protocols, for securely outsourcing computation to untrusted services, and more. The goal of this course is to introduce the concepts of modern cryptography, including a combination of theoretical foundations (how do we precisely state security guarantees and assumptions, and prove that a protocol is designed correctly?) and practical techniques (how do we combine secure primitives to make effective systems?). This course is intended for senior undergraduate students with an interest in applying cryptographic techniques to building secure systems, and for graduate students with an interest in cryptography or systems security.						

CS 409 **The Art of Web Programming** credit: 3 OR 4 hours.

Client- and server-side technologies that enable modern Web applications. Topics include the building blocks of the Web (browsers, HTML, CSS, JavaScript) and data exchange (HTTP, AJAX, JSON, REST). Assignments expose students to full-stack web development, and JavaScript frameworks that scaffold MVC architectures and event-driven, asynchronous programming. The course culminates in a final project, where students work in teams to design and develop an original, database-backed web application. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
78709	Lecture-Discussion	CSP	02:00 PM - 03:15 PM	R	ARR - Illini Center	Kumar, R
	Online Lecture	CSP	02:00 PM - 03:15 PM	T	-	Kumar, R

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago
Restricted to O/C Engineering City Scholars students.

77684	Online	KOG	ARRANGED -		-	Kumar, R

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC or NDEG:Computer Science Onl-UIUC.
This online overflow section is open to graduate students only.
Not intended for First Time Freshman students.

80146	Online	KOU	ARRANGED -		-	Kumar, R

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
This online overflow section is open to undergraduate students who have met the prerequisite.

79735	Lecture-Discussion	MC3	02:00 PM - 03:15 PM	R	ARR - Illini Center	Kumar, R
	Online Lecture	MC3	02:00 PM - 03:15 PM	T	-	Kumar, R

Credit Hours: 3 hours
Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago

79326	Lecture-Discussion	MC4	02:00 PM - 03:15 PM	R	ARR - Illini Center	Kumar, R
	Online Lecture	MC4	02:00 PM - 03:15 PM	T	-	Kumar, R

Credit Hours: 4 hours
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago

76905	Lecture-Discussion	WPG	02:00 PM - 03:20 PM	TR	0035 - Campus Instructional Facility	Kumar, R

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

76904	Lecture-Discussion	WPU	02:00 PM - 03:20 PM	TR	0035 - Campus Instructional Facility	Kumar, R

Credit Hours: 3 hours

Restricted to Undergrad - Urbana-Champaign.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 410 **Text Information Systems** credit: 3 OR 4 hours.

Theory, design, and implementation of text-based information systems. Text analysis, retrieval models (e.g., Boolean, vector space, probabilistic), text categorization, text filtering, clustering, retrieval system design and implementation, and applications to web information management. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
79900	Discussion/ Recitation	CSP	ARRANGED -		ARR - Illini Center	Robles Granda, P
	Online	CSP	ARRANGED -		-	Robles Granda, P
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. This course has regular in-person exams at the Chicago CBTF in 200 S. Wacker Dr, Chicago. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Restricted to O/C Engineering City Scholars students.						
67393	Online	DSO	ARRANGED -		-	Zhai, C
Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
79328	Discussion/ Recitation	MC3	ARRANGED -		ARR - Illini Center	Robles Granda, P
	Online	MC3	ARRANGED -		-	Robles Granda, P
Credit Hours: 3 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. This course has regular in-person exams at the Chicago CBTF in 200 S. Wacker Dr, Chicago. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations.						
71013	Discussion/ Recitation	MC4	ARRANGED -		ARR - Illini Center	Robles Granda, P
	Online	MC4	ARRANGED -		-	Robles Granda, P
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. This course has regular in-person exams at the Chicago CBTF in 200 S. Wacker Dr, Chicago. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations.						
78821	Lecture	TGR	12:30 PM - 01:45 PM	TR	100 - Materials Science & Eng Bld	Robles Granda, P

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister. Not intended for First Time Freshman students.						
78820	Lecture	TUG	12:30 PM - 01:45 PM	TR	100 - Materials Science & Eng Bld	Robles Granda, P
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.						

CS 411 **Database Systems** credit: 3 OR 4 hours.

Examination of the logical organization of databases: the entity-relationship model; the hierarchical, network, and relational data models and their languages. Functional dependencies and normal forms. Design, implementation, and optimization of query languages; security and integrity; concurrency control, and distributed database systems. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
75726	Lecture	AG	02:00 PM - 03:15 PM	TR	1024 - Chemistry Annex	Kang, D
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
75725	Lecture	AU	02:00 PM - 03:15 PM	TR	1024 - Chemistry Annex	Kang, D
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
72358	Discussion/ Recitation	CSP	12:30 PM - 01:45 PM	R	-	Alawini, A
	Online	CSP	ARRANGED -		-	Alawini, A
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person meeting in Classroom B at 200 S. Wacker Dr. Chicago. Restricted to O/C Engineering City Scholars students.						
76348	Discussion/ Recitation	MC3	12:30 PM - 01:45 PM	R	-	Alawini, A
	Online	MC3	ARRANGED -		-	Alawini, A
Credit Hours: 3 hours						

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person meeting in Classroom B at 200 S. Wacker Dr. Chicago.						
76349	Discussion/ Recitation	MC4	12:30 PM - 01:45 PM	R	-	Alawini, A
	Online	MC4	ARRANGED -		-	Alawini, A
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person meeting in Classroom B at 200 S. Wacker Dr. Chicago						
40086	Lecture	QG	02:00 PM - 03:20 PM	MW	0027/1025 - Campus Instructional Facility	Alawini, A
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
30109	Lecture	QU	02:00 PM - 03:20 PM	MW	0027/1025 - Campus Instructional Facility	Alawini, A
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 412 **Introduction to Data Mining** credit: 3 OR 4 hours.

Concepts, techniques, and systems of data warehousing and data mining. Design and implementation of data warehouse and on-line analytical processing (OLAP) systems; data mining concepts, methods, systems, implementations, and applications. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
72359	Discussion/ Recitation	CSP	ARRANGED -		- Illini Center	Tahboub, R
	Online	CSP	ARRANGED -		-	Tahboub, R
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Midterms will be in the Chicago CBTF in 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Restricted to O/C Engineering City Scholars students.						
45752	Online	DSO	ARRANGED -		-	Tahboub, R

Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign. Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
48711	Discussion/ Recitation	MC3	ARRANGED -		- Illini Center	Tahboub, R
	Online	MC3	ARRANGED -		-	Tahboub, R
Credit Hours: 3 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS students only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in-person activities that are required. Please speak with your professor regarding expectations. Midterms will be in the Chicago CBTF in 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
61986	Discussion/ Recitation	MC4	ARRANGED -		- Illini Center	Tahboub, R
	Online	MC4	ARRANGED -		-	Tahboub, R
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS students only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in-person activities that are required. Please speak with your professor regarding expectations. Midterms will be in the Chicago CBTF in 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
43358	Lecture-Discussion	PG	11:00 AM - 12:15 PM	TR	1404 - Siebel Center for Comp Sci	Tong, H
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
43357	Lecture-Discussion	PU	11:00 AM - 12:15 PM	TR	1404 - Siebel Center for Comp Sci	Tong, H
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 413 **Intro to Combinatorics** credit: 3 OR 4 hours.

Same as MATH 413. See MATH 413.

CRN	Type	Section	Time	Days	Location	Instructor

33540	Lecture-Discussion	X13	01:00 PM - 01:50 PM	MWF	4039 - Campus Instructional Facility	Keating, D
Credit Hours: 3 hours						
39196	Lecture-Discussion	X14	01:00 PM - 01:50 PM	MWF	4039 - Campus Instructional Facility	Keating, D
Credit Hours: 4 hours Departmental Approval Required Restricted to Graduate - Urbana-Champaign.						

CS 415 **Game Development** credit: 3 OR 4 hours.

A team and project-based course on the technical aspects of video game development and game engine internals: geometric modeling, game physics and AI, shader programming, real-time physically based rendering, and software engineering practices within the game industry. The central focus of the course is the development of a game by teams of 3 to 5 students. The course strongly emphasizes code development using a modern game engine. Students will gain skills necessary to develop games and to develop game engines. 3 undergraduate hours. 4 graduate hours. Prerequisite: CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
79897	Discussion/ Recitation	CSP	ARRANGED -		- Illini Center	Shaffer, E
	Online	CSP	ARRANGED -		-	Shaffer, E
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person exams scheduled in 200 S. Wacker Dr. Chicago. Restricted to O/C Engineering City Scholars students.						
77100	Online Lecture	GG	11:00 AM - 12:15 PM	T	-	Shaffer, E
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. This course will be taught online synchronously. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
77099	Online Lecture	GU	11:00 AM - 12:15 PM	T	-	Shaffer, E
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This course will be taught online synchronously. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
79899	Discussion/ Recitation	MCS	ARRANGED -		-	Shaffer, E
	Online	MCS	ARRANGED -		- Illini Center	Shaffer, E

Credit Hours: 4 hours
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person exams scheduled in 200 S. Wacker Dr. Chicago.
Not intended for First Time Freshman students.

CS 418 **Interactive Computer Graphics** credit: 3 OR 4 hours.

Basic mathematical tools and computational techniques for modeling, rendering, and animating 3-D scenes. Same as CSE 427. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225; One of MATH 225, MATH 257, MATH 415, MATH 416, ASRM 406, or BIOE 210; MATH 241.

CRN	Type	Section	Time	Days	Location	Instructor
36119	Online	AL1	ARRANGED -		-	Tychonievich, L
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.						
36121	Online	AL2	ARRANGED -		-	Tychonievich, L
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister. Not intended for First Time Freshman students.						
67033	Online	DSO	ARRANGED -		-	Tychonievich, L
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign. Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						

CS 421 **Programming Languages & Compilers** credit: 3 OR 4 hours.

Structure of programming languages and their implementation. Basic language design principles; abstract data types; functional languages; type systems; object-oriented languages. Basics of lexing, parsing, syntax-directed translation, semantic analysis, and code generation. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CS 233, CS 240, CS 340 or ECE 391; CS 374 or ECE 374; one of MATH 225, MATH 257, MATH 415, MATH 416, ASRM 406, or BIOE 210.

CRN	Type	Section	Time	Days	Location	Instructor
72203	Discussion/ Recitation	CSP	ARRANGED -		- Illini Center	Gunter, E
	Online	CSP	ARRANGED -		-	Gunter, E

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago.
Restricted to O/C Engineering City Scholars students.

40087	Lecture-Discussion	DG	12:30 PM - 01:45 PM	TR	AUD - Foellinger Auditorium	Gunter, E

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

30128	Lecture-Discussion	DU	12:30 PM - 01:45 PM	TR	AUD - Foellinger Auditorium	Gunter, E

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister

79365	Discussion/ Recitation	MC3	ARRANGED -		ARR - Illini Center	Gunter, E
	Online Lecture	MC3	ARRANGED -		-	Gunter, E

Credit Hours: 3 hours
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago

79366	Lecture-Discussion	MC4	ARRANGED -		ARR - Illini Center	Gunter, E
	Online Lecture	MC4	ARRANGED -		-	Gunter, E

Credit Hours: 4 hours
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago.
Not intended for First Time Freshman students.

CS 422 **Programming Language Design** credit: 3 OR 4 hours.

Exploration of major language design paradigms using imperative and functional programming as unifying themes. Tools include both practical language processor construction and theoretical models. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 421.

CRN	Type	Section	Time	Days	Location	Instructor

30132	Lecture-Discussion	T3	12:30 PM - 01:45 PM	TR	1214 - Siebel Center for Comp Sci	Rosu, G
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
40088	Lecture-Discussion	T4	12:30 PM - 01:45 PM	TR	1214 - Siebel Center for Comp Sci	Rosu, G
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						

CS 423 **Operating Systems Design** credit: 3 OR 4 hours.

Organization and structure of modern operating systems and concurrent programming concepts. Deadlock, virtual memory, processor scheduling, and disk systems. Performance, security, and protection. Same as CSE 423. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CS 241, CS 341, or ECE 391.

CRN	Type	Section	Time	Days	Location	Instructor
36115	Lecture-Discussion	SG	02:00 PM - 03:15 PM	TR	2100 - Sidney Lu Mech Engr Bldg	Alagappan, R Xu, T
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
36113	Lecture-Discussion	SU	02:00 PM - 03:15 PM	TR	2100 - Sidney Lu Mech Engr Bldg	Alagappan, R Xu, T
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 424 **Real-Time Systems** credit: 3 OR 4 hours.

Supervisory control aspects of Cyber Physical Systems (CPS): fundamentals of reliability analysis, real-time scheduling, simple feedback control, software fault tolerance architecture, wireless networking and energy saving, principles of safety critical system engineering. Student groups design and demonstrate supervisory control architecture for a robot. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CS 241, CS 341 or ECE 391.

CRN	Type	Section	Time	Days	Location	Instructor
51776	Lecture-Discussion	PG	12:30 PM - 01:45 PM	WF	0216 - Siebel Center for Comp Sci	Sha, L

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

51775	Lecture-Discussion	PU	12:30 PM - 01:45 PM	WF	0216 - Siebel Center for Comp Sci	Sha, L

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 425 **Distributed Systems** credit: 3 OR 4 hours.

Protocols, specification techniques, global states and their determination, reliable broadcast, transactions and commitment, security, and real-time systems. Same as ECE 428. 3 or 4 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent enrollment in one of CS 240, CS 241, CS 340, CS 341 or ECE 391.

