

University of New Orleans

Fall 2022

Course List

CSCI 5101	Analysis of Algorithms	Mon / Wed	3:30pm – 4:45pm
CSCI 5125	Data Models and Database Systems	Mon / Wed / Fri	9:00am – 9:50am
CSCI 5311	Computer Networks and Telecommunications	Mon / Wed / Fri	12:00pm – 12:50pm
CSCI 5401	Principles of Operating Systems I	Tues / Thurs	6:30pm – 7:45pm
CSCI 5452	Cloud Computing	Tues / Thurs	5:00pm – 6:15pm
CSCI 5460	Network Operation and Defense	Tues / Thurs	3:30pm – 4:45pm
CSCI 5501	Programming Language Structure	Mon / Wed	2:00pm – 3:15pm
CSCI 5621	Intro to Cyber Security	Tues / Thurs	2:00pm – 3:15pm
CSCI 5622	Software Reverse Engineering	Mon / Wed	6:30pm – 7:45pm
CSCI 5661	Topics in Mobile Applications Development	Tues / Thurs	9:30am – 10:45am
CSCI 5670	Fundamentals of Game Development	Tues / Thurs	2:00pm – 3:15pm
CSCI 6140	Formal Languages	Tues / Thurs	6:30pm – 7:45pm
CSCI 6454	Parallel and Scientific Computing	Tues / Thurs	3:30pm – 4:45pm
CSCI 6522	Advanced Machine Learning II	Mon / Wed / Fri	10:00am – 10:50am
CSCI 6645	Planning Algorithms in Artificial Intelligence	Tues / Thurs	9:30am – 10:45am
CSCI 6990	Research Topics in Web Security	Mon / Wed	5:00pm – 6:15pm
ENEE 5575	Data & Computer Communications	Tues / Thurs	3:30pm – 4:45pm
ENEE 6522	Computer Aided Analysis of Large Power Systems	Tuesdays	5:00pm – 7:40pm
PHYS 5160	Advanced Laboratory	Fridays	2:00pm – 4:40pm
PHYS 5197	Special Topics: Biological Physics	Tues / Thurs	4:00pm – 5:15pm
PHYS 5322	Introduction to Acoustics	Tues / Thurs	9:30am – 10:45am
PHYS 5402	Quantum Physics of Atoms, Solids, and Nuclei	Tues / Thurs	2:00pm – 3:15pm
PHYS 5503	Electricity and Magnetism	Tues / Thurs	9:30am – 10:45am
PHYS 5801	Nuclear and Reactor Physics	Mon / Wed / Fri	11:00am – 11:50am
PHYS 6205	Digital Filtering and Image Processing	Tues / Thurs	11:00am – 12:15pm

Course Descriptions

CSCI 5101	Analysis of Algorithms Instructor: Sen, Atriya	Mon / Wed	3:30pm – 4:45pm
(Section W001) Prerequisite: CSCI 2125. Precise definition of the concept of an algorithm; techniques for algorithm verification; analyzing algorithm performance; applications to practical algorithms. (Units: 3.00/3.00)			