CRN	Type	Section	Time	Days	Location	Instructor
72128	Discussion/ Recitation	CSP	ARRANGED -		- Illini Center	Ganesan, A Gupta, I
	Online	CSP	ARRANGED -		-	Ganesan, A Gupta, I

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http:// go.cs.illinois.edu/csregister.
Restricted to O/C Engineering City Scholars students.

67394	Online	DSO	ARRANGED -		-	Ganesan, A Gupta, I

Credit Hours: 4 hours
Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.

71082	Discussion/ Recitation	MCS	ARRANGED -		- Illini Center	Ganesan, A Gupta, I
	Online	MCS	ARRANGED -		-	Ganesan, A Gupta, I

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http:// go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

57769	Lecture-Discussion	SG	02:00 PM - 03:15 PM	TR	0027/1025 - Campus	Ganesan, A Gupta, I

					Instructional Facility	
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister Not intended for First Time Freshman students.						
36091	Lecture-Discussion	SU	02:00 PM - 03:15 PM	TR	0027/1025 - Campus Instructional Facility	Ganesan, A Gupta, I
Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. Following the add/drop policies in the university's Student Code, undergraduates may switch from 3 to 4 hours or from 4 to 3 hours up until the drop deadline, as noted in the academic calendar: https://registrar.illinois.edu/academic-calendars/. After that, the CS department will not approve late credit-hour changes except under "extraordinary circumstances beyond a student's control." For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister						

CS 426 **Compiler Construction** credit: 3 OR 4 hours.

Compiler structure, syntax analysis, syntax-directed translation, automatically constructed recognizers, semantic analysis, code generation, intermediate language, optimization techniques. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent enrollment in CS 421.

CRN	Type	Section	Time	Days	Location	Instructor
43356	Lecture-Discussion	NG	09:30 AM - 10:45 AM	TR	1304 - Siebel Center for Comp Sci	Adve, V
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
43355	Lecture-Discussion	NU	09:30 AM - 10:45 AM	TR	1304 - Siebel Center for Comp Sci	Adve, V
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 427 **Software Engineering I** credit: 3 OR 4 hours.

Software process, analysis and design. Software development paradigms, system engineering, function-based analysis and design, and object-oriented analysis and design. Course will use team-projects for hands-on exercises. Same as CSE 426. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CS 222, CS 240, CS 241, CS 340, CS 341 or ECE 391.

CRN	Type	Section	Time	Days	Location	Instructor
70960	Online	DSO	ARRANGED -		-	Zhang, L
Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC.						

This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.

36104	Online	S3	ARRANGED -		-	Zhang, L

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.

36107	Online	S4	ARRANGED -		-	Zhang, L

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

CS 433 **Computer System Organization** credit: 3 OR 4 hours.

Computer hardware design and analysis and interface with software. Advanced processor design, including superscalar, out-of-order issue, branch prediction, and speculation. Memory hierarchy design, including advanced cache optimizations, main memory, and virtual memory. Principles of multiprocessor design, including shared-memory, cache coherence, synchronization, and consistency. Other advanced topics depending on time; e.g., GPUs and accelerators, warehouse computers and data centers, security. Same as CSE 422. 3 undergraduate hours. 4 graduate hours. Prerequisite: CS 233.

CRN	Type	Section	Time	Days	Location	Instructor
79901	Lecture-Discussion	CSP	12:30 PM - 01:45 PM	R	ARR - Illini Center	Ghose, S
	Online Lecture	CSP	12:30 PM - 01:45 PM	T	-	Ghose, S

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom B at 200 S. Wacker Dr. Chicago.
Restricted to O/C Engineering City Scholars students.

36076	Lecture-Discussion	MCS	12:30 PM - 01:45 PM	R	ARR - Illini Center	Ghose, S
	Online Lecture	MCS	12:30 PM - 01:45 PM	T	-	Ghose, S

Credit Hours: 4 hours
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.

This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom B at 200 S. Wacker Dr. Chicago.
Not intended for First Time Freshman students.

36069	Lecture-Discussion	T3	12:30 PM - 01:45 PM	TR	157 - Noyes Laboratory	Ghose, S

Credit Hours: 3 hours
Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign.
https://courses.grainger.illinois.edu/cs433 For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

43363	Lecture-Discussion	T4	12:30 PM - 01:45 PM	TR	157 - Noyes Laboratory	Ghose, S

Credit Hours: 4 hours
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
https://courses.grainger.illinois.edu/cs433 For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

CS 437 **Topics in Internet of Things** credit: 3 OR 4 hours.

Topics of networked embedded computing technology, known as the Internet of Things, in application, distributed, human-centric, or social contexts. The tight coupling between people, networking protocols, computing elements, and physical things in IoT systems presents unique challenges for data collection, processing in constrained computation and communication environments. Introduces general principles of IoT systems and protocol, offers broad foundations for IoT services, and allows specialization to pursue an in-depth understanding of selected IoT aspects or subtopics. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Credit towards a degree from multiple offerings of this course is not given if those offerings have significant overlap, as determined by the CS department. Prerequisite: CS 241 or CS 341. Additional prerequisites may be specified each term. See section information.

CRN	Type	Section	Time	Days	Location	Instructor
79776	Discussion/ Recitation	CSP	12:30 PM - 01:45 PM	F	ARR - Illini Center	Caesar, M
	Online Lecture	CSP	ARRANGED -		-	Caesar, M

Credit Hours: 3 hours
Networked IoT Systems
Restricted to Undergrad - Urbana-Champaign.
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom B at 200 S. Wacker Dr. Chicago.
Restricted to O/C Engineering City Scholars students.

75719	Online	DSO	ARRANGED -		-	Caesar, M

Credit Hours: 4 hours
Networked IoT Systems
Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.

75717	Online	ITG	ARRANGED -		-	Caesar, M

Credit Hours: 4 hours

Networked IoT Systems
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

78710	Online	ITU	ARRANGED -		-	Caesar, M

Credit Hours: 3 hours
Networked IoT Systems
Restricted to Undergrad - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC or MCS: Computer Sci OFF - UIUC.
This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.

78803	Discussion/ Recitation	MCS	12:30 PM - 01:45 PM	F	ARR - Illini Center	Caesar, M
	Online Lecture	MCS	ARRANGED -		-	Caesar, M

Credit Hours: 4 hours
Networked IoT Systems
Restricted to Computer Science or Bioinformatics major(s). Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom B at 200 S. Wacker Dr. Chicago.

CS 438 **Communication Networks** credit: 3 OR 4 hours.

Layered architectures and the OSI Reference Model; design issues and protocols in the transport, network, and data link layers; architectures and control algorithms of local-area, point-to-point, and satellite networks; standards in networks access protocols; models of network interconnection; overview of networking and communication software. Same as ECE 438. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CS 241, CS 341 or ECE 391; strongly recommend one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463 or STAT 400.

CRN	Type	Section	Time	Days	Location	Instructor
36061	Lecture-Discussion	X3	03:30 PM - 04:45 PM	MW	1320 - Digital Computer Laboratory	Agarwal, S Wei, Y

Credit Hours: 3 hours
Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

57772	Lecture-Discussion	X4	03:30 PM - 04:45 PM	MW	1320 - Digital Computer Laboratory	Agarwal, S Wei, Y

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.

For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

CS 439 **Wireless Networks** credit: 3 OR 4 hours.

Same as ECE 439. See ECE 439.

CRN	Type	Section	Time	Days	Location	Instructor
61199	Lecture	B3	09:30 AM - 10:45 AM	WF	1304 - Siebel Center for Comp Sci	Kravets, R
Credit Hours: 3 hours						
61201	Lecture	B4	09:30 AM - 10:45 AM	WF	1304 - Siebel Center for Comp Sci	Kravets, R
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign.						

CS 440 **Artificial Intelligence** credit: 3 OR 4 hours.

Major topics in and directions of research in artificial intelligence: basic problem solving techniques, knowledge representation and computer inference, machine learning, natural language understanding, computer vision, robotics, and societal impacts. Same as ECE 448. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225; one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463, STAT 400 or BIOE 310.

CRN	Type	Section	Time	Days	Location	Instructor
67003	Lecture	R3	09:00 AM - 09:50 AM	MWF	0027/1025 - Campus Instructional Facility	Fleck, M
Credit Hours: 3 hours Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
67004	Lecture	R4	09:00 AM - 09:50 AM	MWF	0027/1025 - Campus Instructional Facility	Fleck, M
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						

CS 441 **Applied Machine Learning** credit: 3 OR 4 hours.

Techniques of machine learning to various signal problems: regression, including linear regression, multiple regression, regression forest and nearest neighbors regression; classification with various methods, including logistic regression, support vector machines, nearest neighbors, simple boosting and decision forests; clustering with various methods, including basic agglomerative clustering and k-means; resampling methods, including cross-validation and the bootstrap; model selection methods, including AIC, stepwise selection and the lasso; hidden Markov models; model estimation in the presence of missing variables; and neural networks, including deep networks. The course will focus on tool-oriented and problem-oriented exposition. Application areas include computer vision, natural

language, interpreting accelerometer data, and understanding audio data. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CS 225 or CS 277, and one of CS 361, STAT 361, ECE 313, BIOE 310, MATH 362, MATH 461, MATH 463 or STAT 400.

CRN	Type	Section	Time	Days	Location	Instructor
74468	Lecture-Discussion	AMG	12:30 PM - 01:45 PM	TR	0027/1025 - Campus Instructional Facility	Hoiem, D
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister Not intended for First Time Freshman students.						
74467	Lecture-Discussion	AMU	12:30 PM - 01:45 PM	TR	0027/1025 - Campus Instructional Facility	Hoiem, D
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister						
79903	Online	CSU	ARRANGED -		-	Morales Aguirre, M
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This section is now open to both Chicago City Scholars and Urbana undergraduates. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. This section will be taught on the Coursera platform. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
74471	Online	DSO	ARRANGED -		-	Morales Aguirre, M
Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
79904	Online	MCG	ARRANGED -		-	Morales Aguirre, M
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. This section is open to Chicago MCS and Urbana graduate students. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. This section will be taught on the Coursera platform. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						

CS 444 **Deep Learning for Computer Vision** credit: 3 OR 4 hours.

Provides an elementary hands-on introduction to neural networks and deep learning with an emphasis on computer vision applications. Topics include: linear classifiers; multi-layer neural networks; back-propagation and stochastic gradient descent; convolutional neural networks and their applications to object detection and dense image labeling; recurrent neural networks and state-of-the-art sequence models like transformers; generative adversarial networks and variational autoencoders for image generation; and deep reinforcement learning. Coursework will consist of programming assignments in a common deep learning framework. Those registered for 4 credit hours will have to complete a project. Same as ECE 494. 3 undergraduate hours. 4 graduate hours. Prerequisite: MATH 241; one of MATH 225, MATH 257, MATH 415, MATH 416, ASRM 406, or BIOE 210; CS 225; one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463 or STAT 400. No previous exposure to machine learning is required.

CRN	Type	Section	Time	Days	Location	Instructor
78419	Lecture-Discussion	CVG	03:30 PM - 04:45 PM	WF	3031 - Campus Instructional Facility	Gupta, S
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
77548	Lecture-Discussion	CVU	03:30 PM - 04:45 PM	WF	3031 - Campus Instructional Facility	Gupta, S
Credit Hours: 3 hours Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 445 **Computational Photography** credit: 3 OR 4 hours.

Computer vision techniques to enhance, manipulate, and create media from photo collections, such as panoramic stitching, face morphing, texture synthesis, blending, and 3D reconstruction. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225, MATH 225, and MATH 231.

CRN	Type	Section	Time	Days	Location	Instructor
65087	Online	CG	ARRANGED -		-	Wang, Y
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister. Not intended for First Time Freshman students.						
65086	Online	CU	ARRANGED -		-	Wang, Y
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.						

73794	Online	DSO	ARRANGED -		-	Wang, Y

Credit Hours: 4 hours
Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.

CS 446 **Machine Learning** credit: 3 OR 4 hours.

Principles and applications of machine learning. Main paradigms and techniques, including discriminative and generative methods, reinforcement learning: linear regression, logistic regression, support vector machines, deep nets, structured methods, dimensionality reduction, k-means, Gaussian mixtures, expectation maximization, Markov decision processes, and Q-learning. Application areas such as natural language and text understanding, speech recognition, computer vision, data mining, and adaptive computer systems, among others. Same as ECE 449. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225; One of MATH 225, MATH 257, MATH 415, MATH 416, ASRM 406 or BIOE 210; one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463, STAT 400 or BIOE 310.

CRN	Type	Section	Time	Days	Location	Instructor
46792	Online	B3	ARRANGED -		-	Gui, L

Credit Hours: 3 hours
Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign.
This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.

46793	Online	B4	ARRANGED -		-	Gui, L

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC or NDEG:Computer Science Onl-UIUC.
This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

60403	Online	DSO	ARRANGED -		-	Gui, L

Credit Hours: 4 hours
Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.

77676	Discussion/ Recitation	MCS	ARRANGED -		-	Gui, L
	Online	MCS	ARRANGED -		-	Gui, L

Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS students only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in-person activities that are required. Please speak with your professor regarding

expectations. Midterms will be in the Chicago CBTF in 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 447 **Natural Language Processing** credit: 3 OR 4 hours.

Part-of-speech tagging, parsing, semantic analysis and machine translation. Relevant linguistics concepts from morphology (word formation) and lexical semantics (the meaning of words) to syntax (sentence structure) and compositional semantics (the meaning of sentences). 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CS 173 or MATH 213; CS 225; CS 374 or ECE 374; one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463, STAT 400 or BIOE 310; one of MATH 225, MATH 257, MATH 415, MATH 416, ASRM 406 or BIOE 210.

CRN	Type	Section	Time	Days	Location	Instructor
70473	Online	DSO	ARRANGED -		-	Peng, H
Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
63293	Online	NL3	ARRANGED -		-	Peng, H
Credit Hours: 3 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister. Not intended for First Time Freshman students.						
80983	Online	NLG	ARRANGED -		-	Peng, H
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister. Not intended for First Time Freshman students.						
63292	Online	NLU	ARRANGED -		-	Peng, H
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.						

CS 450 **Numerical Analysis** credit: 3 OR 4 hours.

Linear system solvers, optimization techniques, interpolation and approximation of functions, solving systems of nonlinear equations, eigenvalue problems, least squares, and quadrature; numerical handling of ordinary and partial differential equations. Same as CSE 401, ECE 491, and MATH 450. 3 undergraduate hours. 3 or 4 graduate hours. Credit is not given toward graduation for both CS 450 and CS 457. Prerequisite: One of CS 101, CS 124 or CS 125; one of CS 357, MATH 257, MATH 357, MATH 415, or MATH 416; MATH 285.

CRN	Type	Section	Time	Days	Location	Instructor
36016	Lecture-Discussion	BL1	11:00 AM - 12:15 PM	TR	0035 - Campus Instructional Facility	Kloeckner, A Olson, L
Credit Hours: 3 hours Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
36020	Lecture-Discussion	BL2	11:00 AM - 12:15 PM	TR	0035 - Campus Instructional Facility	Kloeckner, A Olson, L
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
70469	Discussion/ Recitation	CSP	ARRANGED -		- Illini Center	Kloeckner, A
	Online	CSP	ARRANGED -		-	Kloeckner, A
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Midterms will be in the Chicago CBTF in 200 S. Wacker Dr. Chicago. This section will be taught on the Coursera platform. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Restricted to O/C Engineering City Scholars students.						
72454	Online	DSO	ARRANGED -		-	Kloeckner, A
Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
64881	Discussion/ Recitation	MC4	ARRANGED -		- Illini Center	Kloeckner, A
	Online	MC4	ARRANGED -		-	Kloeckner, A
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS students only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Midterms will be in the Chicago CBTF in 200 S. Wacker Dr. Chicago. This section will be taught on the Coursera platform. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552.						

There will be no late adds after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

CS 460 **Security Laboratory** credit: 3 OR 4 hours.

Operating systems security: access control, least privilege mechanism and malware techniques. Network security: firewalls, sniffing, tunnels, intrusion detection, AAA and worm structure. System security: forensics security architectures, and attack/defend exercises. Complements CS 461 via hands-on project. Same as ECE 419. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 461 or ECE 422 or a combination of CS 463 and one of CS 340, CS 341 or ECE 391.

CRN	Type	Section	Time	Days	Location	Instructor
78444	Online Lecture	ALG	ARRANGED -		-	Nicol, D O'Brien, C
Credit Hours: 4 hours Instructor Approval Required Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. This course is instructor approval only because it is primarily intended for Illinois Cyber Security Scholars Program students. If there are seats still available after they have had an opportunity to register the remaining seats will be opened and a post will be made to the CS piazza forum. Not intended for First Time Freshman students.						
78443	Online Lecture	ALU	ARRANGED -		-	Nicol, D O'Brien, C
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. This course is instructor approval only because it is primarily intended for Illinois Cyber Security Scholars Program students. If there are seats still available after they have had an opportunity to register the remaining seats will be opened and a post will be made to the CS piazza forum.						
78448	Laboratory	LB1	05:00 PM - 07:50 PM	W	0218 - Siebel Center for Comp Sci	Nicol, D O'Brien, C
Students need to have a laptop for this lab.						

CS 461 **Computer Security I** credit: 4 hours.

Fundamental principles of computer and communications security and information assurance: ethics, privacy, notions of threat, vulnerabilities, and risk in systems, information warfare, malicious software, data secrecy and integrity issues, network security, trusted computing, mandatory and discretionary access controls, certification and accreditation of systems against security standards. Security mechanisms: authentication, auditing, intrusion detection, access control, cryptography, security protocols, key distribution. Same as ECE 422. 4 undergraduate hours. 4 graduate hours. Prerequisite: One of CS 241, CS 341 or ECE 391, or a combination of CS 233 and CS 340.

CRN	Type	Section	Time	Days	Location	Instructor
69008	Discussion/ Recitation	ADA	10:00 AM - 10:50 AM	W	0218 - Siebel Center for Comp Sci	Borisov, N
69009	Discussion/ Recitation	ADB	11:00 AM - 11:50 AM	W	0218 - Siebel Center for Comp Sci	Borisov, N

69010	Discussion/ Recitation	ADC	12:00 PM - 12:50 PM	W	0218 - Siebel Center for Comp Sci	Borisov, N
69013	Discussion/ Recitation	ADD	01:00 PM - 01:50 PM	W	0218 - Siebel Center for Comp Sci	Borisov, N
66966	Discussion/ Recitation	ADE	02:00 PM - 02:50 PM	W	0218 - Siebel Center for Comp Sci	Borisov, N
66969	Discussion/ Recitation	ADH	03:00 PM - 03:50 PM	W	0218 - Siebel Center for Comp Sci	Borisov, N
49547	Lecture	AL4	12:30 PM - 01:45 PM	TR	1320 - Digital Computer Laboratory	Borisov, N Zhang, Y
Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
72159	Lecture	ALG	12:30 PM - 01:45 PM	TR	1320 - Digital Computer Laboratory	Borisov, N Zhang, Y
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
50236	Lecture	CSP	ARRANGED -		-	Bates, A
	Online Discussion	CSP	ARRANGED -		-	Bates, A
Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Restricted to O/C Engineering City Scholars students.						
50496	Online	DSO	ARRANGED -		-	Bates, A
Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
69012	Laboratory-Discussion	MCS	ARRANGED -		-	Bates, A
	Online	MCS	ARRANGED -		-	Bates, A

Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations.

CS 463 **Computer Security II** credit: 3 OR 4 hours.

Program security, trusted base, privacy, anonymity, non-interference, information flow, confinement, advanced auditing, forensics, intrusion detection, key management and distribution, policy composition and analysis, formal approaches to specification and verification of secure systems and protocols, and topics in applied cryptography. Same as ECE 424. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CCS 225 and one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463 or STAT 400. CS 441 completion is recommended.

CRN	Type	Section	Time	Days	Location	Instructor
49551	Online	BG	ARRANGED -		-	Chandrasekaran, V
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister. Not intended for First Time Freshman students.						
49550	Online	BU	ARRANGED -		-	Chandrasekaran, V
Credit Hours: 3 hours Not intended for Computer Engineering major(s). Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.						
77849	Online	DSO	ARRANGED -		-	Chandrasekaran, V
Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						

CS 464 **Topics in Societal and Ethical Impacts of Computer Technology** credit: 3 hours.

Topics selected from key current areas of impact of computer technology on aspects of society and ethics such as: freedom versus the rule of law in cyberspace; social discourse; privacy; livelihoods and automation; fairness; security; political change; business models; technology divide. 3 undergraduate hours. No graduate credit. May be repeated if topics vary. Credit is not given towards a degree from multiple offerings of this course, if those offerings have significant overlap, as determined by the CS department. Prerequisite: CS 225. One of CS 210 or CS 211 or ECE 316 or PHIL 316. One of CS 361 or STAT 400 or STAT 200. Restricted to students with senior standing.

CRN	Type	Section	Time	Days	Location	Instructor
74739	Lecture	CD1	11:00 AM - 12:15 PM	TR	1214 - Siebel Center for Comp Sci	Gunter, C
Credit Hours: 3 hours Cyber Dystopia Restricted to Undergrad - Urbana-Champaign. Most university training in Computer Science focuses on technology advancement: writing more efficient programs, mining over bigger data, teaching a computer to more accurately distinguish a cat from a dog, and so on. The Cyber Dystopia course focuses instead on the downsides of such technology advancement. Course participants will explore history and context, characterize key problems, assess their severity, predict their future, speculate on how much of what we are facing is inevitable, and think about what						

steps might avoid or mitigate the most undesirable outcomes. This will be guided by reading and class discussion of recent works on the topic. Topics include Freedom and the Rule of Law Social Discourse Fate of Humanity Information Technology Industry Fairness Privacy and Surveillance Political Change Security For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 465 **User Interface Design** credit: 4 hours.

A project-focused course covering fundamental principles of user interface design, implementation, and evaluation. Small teams work on a term-long project that involves: analysis of the problem domain, user skills, and tasks; iterative prototyping of interfaces to address user needs; conducting several forms of evaluation such as cognitive walkthroughs and usability tests; implementation of the final prototype. Non-technical majors may enroll as non-programmers who participate in all aspects of the projects with the possible exception of implementation. 4 undergraduate hours. 4 graduate hours. Prerequisite: CS 225.

CRN	Type	Section	Time	Days	Location	Instructor
67943	Laboratory-Discussion	AD1	09:30 AM - 10:50 AM	F	3038 - Campus Instructional Facility	Bailey, B
67945	Laboratory-Discussion	AD2	11:00 AM - 12:20 PM	F	3038 - Campus Instructional Facility	Bailey, B
67946	Laboratory-Discussion	AD3	12:30 PM - 01:50 PM	F	3038 - Campus Instructional Facility	Bailey, B
67944	Laboratory-Discussion	AD4	02:00 PM - 03:20 PM	F	3038 - Campus Instructional Facility	Bailey, B
76292	Laboratory-Discussion	AD5	11:00 AM - 12:20 PM	F	2018 - Campus Instructional Facility	Bailey, B
67948	Laboratory-Discussion	AD6	03:30 PM - 04:50 PM	F	3117 - Everitt Laboratory	Bailey, B
69398	Laboratory-Discussion	AD7	02:00 PM - 03:20 PM	F	3117 - Everitt Laboratory	Bailey, B
User Interface Design Studio						
72163	Lecture-Discussion	AEG	09:30 AM - 10:45 AM	MW	1320 - Digital Computer Laboratory	Bailey, B

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

43389	Lecture-Discussion	AEU	09:30 AM - 10:45 AM	MW	1320 - Digital Computer Laboratory	Bailey, B
Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
70496	Laboratory-Discussion	CSP	11:00 AM - 12:20 PM	F	-	Bailey, B
	Online	CSP	ARRANGED -		-	Bailey, B
Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom B at 200 S. Wacker Dr. Chicago. Restricted to O/C Engineering City Scholars students.						
67949	Laboratory-Discussion	MCS	11:00 AM - 12:20 PM	F	-	Bailey, B
	Online	MCS	ARRANGED -		-	Bailey, B
Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom B at 200 S. Wacker Dr. Chicago.						

CS 468 **Tech and Advertising Campaigns** credit: 3 hours.

Same as ADV 492. See ADV 492.

CRN	Type	Section	Time	Days	Location	Instructor
67895	Lecture-Discussion	A	09:00 AM - 10:50 AM	TR	31 - Gregory Hall	Su, L
Meets 25-Aug-25 - 17-Oct-25. Restricted to Computer Science or Statistics & Computer Science or Math & Computer Science or Computer Sci & Anthropology or Computer Sci & Astronomy or Computer Sci & Chemistry or Computer Sci & Linguistics or Computer Science&Crop Sciences or Computer Science and Music or Computer Science & Economics or Computer Science & Geog & GIS or Computer Science & Philosophy or Computer Sci & Animal Sci or Computer Science & Education or Computer Science and Physics or ComputerScience&Bioengineering major(s). Restricted to students with Junior or Senior class standing. Meets with ADV 492. This project-based course will allow teams of media and computer science students to use technology platforms to solve problems supplied by industry clients. Each student will bring their expertise to the problem at hand. Computer Science students should have a knowledge of coding in various platforms. Note, this 6 hour class has 4 contact hours each week. Students will be expected to make up the additional 2 hours of credit each week outside of class. This work will include learning SQL, online Amazon certification, and other online certification work. More information will be provided by the instructor. Please Note: At no time will seats be opened to non-majors/minors as defined in the restrictions.						

CS 470 **Social and Information Networks** credit: 3 OR 4 hours.

Social networks, auctions, and stock-markets appear to be very different phenomena, but they share a common foundation—the science of networks. The learning goal: to provide a broad, accessible introduction to the foundations of network science. We shall draw on ideas from mathematical sociology, and from game theory to understand strategic interaction over networks. We shall develop algorithms to identify network properties, and models for explaining network dynamics, including viral behavior. 3 undergraduate hours. 4 graduate hours. Prerequisite: CS 225; CS 173; one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463 or STAT 400; one of MATH 225, MATH 257, MATH 415, MATH 416, ASRM 406, or BIOE 210.

CRN	Type	Section	Time	Days	Location	Instructor
77201	Lecture-Discussion	HSG	12:30 PM - 01:45 PM	WF	1404 - Siebel Center for Comp Sci	Sundaram, H
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
77200	Lecture-Discussion	HSU	12:30 PM - 01:45 PM	WF	1404 - Siebel Center for Comp Sci	Sundaram, H
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
79869	Lecture-Discussion	MCS	12:30 PM - 01:45 PM	W	ARR - Illini Center	Sundaram, H
	Online Lecture	MCS	12:30 PM - 01:45 PM	F	-	Sundaram, H
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago. Not intended for First Time Freshman students.						

CS 473 **Algorithms** credit: 4 hours.

Design and analysis techniques, approximation algorithms, randomized algorithms and amortized analysis, and advanced topics such as network flow, linear programming, and dynamic data structures, among others. Same as CSE 414 and MATH 473. 4 undergraduate hours. 4 graduate hours. Prerequisite: CS 374 or ECE 374, and one of CS 361, STAT 361, ECE 313, MATH 362, MATH 461, MATH 463 or STAT 400.