CSCI 5125	Data Models and Database Systems Instructor: Wagner, James	Mon / Wed / Fri	9:00am – 9:50am
	(Section W001) Prerequisite: CSCI 2125. Methods, structures, and algorithms used for the organization, representation, and manipulation of large data bases; design and implementation of data base management systems. Students will be required to develop a large project in a team setting. (Units: 3.00/3.00)		
CSCI 5311	Computer Networks and Telecommunications Instructor: Hoque, Tamjidul	Mon / Wed / Fri	12:00pm – 12:50pm
	(Section W001) Prerequisites: CSCI 2125 and CSCI 2450. Overview of modern computer communication networks covering the theoretic multi-layered model from the top down with an emphasis on working protocols and algorithms. Topics include client-server model, common application protocols, connectionless and reliable transport, flow and congestion control, routing, switching, shared medium protocols, transmission media and network hardware. (Units: 3.00/3.00)		
CSCI 5401	Principles of Operating Systems I Instructor: Wagner, James	Tues / Thurs	6:30pm – 7:45pm
	(Section W001) Prerequisites: CSCI 2125 and CSCI 2467. An introduction to the organization of various types of operating systems; machine structure and the functions of an operating system; multiprogramming and time-sharing environments; memory management and resource allocation; virtual memory concepts; the file system and IO device handling; protection and error recovery. (Units: 3.00/3.00)		
CSCI 5452	Cloud Computing Instructor: Vadrevu, Krishna Phani Kumar	Tues / Thurs	5:00pm – 6:15pm
	(Section W001) Prerequisite: CSCI 2467 for 4452. CSCI 2467 is recommended for 5452. The course provides a conceptual and practical introduction to cloud computing. This includes virtualization technologies, such as hybervisors, containers, and software-defined networking, as well as essentials of distributed computing related to performance, scalability, availability, and reliability. Special attention is given to cybersecurity concerns, including covert and side channel attacks. Includes a substantial hands-on component with students working small teams to develop and deploy an actual cloud service, and gaining the skills necessary for industry-relevant certifications. (Units: 3.00/3.00)		
CSCI 5460	Network Operation and Defense Instructor: Nur, Abdullah Yasin	Tues / Thurs	3:30pm – 4:45pm
	(Section W001) Prerequisite: CSCI 2467. An introduction to network and system administration. Topics include processes and files; scripting; system installation; boot and shutdown; process management; daemons and services; devices and drivers; network fundamentals; network file systems; network services. Topics may also include kernel configuration; performance analysis; accounting and system logging; security. The course requires lab projects on dedicated departmental equipment. (Units: 3.00/3.00)		
CSCI 5501	Programming Language Structure Instructor: Depano, N Adlai A	Mon / Wed	2:00pm – 3:15pm
	(Section W001) Prerequisite: CSCI 2125. A study of the concepts of programming languages as realized in a variety of commonly used languages, with emphasis on language definition and structure. (Units: 3.00/3.00)		

CSCI 5621	Intro to Cyber Security Instructor: Roussev, Vassil R	Tues / Thurs	2:00pm – 3:15pm
	(Section W001) Prerequisites: CSCI 2467. Overview of cyber security; physical security models; authentication and access control mechanisms; application and operating system level security; malicious software; overview of digital forensics; encryption, including private- and public-key encryption methods. A balance between theory and historical/current practice. Students will be required to develop a large project in a team setting. (Units: 3.00/3.00)		
CSCI 5622	Software Reverse Engineering Instructor: Sylve, Joseph Tillis	Mon / Wed	6:30pm – 7:45pm
	(Section W001) Prerequisites: CSCI 2450 and CSCI 2467. Deep analysis of the code, structure, and functionality of software using both static and dynamic methods. The course provides a solid foundation crucial to understanding modern malicious software and crafting potential solutions to recover from and prevent attacks. Reverse engineering is also useful for creating interoperable software , for verifying that software patches function as promised, and for the simple joy of understanding at a deep level how software works. (Units: 3.00/3.00)		
CSCI 5661	Topics in Mobile Applications Development Instructor: Samuel, Benjamin Michael	Tues / Thurs	9:30am – 10:45am
	(Section W001) Prerequisites for CSCI 4661: Credit or concurrent registration in CSCI 2125. Development of program applications for a current widely available mobile platform. Key concepts of applications programming for a mobile platform including the UI system, activity lifecycle, sensors, networking, threading, and application compatibility. May be taken 2 times for a maximum of 6 credit hours. (Units: 3.00/3.00)		
CSCI 5670	Fundamentals of Game Development Instructor: Samuel, Benjamin Michael	Tues / Thurs	2:00pm – 3:15pm
	(Section W001) Prerequisite for CSCI 4670: CSCI 2125. Introduction to techniques used in development of computer games. Concept and level design, narrative, game mechanics, gaming physics, simple AI, 2D and 3D graphics and animation, sound, and algorithms will be introduced using a team-based project approach. (Units: 3.00/3.00)		
CSCI 6140	Formal Languages Instructor: Depano, N Adlai A	Tues / Thurs	6:30pm – 7:45pm
	(Section W001) Prerequisite: CSCI 3102. Theory and application of formal language systems and automata. Emphasis will be placed on formal systems, the languages they generate, and techniques used to parse strings in those languages. (Units: 3.00/3.00)		
CSCI 6454	Parallel and Scientific Computing Instructor: Arifuzzaman, Shaikh M	Tues / Thurs	3:30pm – 4:45pm
	(Section W001) One-time waiver (Units: 3.00/3.00)		
CSCI 6522	Advanced Machine Learning II Instructor: Hoque, Tamjidul	Mon / Wed / Fri	10:00am – 10:50am
	(Section W001) Prerequisites: CSCI 4588/5588 or consent of the department. Topics include advanced machine learning models: Neural Networks, Support Vector Machines, Boosting, Genetic Algorithms, Clustering, Decision Trees, Random Forests, and Deep Belief Nets. Students will have opportunities to learn state-of-the-art machine learning algorithms, implementations, and their application to solving real-world problems. The focus of the class would be on the programming aspects of the statistical topics listed here. The in-depth mathematical instruction of the statistical concepts and the related statistical analyses are covered in MATH 6371 and MATH 6375. (Units: 3.00/3.00)		