CRN	Type	Section	Time	Days	Location	Instructor
51491	Discussion/ Recitation	CSP	02:00 PM - 03:15 PM	R	-	Sinha, M
	Online	CSP	02:00 PM - 03:15 PM	T	-	Sinha, M
Credit Hours: 4 hours Restricted to Undergrad - Urbana-Champaign. This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person exams scheduled in 200 S. Wacker Dr. Chicago. Restricted to O/C Engineering City Scholars students.						
51492	Discussion/ Recitation	MCS	02:00 PM - 03:15 PM	R	-	Sinha, M

	Online	MCS	02:00 PM - 03:15 PM	T	-	Sinha, M
Credit Hours: 4 hours Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person exams scheduled in 200 S. Wacker Dr. Chicago.						
70159	Lecture-Discussion	S4	02:00 PM - 03:15 PM	TR	151 - Loomis Laboratory	Sinha, M
Credit Hours: 4 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
72165	Lecture-Discussion	S4G	02:00 PM - 03:15 PM	TR	151 - Loomis Laboratory	Sinha, M
Credit Hours: 4 hours Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						

CS 475 **Formal Models of Computation** credit: 3 OR 4 hours.

Finite automata and regular languages; pushdown automata and context-free languages; Turing machines and recursively enumerable sets; linear-bounded automata and context-sensitive languages; computability and the halting problem; undecidable problems; recursive functions; Chomsky hierarchy; computational complexity. Same as MATH 475. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 374 or ECE 374.

CRN	Type	Section	Time	Days	Location	Instructor
35887	Lecture-Discussion	C3	11:00 AM - 12:15 PM	M	106B1 - Engineering Hall	Viswanathan, M
	Online	C3	ARRANGED -		-	Viswanathan, M
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						
35895	Lecture-Discussion	C4	11:00 AM - 12:15 PM	M	106B1 - Engineering Hall	Viswanathan, M
	Online	C4	ARRANGED -		-	Viswanathan, M
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Not intended for First Time Freshman students.						
41803	Online	DSO	ARRANGED -		-	Viswanathan, M

Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
79870	Lecture-Discussion	MC3	02:00 PM - 03:15 PM	F	-	Viswanathan, M
	Online	MC3	ARRANGED -		-	Viswanathan, M
Credit Hours: 3 hours Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person meeting in conference room 702 at 200 S. Wacker Dr. Chicago.						
79871	Lecture-Discussion	MC4	02:00 PM - 03:15 PM	F	-	Viswanathan, M
	Online	MC4	ARRANGED -		-	Viswanathan, M
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC. This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person meeting in conference room 702 at 200 S. Wacker Dr. Chicago.						

CS 481 **Advanced Topics in Stochastic Processes & Applications** credit: 3 OR 4 hours.

Same as IE 410. See IE 410.

CRN	Type	Section	Time	Days	Location	Instructor
52040	Laboratory	E	04:00 PM - 04:50 PM	MW	1043 - Sidney Lu Mech Engr Bldg	Jacobson, S
	Lecture-Discussion	E	03:00 PM - 03:50 PM	MW	1043 - Sidney Lu Mech Engr Bldg	Jacobson, S
Credit Hours: 3 hours Restricted to Undergrad - Urbana-Champaign.						
58069	Laboratory	G	04:00 PM - 04:50 PM	MW	1043 - Sidney Lu Mech Engr Bldg	Jacobson, S
	Lecture-Discussion	G	03:00 PM - 03:50 PM	MW	1043 - Sidney Lu Mech Engr Bldg	Jacobson, S
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign. 3 or 4 hours.						

CS 483 **Applied Parallel Programming** credit: 4 hours.

Same as CSE 408 and ECE 408. See ECE 408.

CRN	Type	Section	Time	Days	Location	Instructor
58793	Laboratory	AB	ARRANGED -		-	Kindratenko, V
76324	Lecture	AL1	09:30 AM - 10:50 AM	TR	1002 - Electrical & Computer Eng Bldg	Kindratenko, V
73997	Online Lab	CSP	ARRANGED -		-	Kindratenko, V
	Online Lecture	CSP	ARRANGED -		-	Kindratenko, V
This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homework, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. In-person meeting in Classroom B at 200 S. Wacker Dr. Chicago. Restricted to O/C Engineering City Scholars students.						
80061	Online Lab	ONL	ARRANGED -		-	Kindratenko, V
	Online Lecture	ONL	09:30 AM - 10:50 AM	TR	-	Kindratenko, V
Restricted to MENG:Elec & Comp Eng ONL -UIUC.						

CS 484 **Parallel Programming** credit: 3 OR 4 hours.

Techniques for the programming of all classes of parallel computers and devices including shared memory and distributed memory multiprocessors, SIMD processors and co-processors, and special purpose devices. Key concepts in parallel programming such as reactive and transformational programming, speculation, speedup, isoefficiency, and load balancing. Synchronization primitives, libraries and languages for parallel programming such as OpenMP and MPI, performance monitoring, program tuning, analysis and programming of numerical and symbolic parallel algorithms. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 241 or CS 341.

CRN	Type	Section	Time	Days	Location	Instructor
71093	Online	DSO	ARRANGED -		-	Rauchwerger, L
Credit Hours: 4 hours Restricted to MCS:Computer Sci Online -UIUC. This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.						
67876	Online	PPG	ARRANGED -		-	Rauchwerger, L
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. This section is for "on campus" students. This course will be taught on the Coursera platform. Students taking CS courses on the Coursera platform for the first time must take additional steps to correctly setup their Coursera account and complete a brief onboarding course to gain access to the course. Students who enroll in this course must read “Instructions to access CS courses delivered on Coursera platform” available at http://go.cs.illinois.edu/CSregister, failure to follow these instructions will result in late course access. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister Not intended for First Time Freshman students.						

67875	Online	PPU	ARRANGED -		-	Rauchwerger, L

Credit Hours: 3 hours
Restricted to Undergrad - Urbana-Champaign.
This section is for "on campus" students. This course will be taught on the Coursera platform. Students taking CS courses on the Coursera platform for the first time must take additional steps to correctly setup their Coursera account and complete a brief onboarding course to gain access to the course. Students who enroll in this course must read “Instructions to access CS courses delivered on Coursera platform” available at http://go.cs.illinois.edu/CSregister. Failure to follow these instructions will result in late course access. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister

CS 491 **Seminar** credit: 0 TO 4 hours.

Seminar on topics of current interest as announced in the Class Schedule. 0 to 4 undergraduate hours. 0 to 4 graduate hours. Approved for S/U grading only. May be repeated in the same or separate terms if topics vary to a maximum of 4 hours. Prerequisite: As specified for each topic offering, see Class Schedule or departmental course description.

CRN	Type	Section	Time	Days	Location	Instructor
65816	Laboratory	CAP	03:30 PM - 04:20 PM	MWF	2101 - Everitt Laboratory	Beckman, M

Credit Hours: 3 hours
Adv Competitive Algorithm Prog
Title: Introduction to Competitive Algorithmic Programming This course introduces the algorithms and concepts necessary to compete effectively in the ACM International Collegiate Programming Contest (ICPC) and similar contests. It is highly recommended for students intending to compete in the 2016 ICPC Mid-Central Regional contest. The course requires participation in practice contests and weekly completion of short problem sets. Topics covered include standard library classes and data structures useful for programming contest problems, basic complexity analysis, dynamic programming, graph algorithms, number theory, combinatorics, computational geometry, combinatorial games, and competitive programming contest strategy. https://uiuc-cs491cap.netlify.app/
Prerequisites: Must have programming competency in Java or C++ and preferably have taken CS 225 Data Structures.
Not intended for First Time Freshman students.

54321	Lecture	CB	05:00 PM - 06:00 PM	W	301 - Coordinated Science Lab	Bashir, M Levchenko, K

Credit Hours: 2 hours
Cyber Security Scholar Program
Instructor Approval Required
Topic: Information Assurance and Trust Seminar. This course is an undergraduate and graduate seminar for students admitted to the Illinois Cyber Security Scholar Program. In addition, this course would be open and serve as an orientation seminar to all college of engineering undergraduate student interested in topics of information assurance and trust. The seminars will feature information assurance subject matter expert guest speakers from industry and government, community leaders, distinguished external researchers, faculty, and students discussing both the technical challenges and limitations of IA. Standard information assurance topics such as authentication, data integrity, ethics, and cyber security will be covered. This course will meet at CSL 141
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

67520	Online	ECO	01:00 PM - 02:15 PM	F	-	Gertner, Y Williams, T

Credit Hours: 1 hours
Excursions in Computing I
Restricted to GCRT:ComputingFundam - UIUC or GCRT:ComputingFundam ONL- UIUC.
This course is for those coded for the iCan program only.

40557	Lecture-Discussion	EIT	05:00 PM - 05:50 PM	R	0216 - Siebel Center for Comp Sci	Lewis, C

Credit Hours: 1 hours
Intro to Inclusive Terminology
This course is an introduction to topics of social justice, inclusive terminology, and intersectionality. Through watching videos and discussing questions in small groups, participants will learn about identity, intersectionality, gender, sex, sexuality, disability, race, and ethnicity. The discussions are designed to help participants gain fluency with vocabulary, understand their own and others' experiences, and learn about historical context and systemic issues. The content of the course is drawn from a resource developed in collaboration with the National Center for Women & Information Technology.

CS 492 **Senior Project I** credit: 3 hours.

First part of a project course in computer science. Students work in teams to solve typical commercial or industrial problems. Work involves planning, design, and implementation. Extensive oral and written work is required both on-campus and possibly off-campus at sponsors' locations. CS 492 must be taken as a sequence with either CS 493 or CS 494. 3 undergraduate hours. No graduate credit. Credit is not given for both CS 492 and a project course in another engineering department for the same project. Prerequisite: For Computer Science majors with senior standing.

CRN	Type	Section	Time	Days	Location	Instructor
30139	Lecture-Discussion	CS	04:00 PM - 04:50 PM	W	0218 - Siebel Center for Comp Sci	Woodley, M

Restricted to CS and blended CS majors students.
Restricted to Undergrad - Urbana-Champaign.

CS 497 **CS Team Project** credit: 1 TO 3 hours.

Student teams work with CS faculty to complete a significant project requiring advanced knowledge of CS principles. Project topics vary. 1 to 3 undergraduate hours. No graduate credit. May be repeated in the same term up to 6 hours, if topics vary; may be repeated in separate terms. Prerequisite: For majors only; junior or senior standing required.

CRN	Type	Section	Time	Days	Location	Instructor
72830	Independent Study		ARRANGED -		-	

Instructor Approval Required
Restricted to Computer Science major(s). Restricted to Undergrad - Urbana-Champaign.
Students must submit a team project form via My.CS. Each person involved in a team project must fill out a separate form. Each separate form must also include the names of all participating persons and their UIN's involved in the project. You will receive a CRN upon Instructor approval and departmental notification. The link is https://my.cs.illinois.edu/IndStudy

CS 498 **Special Topics** credit: 1 TO 4 hours.

Subject offerings of new and developing areas of knowledge in computer science intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. 1 to 4 undergraduate hours. 1 to 4 graduate hours. May be repeated in the same or separate terms if topics vary.

CRN	Type	Section	Time	Days	Location	Instructor
54283	Laboratory-Discussion	CSP	03:30 PM - 04:45 PM	F	-	Mitra, S
	Online	CSP	ARRANGED -		-	Mitra, S

Credit Hours: 3 hours
Principles of Safe Autonomy

This section is intended for Chicago City Scholars only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr., Chicago
Restricted to O/C Engineering City Scholars students.

61482	Lecture	GC3	03:30 PM - 04:45 PM	WF	0216 - Siebel Center for Comp Sci	Chowdhary, G

Credit Hours: 3 hours
Mobile Robotics for CS
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Principles of Mobile Robotics for Computer Scientists This course will introduce CS students to foundational principles of mobile robotics. Topics covered will be dynamic modeling, coordinate transformations, principles of operations of different sensors, sensor fusion algorithms including Kalman filters, introduction to Simultaneous Localization and Mapping, and introduction to feedback control for robotics. Prerequisite of CS 225 suggested. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

47171	Lecture	GCG	03:30 PM - 04:45 PM	WF	0216 - Siebel Center for Comp Sci	Chowdhary, G

Credit Hours: 4 hours
Mobile Robotics for CS
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Principles of Mobile Robotics for Computer Scientists This course will introduce CS students to foundational principles of mobile robotics. Topics covered will be dynamic modeling, coordinate transformations, principles of operations of different sensors, sensor fusion algorithms including Kalman filters, introduction to Simultaneous Localization and Mapping, and introduction to feedback control for robotics. Prerequisite of CS 225 suggested. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

40094	Lecture	GCU	03:30 PM - 04:45 PM	WF	0216 - Siebel Center for Comp Sci	Chowdhary, G

Credit Hours: 3 hours
Mobile Robotics for CS
Restricted to Undergrad - Urbana-Champaign.
Principles of Mobile Robotics for Computer Scientists This course will introduce CS students to foundational principles of mobile robotics. Topics covered will be dynamic modeling, coordinate transformations, principles of operations of different sensors, sensor fusion algorithms including Kalman filters, introduction to Simultaneous Localization and Mapping, and introduction to feedback control for robotics. Prerequisite of CS 225 suggested. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

65109	Lecture	LS3	11:00 AM - 12:15 PM	WF	1310 - Digital Computer Laboratory	Lai, F

Credit Hours: 3 hours
Machine Learning System
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.

70372	Lecture	LSG	11:00 AM - 12:15 PM	WF	1310 - Digital Computer Laboratory	Lai, F

Credit Hours: 4 hours
Machine Learning System
Restricted to Computer Science or Electrical & Computer Engr or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

70363	Lecture	LSU	11:00 AM - 12:15 PM	WF	1310 - Digital Computer Laboratory	Lai, F

Credit Hours: 3 hours
Machine Learning System
Restricted to Undergrad - Urbana-Champaign.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

54284	Laboratory-Discussion	MC4	03:30 PM - 04:45 PM	F	-	Mitra, S
	Online	MC4	ARRANGED -		-	Mitra, S

Credit Hours: 4 hours
Principles of Safe Autonomy
Restricted to MCS: Computer Sci OFF - UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations.
Weekly in-person meeting in Classroom A at 200 S. Wacker Dr., Chicago

49838	Lecture	RC1	02:00 PM - 03:15 PM	TR	114 - Transportation Building	Cunningham, R

Credit Hours: 4 hours
Law &Policy Issues in CS
Restricted to Undergrad - Urbana-Champaign.
Law and Policy Issues In Computer Science This course will explore the intersection of public policy and computing technology. After a basic overview of the US legal system and administrative state, the course will examine the ways computing technology is regulated in areas such as privacy, crime, intellectual property, commerce, and national security. Students in the course will complete a series of technical projects related to legal issues, including scrutinizing digital rights management technology, evaluating digital forensics reports and expert testimony, and critiquing software patents. Students will also be expected to regularly read and respond to excerpts from relevant legal cases. Topics covered in the course will include Fourth and Fifth Amendment protections in cyberspace, network neutrality, antitrust, Section 230, cryptocurrency and digital property, espionage, and cyberwarfare. Prerequisite: CS 225 For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

31535	Lecture	RCG	02:00 PM - 03:15 PM	TR	114 - Transportation Building	Cunningham, R

Credit Hours: 4 hours
Law &Policy Issues in CS
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister Law and Policy Issues In Computer Science This course will explore the intersection of public policy and computing technology. After a basic overview of the US legal system and administrative state, the course will examine the ways computing technology is regulated in areas such as privacy, crime, intellectual property, commerce, and national security. Students in the course will complete a series of technical projects related to legal issues, including scrutinizing digital rights management technology, evaluating digital forensics reports and expert testimony, and critiquing software patents. Students will also be expected to regularly read and respond to excerpts from relevant legal cases. Topics covered in the course will include Fourth and Fifth Amendment protections in cyberspace, network neutrality, antitrust, Section 230, cryptocurrency and digital property, espionage, and cyberwarfare. Prerequisite of CS 225.

Not intended for First Time Freshman students.

61940	Lecture	RCU	02:00 PM - 03:15 PM	TR	114 - Transportation Building	Cunningham, R

Credit Hours: 3 hours
Law &Policy Issues in CS
Restricted to Undergrad - Urbana-Champaign.
Law and Policy Issues In Computer Science This course will explore the intersection of public policy and computing technology. After a basic overview of the US legal system and administrative state, the course will examine the ways computing technology is regulated in areas such as privacy, crime, intellectual property, commerce, and national security. Students in the course will complete a series of technical projects related to legal issues, including scrutinizing digital rights management technology, evaluating digital forensics reports and expert testimony, and critiquing software patents. Students will also be expected to regularly read and respond to excerpts from relevant legal cases. Topics covered in the course will include Fourth and Fifth Amendment protections in cyberspace, network neutrality, antitrust, Section 230, cryptocurrency and digital property, espionage, and cyberwarfare. Prerequisite: CS 225 For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

43500	Lecture	RM3	09:30 AM - 10:45 AM	MW	2406 - Siebel Center for Comp Sci	

Credit Hours: 3 hours
Robot Manipulation
Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Robot manipulation refers to the ability of a robot to physically interact with objects in its environment using arms, hands, or other end-effectors. It is essential for applications in manufacturing, logistics, healthcare, service robotics, and even household assistance. This class covers the basic knowledge of robot manipulation, including robot modeling, kinematics, contact mechanics, perception, simulation, planning and control, and the use of learning technologies for manipulation. The class will cover both the theoretical and practical aspects of manipulation. It will consist of lectures, homework assignments, and simulation-based programming assignments. Programming will be performed using the Python language.
 For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

67901	Lecture	RMG	09:30 AM - 10:45 AM	MW	2406 - Siebel Center for Comp Sci	

Credit Hours: 4 hours
Robot Manipulation
Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC.
Robot manipulation refers to the ability of a robot to physically interact with objects in its environment using arms, hands, or other end-effectors. It is essential for applications in manufacturing, logistics, healthcare, service robotics, and even household assistance. This class covers the basic knowledge of robot manipulation, including robot modeling, kinematics, contact mechanics, perception, simulation, planning and control, and the use of learning technologies for manipulation. The class will cover both the theoretical and practical aspects of manipulation. It will consist of lectures, homework assignments, and simulation-based programming assignments. Programming will be performed using the Python language.

67900	Lecture	RMU	09:30 AM - 10:45 AM	MW	2406 - Siebel Center for Comp Sci	Yuan, W

Credit Hours: 3 hours
Robot Manipulation
Restricted to Undergrad - Urbana-Champaign.
Robot manipulation refers to the ability of a robot to physically interact with objects in its environment using arms, hands, or other end-effectors. It is essential for applications in manufacturing, logistics, healthcare, service robotics, and even household assistance. This class covers the basic knowledge of robot manipulation, including robot modeling, kinematics, contact mechanics, perception, simulation, planning and control, and the use of learning technologies for manipulation. The class will cover both the theoretical and practical aspects of manipulation. It will consist of lectures, homework assignments, and simulation-based programming

assignments. Programming will be performed using the Python language.
 For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 499 **Senior Thesis** credit: 3 hours.

Research and thesis development experience in computer science under guidance of a faculty member. Literature search, oral presentation, analysis and implementation, paper preparation, and completion of a written thesis. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
10465	Independent Study		ARRANGED -		-	

Advanced Composition course.
Instructor Approval Required
Restricted to Computer Science major(s). Restricted to students with Senior class standing. Restricted to Undergrad - Urbana-Champaign.
Students must submit a senior thesis form via My.CS. Each form must also include the name and UIN. You will receive a CRN upon Instructor approval and departmental notification. Requests should be done at the following site address: http://cs.illinois.edu/academics/undergraduate/undergraduate-forms for CS 499
Not intended for First Time Freshman students.

CRN	Type	Section	Time	Days	Location	Instructor
15632	Independent Study	DHT	ARRANGED -		-	Hakkani Tur, D

Advanced Composition course.
Instructor Approval Required

CS 507 **Topics in Cryptography** credit: 4 hours.

Modern cryptography helps realize a variety of tasks: from computations on and proofs about secret data, to verifiably offloading computation to untrusted clients, to making programs unintelligible while preserving functionality, to testing untrusted quantum devices. Covers a selection of such cutting-edge topics in cryptography. We will understand how any adversary that counters the security of modern protocols can be transformed into an adversary that contradicts basic mathematical assumptions. We will understand key ideas in recent cryptography research and identify new directions and problems for the future. May be repeated, up to 8 hours in a single term, to a total of 16 graduate hours, if topics vary. Credit is not given towards a degree from multiple offerings of this course if those offerings have significant overlap, as determined by the CS department. Prerequisite: Offerings in separate semesters may specify additional prerequisites each term, depending on the specific topic offered. See section information for additional details.

CRN	Type	Section	Time	Days	Location	Instructor
80556	Lecture-Discussion	SC	12:30 PM - 01:45 PM	WF	2200 - Sidney Lu Mech Engr Bldg	Heath, D

Secure Computation
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
We will discuss secure multiparty computation (MPC), a suprisingly powerful branch of cryptography that allows mutually untrusting parties to work together to securely run programs on private data. We will discuss both the theory and the practice of this emerging technology. Our discussion will cover computing on private data, zero-knowledge proofs, oblivious RAM, and more.
 It is strongly advised that students have completed a prerequisite of CS 407, or a course of equivalent content and rigor. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 508 **Manycore Parallel Algorithms** credit: 4 hours.

Same as ECE 508. See ECE 508.

CRN	Type	Section	Time	Days	Location	Instructor
75612	Lecture	E	10:00 AM - 11:20 AM	TR	2013 - Electrical & Computer Eng Bldg	Lumetta, S
Credit Hours: 4 hours Restricted to Graduate - Urbana-Champaign.						

CS 511 **Advanced Data Management** credit: 4 hours.

Advanced concepts in data management and information system design and implementation, and recent developments in the field. 1) Relational roots, objects and extensibility, query languages, data indexing, query processing, transaction processing, benchmarks, and 2) semi-structured data and unstructured data, information extraction, information integration, web search and mining, and other emerging directions in the field. Prerequisite: CS 411.

CRN	Type	Section	Time	Days	Location	Instructor
50497	Lecture-Discussion	DM	02:00 PM - 03:15 PM	TR	1310 - Digital Computer Laboratory	Park, Y
Not intended for First Time Freshman students. Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. Academic Outreach restrictions and assessments apply, see http://www.outreach.uiuc.edu; please see http://online.engr.uiuc.edu/descriptions/fall2008.htm for more details on this course section. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 512 **Data Mining Principles** credit: 4 hours.

An advanced course on principles and algorithms of data mining. Data cleaning and integration; descriptive and predictive mining; mining frequent, sequential, and structured patterns; clustering, outlier analysis and fraud detection; stream data, web, text, and biomedical data mining; security and privacy in data mining; research frontiers. Prerequisite: CS 412.

CRN	Type	Section	Time	Days	Location	Instructor
77189	Lecture-Discussion	DMP	02:00 PM - 03:15 PM	WF	1310 - Digital Computer Laboratory	You, J
Not intended for First Time Freshman students. Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 521 **Advanced Topics in Programming Systems** credit: 4 hours.

Advanced topics in building and verifying software systems, selected from areas of current research such as: model checking and automated verification, testing and automated test generation, program synthesis, runtime verification, machine learning and its applications in the design of verified systems, formal analysis of machine learning algorithms, principles of programming languages and type systems. May be repeated if topics vary. Credit is not given towards a degree from multiple offerings of this course if those offerings have significant overlap, as determined by the CS department. Prerequisite: CS 374 or ECE 374; CS 421. Additional prerequisites or corequisites may be specified each term. See section information.

CRN	Type	Section	Time	Days	Location	Instructor

77187	Lecture-Discussion	FML	09:30 AM - 10:45 AM	TR	2233 - Everitt Laboratory	Singh, G

FM and ML in Pgm Systems
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Not intended for MCS: Computer Sci OFF - UIUC.
Emerging ML models (like deep neural networks) tend to be complex, fragile, non-robust, and uninterpretable. This makes it extremely challenging to build reliable real-world systems that incorporate ML components. We need trustworthy ML as well as robust system design to achieve end-to-end correctness of systems. In this course, we will study recent developments at the intersection of formal methods (FM), programming languages (PL) and machine learning (ML) research towards the development of trustworthy AI-based systems. Some topics planned covered for the course are: 1. Formal Verification of ML models using abstraction and constraint solvers 2. Symbolic explanations of deep neural networks 3. Training ML models with Logic and Knowledge 4. Learning symbolic concepts (code, program synthesis, invariants) 5. Proving correctness of systems with ML components 6. Neurosymbolic machine learning For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

79800	Lecture-Discussion	LCC	12:30 PM - 01:45 PM	R	ARR - Illini Center	Mendis, C Misailovic, S
	Online Lecture	LCC	12:30 PM - 01:45 PM	T	-	Mendis, C Misailovic, S

Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Restricted to MCS: Computer Sci OFF - UIUC.
Title: Machine Learning and Compilers. Description: This course covers fundamentals in compilation techniques used in the domain of machine learning. The topics can include tensor programming languages, frameworks, compilers, tensor intermediate representations, code generation for specialized accelerators such as GPUs, dataflow accelerators, tensor program optimizations, automatic differentiation, approximate compilation techniques for neural networks and compilers for probabilistic ML models. Instruction will be lecture based. Grading will be based on projects and quizzes. Weekly in-person meeting in 200 S. Wacker Dr. Restricted to MCS Chicago Students. There may be in class meetings, exams, and in class activities.

79799	Lecture-Discussion	LCU	12:30 PM - 01:45 PM	TR	0220 - Siebel Center for Comp Sci	Mendis, C Misailovic, S

Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Title: Machine Learning and Compilers. Description: This course covers fundamentals in compilation techniques used in the domain of machine learning. The topics can include tensor programming languages, frameworks, compilers, tensor intermediate representations, code generation for specialized accelerators such as GPUs, dataflow accelerators, tensor program optimizations, automatic differentiation, approximate compilation techniques for neural networks and compilers for probabilistic ML models. Instruction will be lecture based. Grading will be based on projects and quizzes. Please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister.

CS 527 **Topics in Software Engineering** credit: 4 hours.

Fault-tolerant software, software architecture, software patterns, multi-media software, and knowledge-based approaches to software engineering. Case studies. Prerequisite: CS 428, CSE 429 or CS 429.

CRN	Type	Section	Time	Days	Location	Instructor
35912	Lecture-Discussion	S	03:30 PM - 04:45 PM	TR	0216 - Siebel Center for Comp Sci	Marinov, D

Credit Hours: 4 hours
Not intended for First Time Freshman students.