CSCI 6645	Planning Algorithms in Artificial Intelligence Instructor: Sen, Atriya	Tues / Thurs	9:30am – 10:45am
	(Section W001) Prerequisites: CSCI 4525/5525 or consent of department. Planning a formalism within classical Artificial Intelligence research that studies how to represent and discover sequences of actions that change the world from some initial state to a desired goal state. This class surveys planning research from the 1960's to the present. Topics covered include partial-order and least-commitment planners, plan graphs, planners based on satisfiability and constraint-satisfaction, and modern state-space planning heuristics. (Units: 3.00/3.00)		
CSCI 6990	Research Topics in Web Security Instructor: Vadrevu, Krishna Phani Kumar	Mon / Wed	5:00pm – 6:15pm
	(Section W001) Prerequisite: consent of department. This is an advanced graduate-level course whose topics change from semester to semester. The prerequisites change as dictated by the topic. This course may be taken multiple times for credit. (Units: 3.00/3.00)		
ENEE 5575	Data & Computer Communications Instructor: Jovanovich, Kim D	Tues / Thurs	3:30pm – 4:45pm
	(Section H001) Prerequisites for ENEE 4575: CSCI 1201 and MATH 2108 or MATH 2111. Fundamental concepts of data and computer communications are presented including the open system interconnection (OSI) model, modems, local, metropolitan, and wide area networks (LAN, MAN, WAN), and high speed LANs, packets switching, broadband ISDN, frame relay, asynchronous transfer mode (ATM), and the Internet protocol. (Units: 3.00/3.00)		
ENEE 6522	Computer Aided Analysis of Large Power Systems Instructor: Rastgoufard, Parviz	Tuesdays	5:00pm – 7:40pm
	(Section W001) Prerequisite: ENEE 4522. Digital computer modeling and analysis techniques of large interconnected power systems. On-line power system control. (Units: 3.00/3.00)		
PHYS 5160	Advanced Laboratory Instructor: Zhou, Weilie	Fridays	2:00pm – 4:40pm
	(Section P001) Prerequisite: Consent of department. Four hours of laboratory and one hour of lecture each week. Selected experiments in several branches of physics with special emphasis on the control of selected experiments by microprocessors. Fundamentals of AC and DC circuits. (Units: 3.00/3.00)		
PHYS 5197	Special Topics: Biological Physics Instructor: Puri, Ashok	Tues / Thurs	4:00pm – 5:15pm
	(Section H001) Prerequisite: consent of department. The content of this course will be varied from semester to semester. May be taken multiple times for credit. A maximum of six semester hours credit in PHYS 4195, PHYS 4196, PHYS 4197 and PHYS 4198 will be allowed toward a B.S. degree. (Units: 1.00/3.00)		
PHYS 5322	Introduction to Acoustics Instructor: Chin-Bing, Stanley A	Tues / Thurs	9:30am – 10:45am
	(Section H001) Prerequisites: PHYS 3064 and MATH 2221. Fundamental principles of acoustics, emphasizing the physical concepts, derivations, and solutions of acoustic wave equations in bounded and unbounded fluids and solids. Reflection, refraction, and transmission; radiation characteristics of vibrating bodies. Acoustic wave guide theory, geometrical acoustics, and ray theory. Selected topics as time permits. (Units: 3.00/3.00)		