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Software Testing and Analysis. The Fall 2025 topics will be on dynamic and static program analysis for finding software bugs, with an emphasis on systematic software testing, especially regression testing. A study from Cambridge estimates that the global cost of bugs is $312 billion annually. We will discuss a number of techniques and tools that could reduce this cost. The focus will be on analysis of code, but we may also cover analysis of other types of software artifacts and their use in testing. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister CS Course Restrictions & Enrollment Caps | Siebel School of Computing and Data Science | Illinois CS Course Restrictions & Enrollment Caps

CS 537 **Advanced Topics in Internet of Things (IoT)** credit: 4 hours.

Advanced topics in Internet of Things (IoT) algorithms, protocols, architectures, systems, and infrastructures, selected from areas of current research such as: IoT sensors representations and compression, streaming and caching of IoT data, IoT analytics and feature learning, IoT-edge-cloud computing infrastructures, resource optimization for multi-modal IoT systems, applications and human perception of IoT. Students will read and discuss recent research papers and conduct a semester-long research project. May be repeated, if topics vary. Credit towards a degree from multiple offerings of this course is not given if those offerings have significant overlap, as determined by the CS department. Prerequisite: One of CS 425 or ECE 428; one of CS 438 or ECE 438. Additional prerequisites may be specified each term. See section information.

CRN	Type	Section	Time	Days	Location	Instructor
75892	Lecture-Discussion	K	09:30 AM - 10:45 AM	TR	1302 - Siebel Center for Comp Sci	Nahrstedt, K

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Internet of Things (I0T) encompasses many different sensing, computing, and networking capabilities to build complex distributed multi-modal IoT systems. In this section of the Advanced IoT Systems, we will explore the IoT systems in distributed immersive environments as we see more and more advanced IoT devices such as 2D, 360, 3D cameras, spatial audio and microphone arrays, accelerometers, and other sensors becoming part of head-mounted displays, tele-conference environments, remote surveillance services and other immersive applications. We will take a system-centric approach where we will discuss through lectures and student presentations of international top conference publications the end-to-end system path of 1D and 2D IOT data, including the IoT data representation, their compression algorithms, network streaming protocols over different wired and wireless networks, machine-learning-based IoT data analytics to extract important features for advanced resource management optimizations, and we will end with discussions of important concepts and metrics to be considered when viewing content by people in immersive environments such as the multi-modal synchronization and Quality of Experience. Prerequisite: cs425, cs438, cs437 or agreement of instructor (strong system/network background) For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 538 **Advanced Computer Networks** credit: 4 hours.

Advanced concepts in computer networks, including congestion control, quality of service, naming, routing, wireless networks, Internet architecture, measurement, network security, and selected recent research directions. Prerequisite: CS 438 or ECE 438.

CRN	Type	Section	Time	Days	Location	Instructor
58321	Lecture-Discussion	N	02:00 PM - 03:15 PM	TR	3101 - Sidney Lu Mech Engr Bldg	Yan, F

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.

CS 540 **Deep Learning Theory** credit: 4 hours.

A rigorous mathematical course covering foundational analyses of the approximation, optimization, and generalization properties of Deep Neural Networks. Topics include: constructive and non-constructive approximations with one hidden layer; benefits of depth; optimization in the NTK regime; maximum margin optimization outside the NTK regime; Rademacher complexity, VC dimensino, and covering number bounds for ReLU networks. Evaluation is primarily based on homeworks, with a smaller project component. The course goal is to prepare students perform their own research in the field. Prerequisite: Basic linear algebra, probability, proof-writing, and statistics required. Real analysis recommended.

CRN	Type	Section	Time	Days	Location	Instructor
75414	Lecture-Discussion	DLT	11:00 AM - 12:15 PM	MW	0216 - Siebel Center for Comp Sci	Zhang, T
Credit Hours: 4 hours Not intended for First Time Freshman students. Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. http://mjt.cs.illinois.edu/courses/dlt-f22/ For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister						

CS 542 **Statistical Reinforcement Learning** credit: 4 hours.

Theory of reinforcement learning, with a focus on sample complexity analyses. Specific topics include MDP basics, finite-sample analyses of online (i.e., exploration) and offline (i.e., batch) RL with a tabular representation, finite-sample analyses of online and offline RL with function approximation, state abstraction theory, off-policy evaluation (importance sampling), and policy gradient. The course goal is to provide a comprehensive understanding of the statistical properties of RL under various settings (e.g., online vs offline), preparing the students for doing research in the area. Prerequisite: Calculus, linear algebra, probability and statistics, and basic concepts of machine learning. Familiarity with (at least one of) the following topics is highly recommended: stochastic processes, numerical analysis, and theoretical computer science.

CRN	Type	Section	Time	Days	Location	Instructor
74766	Lecture-Discussion	S	02:00 PM - 03:15 PM	WF	0216 - Siebel Center for Comp Sci	Jiang, N
Credit Hours: 4 hours Not intended for First Time Freshman students. Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister http://nanjiang.cs.illinois.edu/cs542/						

CS 543 **Computer Vision** credit: 4 hours.

Same as ECE 549. See ECE 549.

CRN	Type	Section	Time	Days	Location	Instructor
37132	Lecture-Discussion	A	11:00 AM - 12:15 PM	WF	1404 - Siebel Center for Comp Sci	Forsyth, D
Not intended for First Time Freshman students. Restricted to Graduate - Urbana-Champaign.						
76188	Online Lecture	ONL	11:00 AM - 12:15 PM	WF	-	Forsyth, D

Not intended for First Time Freshman students.
Restricted to Graduate - Urbana-Champaign.
Restricted to MENG:Elec & Comp Eng ONL -UIUC.
http://slazebni.cs.illinois.edu/fall22. This is an overflow section.

CS 545 **Machine Learning for Signal Processing** credit: 4 hours.

Fundamentals of machine learning and signal processing as they pertain to the development of machines that can understand complex real-world signals, such as speech, images, movies, music, biological and mechanical readings, etc. Hands-on examples of how to decompose, analyze, classify, detect and consolidate signals, and examine various commonplace operations such as finding faces from camera feeds, organizing personal music collections, designing speech dialog systems and understanding movie content. Prerequisite: MATH 415; one of CS 361, STAT 361, MATH 461, MATH 463 or STAT 400.

CRN	Type	Section	Time	Days	Location	Instructor
75562	Lecture	MLS	12:30 PM - 01:45 PM	TR	1404 - Siebel Center for Comp Sci	Kim, M

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 546 **Advanced Topics in Natural Language Processing** credit: 4 hours.

Advanced topics in natural language processing, ranging from general techniques such as deep learning for NLP to specific topics such as information extraction, knowledge acquisition, dialogue systems, language grounding, and natural language generation. Review of classic as well as state-of-the-art techniques and remaining challenges, and exploration of recent proposals for meeting these challenges. Intended for graduate students doing research in natural language processing. May be repeated in separate terms up to 16 hours, if topics vary. Credit towards a degree from multiple offerings of this course is not given if those offerings have significant overlap, as determined by the CS department. Prerequisite: CS 447 and one of CS 446 or ECE 449, or equivalent background.

CRN	Type	Section	Time	Days	Location	Instructor
74740	Lecture-Discussion	ATN	09:30 AM - 10:45 AM	TR	1404 - Siebel Center for Comp Sci	Hakkani Tur, D

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
In this course we will teach advanced topics in natural language processing, ranging from general techniques such as deep learning for NLP to specific topics such as information extraction, question answering, reading comprehension, summarization, dialogue systems, and natural language generation. Review of classic as well as state-of-the-art techniques and remaining challenges, and exploration of recent proposals for meeting these challenges. Intended for graduate students doing research in natural language processing. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Prerequisite: CS 447 and CS 446 or equivalent background.

CS 549 **Seminar in Cognitive Science** credit: 2 OR 4 hours.

Same as PSYC 514, ANTH 514, EPSY 551, LING 570, and PHIL 514. See PSYC 514.

CRN	Type	Section	Time	Days	Location	Instructor

48226	Lecture-Discussion	A	03:30 PM - 04:50 PM	TR	23 - Psychology Building	Hummel, J

Restricted to Graduate - Urbana-Champaign.
This course presents an in-depth, integrative overview of the major themes in the study of Cognitive Science, including cognition as computation, the relation between mind and brain, computability and the role of heuristics in “solving” unsolvable problems, and the logical/mathematical foundations of these themes. Specific topics include inverse optics and vision; induction and reasoning; learnability and language; philosophy of minds and brains; evolution; artificial intelligence and computational modeling; information theory; knowledge representation. The emphasis throughout is on the interrelations among these topics as examples of important but fundamentally unsolvable problems. This course is the same as PSYCH 514, Seminar in Cognitive Science, and replaces PSYCH 458, Cognitive Science.

CS 562 **Advanced Topics in Security, Privacy, and Machine Learning** credit: 4 hours.

Advanced topics in security and privacy problems in machine learning systems, selected from areas of current research such as: adversarial machine learning, differential privacy, game theory enabled defenses, robust learning methods, machine learning based cybercrime analysis, network intrusion detection, and malware analysis, and machine learning interpretation techniques. May be repeated if topics vary. Credit is not given towards a degree from multiple offerings of this course if those offerings have significant overlap, as determined by the CS department. Prerequisite: One of CS 446 or ECE 449 and one of CS 463 or ECE 424, or equivalent courses, by consent of instructor. Additional prerequisites or corequisites may be specified each term. See section information.

CRN	Type	Section	Time	Days	Location	Instructor
75418	Lecture-Discussion	SML	12:30 PM - 01:45 PM	WF	119 - Materials Science & Eng Bld	Liao, X

Credit Hours: 4 hours
Adv Top in Sec, Priv and ML
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
This section will primarily focus on (1) using machine learning (ML), especially Generative AI, for applications in system and network security and privacy; and (2) understanding the security and privacy challenges posed by ML-integrated systems. Example topics include using ML to build novel security defenses (e.g., detecting system vulnerability, network intrusions, and cybercrime), as well as ensuring the robustness and resilience of ML-integrated systems (e.g., protecting data privacy and securing ML-based infrastructures). Students will read, present, replicate, and discuss cutting-edge research outcomes, and work on an original research project on the relevant topics.
 Prerequisites: One of CS 446 or ECE 449 and one of CS 463 or ECE 424, or equivalent courses, by consent of instructor.
 For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 567 **Social Signals and Social Media** credit: 4 hours.

Online social interactions occur in many arenas important to society and human well-being, but are mediated through algorithmic interventions that alter the users expectations in these social spaces. This class explores the presentation of self, the presentation of collectives, the presentation of news, and social dynamics in these online spaces--and how algorithmic intervention shapes them from the perspective of social signaling theory. Topics covered include: the evolution of algorithmic matchmaking (as in online resume/interviews and dating sites), why people share misinformation, the mitigation of trolling, ethics, and bias in social media systems. Upon completion of this course, students will have an up-to-date understanding of the design social media interfaces with incentive structures from social signaling theory. Prerequisite: CS 465 or equivalent or permission of instructor. Prioritize PhD students, then others.

CRN	Type	Section	Time	Days	Location	Instructor
75897	Lecture-Discussion	K	09:30 AM - 10:45 AM	MW	1302 - Siebel Center for Comp Sci	Karahalios, K

Credit Hours: 4 hours
Not intended for First Time Freshman students.

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 571 **Combinatorial Mathematics** credit: 4 hours.

Same as MATH 580. See MATH 580.

CRN	Type	Section	Time	Days	Location	Instructor
33563	Lecture-Discussion	D1	12:00 PM - 12:50 PM	MWF	3018 - Campus Instructional Facility	Methuku, A

Restricted to Graduate - Urbana-Champaign. Not intended for MS:Economics:Policy Econ -UIUC, MS: Financial Engineering, MENG:Mechanical Enginerng-UIUC, MENG:Elec & Computer Eng-UIUC, or MENG:Engineering:Comp Eng-UIUC.
Undergraduate students may register with approval. For more information go to room 313 AH. Students from the following programs must contact the Director of Graduate Studies in Mathematics to request permission to register for the course: Restricted to Graduate - Urbana-Champaign. Not intended for MS:Economics:Policy Econ -UIUC, MS:Economics:Policy Econ -UIUC, MS: Financial Engineering, MENG:Mechanical Enginerng-UIUC, MENG:Elec & Computer Eng-UIUC, or MENG:Engineering:Comp Eng-UIUC

CS 574 **Randomized Algorithms** credit: 4 hours.

Basic and advanced concepts in the design and analysis of randomized algorithms. Sampling; concentration inequalities such as Chernoff-Hoeffding bounds; probabilistic method; random walks, dimension reduction; entropy; martingales and Azuma's inequality; derandomization. Randomized algorithms for sorting and searching; graphs; geometric problems. Basics of pseudorandomness and randomized complexity classes. Prerequisite: One of CS 473, CSE 414, or MATH 473; one of MATH 461, MATH 463 or STAT 400.

CRN	Type	Section	Time	Days	Location	Instructor
65259	Lecture-Discussion	R	09:30 AM - 10:45 AM	WF	0216 - Siebel Center for Comp Sci	Chekuri, C

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.

CS 576 **Topics in Automated Deduction** credit: 2 TO 4 hours.

Advanced topics in computer-aided methods for formal deduction, selected from areas of current research, such as: resolution theorem proving strategies, special relations, equational reasoning, unification theory, rewrite systems, mathematical induction, program derivation, hybrid inference systems, and programming with logic. May be repeated in separate terms. Prerequisite: As specified for each topic offering, see Schedule or departmental course description.

CRN	Type	Section	Time	Days	Location	Instructor
71847	Lecture-Discussion	M	11:00 AM - 12:15 PM	TR	0220 - Siebel Center for Comp Sci	Ringer, T

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.

For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 579 **Computational Complexity** credit: 4 hours.

Turing machines; determinism and non-determinism; time and space hierarchy theorems; speed-up and tape compression; Blum axioms; structure of complexity classes NP, P, NL, L, and PSPACE; complete problems; randomness and complexity classes RP, RL, and BPP; alternation, polynomial-time hierarchy; circuit complexity, parallel complexity, NC, and RNC; relativized computational complexity; time-space trade-offs. Same as ECE 579. Prerequisite: One of CS 473, CSE 414, MATH 473, CS 475 or MATH 475.

CRN	Type	Section	Time	Days	Location	Instructor
51780	Lecture-Discussion	F	03:30 PM - 04:45 PM	TR	1302 - Siebel Center for Comp Sci	Granha Jeronimo, F

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 580 **Topics in Algorithmic Game Theory** credit: 4 hours.

A theoretical CS course covering advances in algorithmic game theory. This includes study of strategic, computational, learning, dynamic, and fairness aspects of games and markets (organizations that involves rational and strategic agents). In particular, topics will include computation and complexity of equilibria, mechanism design, fair-division, dynamics in games and markets, price-of-anarchy etc.. These topics arise from applications such as online marketplaces (like Lyft, Uber, eBay, sponsored search, TaskRabbit), social networks, recommendation systems, kidney exchange, spectrum auction, etc., and thereby will prepare students for related research and/or industry jobs. Prerequisite: CS 473.

CRN	Type	Section	Time	Days	Location	Instructor
75420	Lecture	AGT	09:30 AM - 10:45 AM	TR	1214 - Siebel Center for Comp Sci	Mehta, R

Credit Hours: 4 hours
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 582 **Machine Learning for Bioinformatics** credit: 4 hours.

This graduate course on bioinformatics introduces a selection of topics in computational biology and bioinformatics, with special emphasis on current problems in regulatory genomics and systems biology. Computational approaches discussed will focus on Machine Learning techniques such as Bayesian inference, graphical models, supervised learning and network analysis. Bioinformatics topics will be introduced through lectures by instructor and research paper presentations by students, and include regulatory sequence analysis, cistromics, epigenomics, regulatory network reconstruction, non-coding variant interpretation, and protein structure and function prediction. A research project involving real data analysis with techniques related to course content is mandatory and will help prepare students for bioinformatics research. Prerequisite: CS 446 or ECE 449; Credit or concurrent enrollment in CS 466; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
75421	Lecture-Discussion	B	11:00 AM - 12:15 PM	WF	1302 - Siebel Center for Comp Sci	Liu, G

Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

CS 584 **Embedded System Verification** credit: 4 hours.

Same as ECE 584. See ECE 584.

CRN	Type	Section	Time	Days	Location	Instructor
60031	Lecture	B	12:30 PM - 01:50 PM	TR	3013 - Electrical & Computer Eng Bldg	Mitra, S
Restricted to Graduate - Urbana-Champaign.						

CS 591 **Advanced Seminar** credit: 0 TO 4 hours.

Seminar on topics of current interest as announced in the Class Schedule. Approved for S/U grading only. May be repeated in the same or separate terms if topics vary. Prerequisite: As specified for each topic offering, see Class Schedule or departmental course description.

CRN	Type	Section	Time	Days	Location	Instructor
35941	Lecture-Discussion	ACT	04:30 PM - 05:30 PM	M	ARR - Siebel Center for Comp Sci	Adve, V
Credit Hours: 1 hours Advanced Compiler Technology Not intended for First Time Freshman students. Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Topic: Advanced Compiler Technology. Prerequisite: CS 426.						
35969	Lecture-Discussion	BAI	03:30 PM - 04:20 PM	F	1304 - Siebel Center for Comp Sci	Gillette, R Zhai, C
Credit Hours: 1 hours Biologically Plausible AI Not intended for First Time Freshman students. Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Topic: From Biological to Artificial Intelligence Recent breakthroughs in Artificial Intelligence (AI) technologies, notably deep neural networks and reinforcement learning, were largely inspired by our understanding of biological intelligence and how human brain works. At the same time, effective AI models such as large language models may also provide insights useful for understanding biological intelligence. This course will explore a broad range of topics in AI, as well as biological principles of intelligence and their implementation in AI. We will review current state-of-the-art AI models, with particular focus on biological plausibility. Course topics may include but are not limited to: biological and artificial memory systems, generative AI models, reinforcement learning algorithms, and evolution of nervous systems and behavioral complexity. There will be weekly discussions and student presentations of recent papers, aiming to explore the potential advantages, complexities, and short-comings of the AI models presented, and how they relate back to biological, psychological, and evolutionary principles.						
35945	Lecture-Discussion	CAP	04:00 PM - 05:00 PM	T	1214 - Siebel Center for Comp Sci	Ghose, S
Credit Hours: 1 hours Arch./Compilers/Parallel Comp. Not intended for First Time Freshman students.						

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Recent research on architecture, compilers, and parallel computing. Consists of a combination of internal presentations, external speakers, and paper readings. Info about the seminar will be posted on https://go.cs.illinois.edu/CAPSeminar

35958	Lecture-Discussion	CS	03:30 PM - 04:45 PM	MW	ARR - Siebel Center for Comp Sci	Amato, N Rauchwerger, L

Credit Hours: 1 hours
CS Colloquium
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Graduate seminar covering current research topics in computing and related fields. Seminars will generally be held on Mondays and/or Wednesdays. Students should check the department calendar at https://cs.illinois.edu/calenda or the Inside CS Weekly Digest that comes out each Sunday for current listing of talks.

35980	Lecture-Discussion	DEI	ARRANGED -		-	Lewis, C Wright, A

Credit Hours: 1 hours
Div. Equity. Incl. Serv. Sem.
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Graduate credit for significant leadership or work on Diversity, Equity, and Inclusion projects in the Grainger College of Engineering, especially as part of a Registered Student Organization, college or department recruiting and/or retention effort, or similar. Limited to 1 credit hour per semester. Open to all graduate students in Grainger College of Engineering. Successful completion requires the submission of an approved proposal and a report of activities undertaken and outcomes achieved, including all figures and references, at the end of the semester.

46417	Lecture-Discussion	FMG	02:00 PM - 03:30 PM	F	0222 - Siebel Center for Comp Sci	Parthasarathy, M

Credit Hours: 1 hours
Formal Methods Seminar
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Topic: Formal Methods.

41194	Lecture-Discussion	IC	03:30 PM - 05:00 PM	W	0220 - Siebel Center for Comp Sci	Cobb, C Karahalios, K Sterman, S

Credit Hours: 1 hours
Interactive Computing
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Topic: Seminar in Interactive Computing. Human-Computer Interaction and related topics. No prerequisites.

43828	Lecture-Discussion	IG	05:00 PM - 05:50 PM	R	1304 - Siebel Center for Comp Sci	Gupta, I

Credit Hours: 1 hours
Distributed Systems Seminar
Not intended for First Time Freshman students.
Instructor Approval Required
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Topic: Advanced Seminar in Distributed Systems. Prerequisite: CS 598 IG or CS 425 or any basic course on distributed systems.

58740	Lecture-Discussion	LRS	12:30 PM - 01:45 PM	TR	143 - Loomis Laboratory	Sha, L

Credit Hours: 3 hours
Improving Your Research Skills
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Improve your research skills investigates five important research topics 1) Building a Synergistic Team, 2) Picking the Right Area for Yourself, 3) Research Methods, 4) Writing Papers, and 5) Presentation Method. For example, here is the lecture on writing papers and a team's own presentation on writing papers. To learn more about R&D skills development, please visit my class website. Class Website: https://wiki.illinois.edu/wiki/pages/viewpage.action?spaceKey=cs598lrs&title=Home

35942	Lecture-Discussion	MCS	03:30 PM - 04:45 PM	MW	-	Amato, N Rauchwerger, L

Credit Hours: 1 hours
CS Colloquium - Chicago
Not intended for First Time Freshman students.
Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.
Graduate seminar covering current research topics in computing and related fields. Seminars will generally be held on Mondays and/or Wednesdays. Students should check the department calendar at https://cs.illinois.edu/calenda or the Inside CS Weekly Digest that comes out each Sunday for current listing of talks. Class meetings will be held at 200 S. Wacker Dr, Chicago.

35957	Lecture-Discussion	MH	ARRANGED -		ARR - Siebel Center for Comp Sci	Kloeckner, A Olson, L

Credit Hours: 1 hours
Scientific Computing Seminar
Not intended for First Time Freshman students.
Instructor Approval Required
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Topic: Scientific and Parallel Computing.

48709	Lecture-Discussion	MLR	02:00 PM - 03:30 PM	F	-	Banerjee, A Zhao, H

Credit Hours: 1 hours
Machine Learning Reading Grp
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
This is a weekly reading group on recent advances in machine learning. Each meeting will cover a (set of) paper(s) on a theme, typically led by a speaker. Enrolled participants are expected to come prepared for the meeting and actively engage and participate in the meeting. For details of where the seminar will meet and other information related to the course delivery, please see https://publish.illinois.edu/ml-seminar/

41977	Lecture	PHD	11:00 AM - 11:50 AM	M	1404 - Siebel Center for Comp Sci	Amato, N Lazebnik, S

Credit Hours: 1 hours
PHD Orientation Seminar
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to PHD:Computer Science -UIUC.
Orientation for new PhD students.

35961	Lecture-Discussion	SCH	11:00 AM - 12:15 PM	F	1214 - Siebel Center for Comp Sci	Lazebnik, S

Credit Hours: 1 hours
PhD Job Search Prep
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to PHD:Computer Science -UIUC.
This seminar is recommended for senior PhD students starting their job search within the next 12-18 months.

49716	Lecture-Discussion	SE	ARRANGED -		ARR - Siebel Center for Comp Sci	Jabbarvand Behrouz, R Misailovic, S Zhang, L

Credit Hours: 1 hours
Software Engineering Seminar
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Topic: Software Engineering Research Seminar. This seminar is about software engineering research, not focusing on practice. Most meetings discuss recent or seminal research papers. If interested in the seminar, please sign up to the soft-eng mailing list from http://wiki.cites.illinois.edu/wiki/display/SoftEng

46060	Lecture-Discussion	SN	04:00 PM - 04:50 PM	F	1214 - Siebel Center for Comp Sci	Alagappan, R Ganesan, A Gupta, I Xu, T

Credit Hours: 1 hours
Systems and Networking Seminar
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
UIUC SysNet seminar is a weekly meetup for anyone interested in systems and networking research at University of Illinois at Urbana-Champaign. We discuss recent significant work (e.g., published at top-tier conferences), critique each other's projects, and identify new research directions/ideas.

41195	Lecture-Discussion	SP	11:00 AM - 12:00 PM	R	1214 - Siebel Center for Comp Sci	Bates, A Zhang, Y

Credit Hours: 1 hours
Security and Privacy
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Weekly seminars on security and privacy, consisting of talks from internal and external speakers, paper reading, and research discussions.

35986	Lecture-Discussion	TA	11:00 AM - 11:50 AM	F	1002 - Electrical & Computer Eng Bldg	Beckman, M Chen, Y Johnson, B

Credit Hours: 1 hours
Teaching Assistant Training
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign.
Topic: TA Seminar; Teaching Assistant Training.

35951	Online Lecture	TAO	ARRANGED -		-	Beckman, M

Credit Hours: 1 hours

Teaching Assistant Training
Not intended for First Time Freshman students.
Restricted to Computer Science or Bioinformatics major(s). Restricted to MCS:Computer Sci Online -UIUC or MCS: Computer Sci Online-UIUC.
Topic: Computational Topology.

CS 597 **Individual Study** credit: 2 TO 16 hours.

Individual study or reading in a subject not covered in normal course offerings. May be repeated. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
76765	Independent Study		ARRANGED -		-	

Departmental Approval Required
Restricted to Graduate - Urbana-Champaign.

CS 598 **Special Topics** credit: 2 TO 4 hours.

Subject offerings of new and developing areas of knowledge in computer science intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

CRN	Type	Section	Time	Days	Location	Instructor
46989	Lecture-Discussion	AIE	12:30 PM - 01:45 PM	WF	1302 - Siebel Center for Comp Sci	

Credit Hours: 4 hours
AI Efficiency: Sys. & Algor.
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Topic: AI Efficiency: Systems & Algorithms Are you curious about how system techniques enable today's large-scale model training and deliver ultra-fast inference? Do you have a passion for making AI accessible to all by using advanced system and algorithm techniques, thereby significantly reducing the cost of training and deploying deep learning models? If so, this course is for you. The course provides an in-depth view of AI efficiency, focusing on the core concepts of both AI systems and algorithmic methods. We will explore and discuss seminal works in the field of AI systems, such as ZeRO-style data parallelism, tensor parallelism, pipeline parallelism, sequence parallelism, and 3D parallelism. We will also go over inference optimization techniques, such as FlashAttention, blocked KV cache, speculative decoding, and various compression algorithms. Students will have the opportunity to present existing works in the field of AI efficiency and learn to write paper reviews, which help develop critical thinking skills. Students will also work on group projects, which involve the design, hands-on implementation, and evaluation of AI systems or algorithms. The group project will provide students with valuable experience in working with real AI systems, and a deeper understanding of the complexities involved in optimizing AI efficiency. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

69375	Online	AO2	ARRANGED -		-	Willis, C

Credit Hours: 4 hours
Foundations of Data Curation
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.
Not intended for First Time Freshman students.

49221	Online	CC1	ARRANGED -		-	Farivar, R

Credit Hours: 4 hours
Cloud Computing Capstone
Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.

67236	Online	CC3	ARRANGED -		-	Farivar, R

Credit Hours: 4 hours
Cloud Computing Capstone
Restricted to MCS: Computer Sci OFF - UIUC.
This course will be taught on the Coursera platform. This section may have one or more proctored online exams. Students in on-campus programs will have no additional proctoring fees. Students in online programs may incur additional proctoring fees. Students taking a credit-bearing Illinois course on the Coursera platform for the first-time must complete a short onboarding course to gain course access. Additional information is available at https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=3552. There will be no late adds or section changes after 10th day. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.

62086	Lecture-Discussion	CER	11:00 AM - 12:15 PM	TR	1302 - Siebel Center for Comp Sci	Cunningham, K

Credit Hours: 4 hours
Found. for Comp. Edu. Research
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Introduction to computing education research, including: relevant cognitive, social, and cultural theories; assessment and evaluation of computing learning and attitudes; major research findings and pedagogical approaches; and current state of the field. Not for Online MCS students. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

62836	Lecture-Discussion	CVH	03:30 PM - 04:45 PM	WF	1310 - Digital Computer Laboratory	Rehg, J

Credit Hours: 4 hours
Computer Vision for Health
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Title: Computer Vision for Health For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister

49197	Lecture-Discussion	CWB	02:00 PM - 03:15 PM	TR	1035 - Campus Instructional Facility	Saha, K

Credit Hours: 4 hours
Computing and Wellbeing
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Title: Computing and Wellbeing For up-to-date information about CS course restrictions, please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister.

52546	Lecture-Discussion	DAG	09:30 AM - 10:45 AM	TR	2406 - Siebel Center for Comp Sci	Reid, J

Credit Hours: 4 hours
Digital Agriculture

Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Title: Digital Agriculture
 This course explores the digital transformation of agricultural production systems through the integration of automation, AI, sensing, connectivity, and electrification. With rising global challenges related to labor, sustainability, and food security, agriculture is rapidly becoming one of the most complex and impactful domains for cyber-physical systems research and deployment. The course focuses on the engineering foundations of modern farm operations—including field robotics, machine perception, farm management information systems, and digital twins—while emphasizing system integration, safety, and usability in real-world agricultural environments.
 Students will read and critique state-of-the-art research papers spanning autonomous machinery, edge/cloud computing for farms, computer vision for crops and livestock, and scalable decision support systems. A semester-long team project will allow students to conceptualize, prototype, and present a solution to a real-world digital agriculture challenge. The course features guest lectures from practicing engineers and stakeholders in the ag tech industry to bring practical perspectives into the classroom.
 Prerequisites: Graduate-level in CS or an engineering discipline
 For up-to-date information about CS course restrictions, please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

66319	Online	DCC	ARRANGED -		-	Willis, C

Credit Hours: 4 hours
Found of Data Curation
Restricted to Graduate - Urbana-Champaign. Restricted to MCS:Computer Sci Online -UIUC.
This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations. Weekly in-person meeting in Classroom A at 200 S. Wacker Dr. Chicago. For up-to-date information about CS course restrictions, please see the following link: http:// go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

45708	Online	DLH	ARRANGED -		-	Sun, J

Credit Hours: 4 hours
Deep Learning for Healthcare
Restricted to Graduate - Urbana-Champaign. Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.

64615	Lecture-Discussion	EKS	03:30 PM - 04:45 PM	TR	2406 - Siebel Center for Comp Sci	Soltanaghai, E

Credit Hours: 4 hours
Smart cities, homes, & beyond
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
This course explores the principles and practice of smart physical places and things. New devices have been added to cities, homes, factories, cars, and even to humans (inside and out), hoping that this influx of technology will help us solve pressing societal issues in all facets of life such as energy, personal health, environment, or safety. The challenges, however, remain in designing and scaling the hardware platforms, networking protocols, and machine perception algorithms to enable this new class of computing. This course will cover state-of-the-art research papers that address various visions of the future platforms supporting smart and connected systems. It will also stress the cyber physical aspects of these systems, providing safe, secure, and efficient interaction with the physical world. This course will offer significant hands-on experience through a semester-long project and paper critiques (course website: https://elahe.web.illinois.edu/598EKS.html For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/CSregister
Not intended for First Time Freshman students.

50499	Lecture-Discussion	ESS	02:00 PM - 03:15 PM	WF	1302 - Siebel Center for Comp Sci	Moses, W

Credit Hours: 4 hours
Apps for Extreme Scale Systems
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.

Title: Designing and Building Applications for Extreme Scale Systems. Learn how to design and implement applications for extreme scale systems, including analyzing and understanding the performance of applications, the primary causes of poor performance and scalability, and how both the choice of algorithm and programming system impact achievable performance. The course covers multi- and many-core processors, interconnects in HPC systems, parallel I/O, and the impact of faults on program and algorithm design.
Not intended for First Time Freshman students.

64087	Lecture-Discussion	FDS	12:30 PM - 01:45 PM	TR	1302 - Siebel Center for Comp Sci	Zhao, H

Credit Hours: 4 hours
Foundations of Data Science
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Title: Foundations of Data Science This course will introduce and discuss foundational techniques used in machine learning research, topics including but not limited to PAC learning theory, online learning, high-dimensional space, SVD, streaming and sketching algorithms. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

35990	Lecture-Discussion	GMA	02:00 PM - 03:15 PM	TR	1214 - Siebel Center for Comp Sci	Kim, M

Credit Hours: 4 hours
Generative Models for Audio
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC or MCS:Computer Sci Online -UIUC.
This course provides a comprehensive exploration of audio computing technology, bridging classical digital signal processing (DSP) methods with state-of-the-art neural approaches. We begin by revisiting foundational DSP concepts—such as convolution, filtering, and transforms—to establish principles of linear systems and statistical signal processing. Building on this core, the class delves into acoustic modeling and spatial audio, examining reverberation, 3D rendering, and array signal processing (beamforming, localization, and source tracking). Students will also study pitch estimation, noise reduction, audio restoration, For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

36011	Lecture-Discussion	JBR	11:00 AM - 12:15 PM	TR	1310 - Digital Computer Laboratory	Jabbarvand Behrouz, R

Credit Hours: 4 hours
ML for Software Engineering
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC or MCS:Computer Sci Online -UIUC.
The purpose of this course is to help students explore and understand the applications of machine learning to solve real-world software engineering problems. Students will become familiar and obtain knowledge about (1) fundamentals and advanced topics in software engineering as well as (2) how machine learning and data mining techniques can be used at different stages of software development to ensure quality and reliability of software. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

60407	Discussion/ Recitation	JCR	11:00 AM - 12:15 PM	R	-	Jabbarvand Behrouz, R
	Online	JCR	11:00 AM - 12:15 PM	T	-	Jabbarvand Behrouz, R

Credit Hours: 4 hours
ML for Software Engineering
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Restricted to MCS: Computer Sci OFF - UIUC.

This section is intended for Chicago MCS only. There may be online and in person components. You are responsible for completing homeworks, quizzes, and any in person activities that are required. Please speak with your professor regarding expectations.
The purpose of this course is to help students explore and understand the applications of machine learning to solve real-world software engineering problems. Students will become familiar and obtain knowledge about (1) fundamentals and advanced topics in software engineering as well as (2) how machine learning and data mining techniques can be used at different stages of software development to ensure quality and reliability of software. Weekly in-person meeting in Classroom B at 200 S. Wacker Dr. Chicago.

70878	Lecture-Discussion	JH	12:30 PM - 01:45 PM	WF	1035 - Campus Instructional Facility	Han, J

Credit Hours: 4 hours
Text Mining with LLM
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
This course provides an in-depth introduction and investigation on recent developments of text mining and natural language processing methods with large language models. We introduce the primitives of representation learning and large language models (LLMs) and focus on the research frontiers on representation learning and LLM for automated information extraction, knowledge graph construction, ontology enrichment, RAG (retrieval augmented generation), and theme-specific LLM construction and exploration. Restriction(s) Restricted to Graduate - Urbana-Champaign. Consent to instructor for CS-major senior/junior Undergraduate. Not intended for First Time Freshman students. For up-to-date information about CS course restrictions, please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

72124	Lecture-Discussion	KKH	09:30 AM - 10:45 AM	MW	2039 - Campus Instructional Facility	Hauser, K

Credit Hours: 4 hours
ADV Comp. Topics in Robotics
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC or MCS:Computer Sci Online -UIUC.
Advanced computational topics in robotics A graduate survey course on robotics, focusing on mathematic foundations, algorithms, machine learning, and integrating software and hardware systems. Lecture topics will include physics simulation, collision checking, motion planning, probabilistic filtering and tracking, 3D perception, and robot learning. Students will read current academic papers and carry out a semester-long, team-based project. Special restrictions: no limits on CS and non-CS enrollment. Prerequisite CS 225. https://cs598kkh2022.web.illinois.edu/ For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

49828	Lecture-Discussion	MPL	12:30 PM - 01:45 PM	TR	1043 - Sidney Lu Mech Engr Bldg	Cobb, C Sterman, S

Credit Hours: 4 hours
Methodological Pluralism
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
This graduate-level seminar covers the concept of methodological pluralism in human-computer interaction research. We will examine research methods, philosophies of research, and diverse ways of knowing to build foundational concepts and analytical skills for engaging in and understanding interdisciplinary research in computer science. Students will read research papers and methodological theory and engage in critical writing, group discussion, and oral presentations. This is a course designed primarily for PhD students in the Interactive Computing area. It may additionally be appropriate for PhD students in other areas, or advanced master's students seeking to enter graduate research. This course does not assume prior research experience or experience in HCI. There will be no undergrad overrides for this section. For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

69391	Lecture-Discussion	OM	03:30 PM - 04:45 PM	TR	1035 - Campus Instructional Facility	Chandrasekharan, E

Credit Hours: 4 hours
Online Moderation
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC or MCS: Computer Sci OFF - UIUC.
In this course, we will explore recent advances in detecting and discouraging antisocial behavior and fostering desirable behavior on the Internet. Focusing on a combination of sociological foundations and recent advances in HCI, NLP, and human-centered AI, we will examine online moderation through three lenses: understanding, building, and evaluating.
 First, we will survey the large spectrum of antisocial (and desirable) behavior prevalent on the Internet and understand how current research defines such behavior. Next, we will examine existing moderation tools built using computational techniques and social computing theory. Finally, we will review experimental studies, surveys and real-time deployments that evaluate the efficacy of moderation strategies.
For up-to-date information about CS course restrictions, please see the following link: http://go.cs.illinois.edu/csregister
Not intended for First Time Freshman students.

70683	Online	PSO	ARRANGED -		-	Chronopoulou, A

Credit Hours: 4 hours
Practical Statistical Learning
Restricted to Graduate - Urbana-Champaign. Restricted to MCS:Computer Sci Online -UIUC.
This section is only for students that are in the Computer Science Online MCS/MCS-DS Program offered on the Coursera platform. Additional ProctorU fees may apply.
Not intended for First Time Freshman students.

49224	Lecture	RAP	12:30 PM - 01:45 PM	WF	1310 - Digital Computer Laboratory	Alagappan, R

Credit Hours: 4 hours
Cloud Stor Sys: Theory&Practic
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Cloud data centers are powered by storage systems such as key-value stores, file systems, and databases. This course will explore such storage systems, focusing on their theoretical foundations and practical aspects. First, we will learn about data-structural ideas (e.g., LSMs, Be-Trees) and how they have led to the construction of efficient storage systems. Then, we will focus on practical systems issues (e.g., data safety, crash recovery) in building these systems. This course will be research-oriented and discussion-based: most classes will be based on research papers. An essential part of this course is a final research project. At the end of the course, students will be able to critique systems research papers, understand fundamental problems in storage systems, and have experience working on a research project. Students must have a background in undergraduate-level operating systems (CS 423).
Not intended for First Time Freshman students.

70203	Lecture-Discussion	SDM	11:00 AM - 12:15 PM	TR	1043 - Sidney Lu Mech Engr Bldg	Banerjee, A

Credit Hours: 4 hours
Sequential Decision Making
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
Title: Sequential DecisionMaking Sequential decision making (SDM) problems including online learning, online optimization, multi-armed bandits, contextual bandits, active learning, among others, are widely studied and used machine learning approaches. The course will provide a systematic and technically rigorous introduction to the topic. The course will cover both classical results and recent advances on the theme. For up-to-date information about CS course restrictions, please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

40106	Lecture-Discussion	SFS	02:00 PM - 03:15 PM	TR	0220 - Siebel Center for Comp Sci	Sultana, S

Credit Hours: 4 hours
Computing & Global Developmnt
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS: Computer Sci OFF - UIUC or MCS:Computer Sci Online -UIUC.
Computing and Global Development is a course that examines the intersection of computing technologies and international development. It explores how computing can be used to address global challenges, such as poverty, inequality, and climate change. The course draws on a variety of academic disciplines, including Information and Communication Technology and Development (ICTD), Human-Computer Interaction (HCI), Development Sociology, Science and Technology Studies (STS), and political economy. The course also teaches students how to design and evaluate ICT-based interventions for development. For up-to-date information about CS course restrictions, please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.

57783	Lecture-Discussion	SHW	02:00 PM - 03:15 PM	TR	0216 - Siebel Center for Comp Sci	Wang, S

Credit Hours: 4 hours
3-D Vision
Restricted to Computer Science or Bioinformatics major(s). Restricted to Graduate - Urbana-Champaign. Not intended for MCS:Computer Sci Online -UIUC, MCS: Computer Sci OFF - UIUC, MCS:Computer Sci Online -UIUC, or NDEG:Computer Science Onl-UIUC.
For up-to-date information about CS course restrictions, please view the following link for restrictions and release dates: http://go.cs.illinois.edu/csregister.
Not intended for First Time Freshman students.