PHYS 5402	Quantum Physics of Atoms, Solids, and Nuclei Instructor: loup, Juliette W	Tues / Thurs	2:00pm – 3:15pm
	(Section H490) Prerequisites: PHYS 4401. Quantum theory of the electronic structure of atoms, diatomic molecules, solids, and nuclei. Topics include perturbation theory applied to multi-electron atoms, L-S coupling, molecular orbitals, band theory of solids, and shell model of nuclei. (Units: 3.00/3.00)		
PHYS 5503	Electricity and Magnetism Instructor: Malkinski, Leszek	Tues / Thurs	9:30am – 10:45am
	(Section H001) Prerequisite: PHYS 4501. Time-dependent electric and magnetic fields. Solutions of Maxwell's equations and electromagnetic radiation. (Units: 3.00/3.00)		
PHYS 5801	Nuclear and Reactor Physics Instructor: loup, Juliette W	Mon / Wed / Fri	11:00am – 11:50am
	(Section H001) Prerequisites: PHYS 3064. A survey of nuclear forces and models, radioactivity, nuclear reactions, apparatus for detection of particles and radiation of nuclear origin (scintillation counters, solid-state detectors, coincidence electronics, etc.), fission and fusion reactors, heat exchangers, radiation damage, reactor shielding, nuclear fuel fabrication and reprocessing, options for disposal of nuclear wastes. (Units: 3.00/3.00)		
PHYS 6205	Digital Filtering and Image Processing Instructor: loup, Juliette W	Tues / Thurs	11:00am – 12:15pm
	(Section H001) Prerequisite: PHYS 4205. The discrete Fourier transform and the fast Fourier transform in physical applications; noise characteristics and techniques of noise removal; one-dimensional image enhancement and restoration; two-dimensional image processing; and applications to seismic data, pictures, and other physical data. (Units: 3.00/3.00)		

University of New Orleans

Registration Information

Admissions

Applicants for non-degree admission to the Graduate School must have a bachelor's degree. Up to 12 hours earned as a non-degree student may be transferred toward a Graduate degree upon approval of the Graduate Program. Applicants for non-probational admission to a Graduate Program should have at least a 2.5 undergraduate average, a 3.0 average in any graduate work taken, and satisfactory test scores. Individual programs may have additional requirements. Students not seeking a degree may apply to be a special student.

All students must satisfy prerequisite requirements for UNO courses or receive consent of the department offering the course.

Registration

Registration for Fall 2022 is ongoing through August 14th, 2022 without a late fee. Classes begin on August 15th, 2022. Students should register for classes on-line. Please contact Danielle Poole at 228-688-3170 to let her know that you have enrolled so she can track your paperwork and avoid problems. If you have any questions, please contact Danielle Poole at the CHL.

You can also log on to the University of New Orleans homepage located at www.uno.edu for more information on programs and classes on campus. Classes, days, and times listed are subject to change.

Tuition

Resident and non-resident tuition is \$1,460 for 3 graduate credit hours (not including any additional fees). A full listing of tuition costs based on other credit hours and residency status is available at <https://www.uno.edu/bursar/grad-fees>.

Note: The Center of Higher Learning makes every attempt to accurately list tuition rates for our participating universities. It is advisable, however, to check with the University before submitting your final paperwork or payment.

Important Dates

August 14 th	Last day to register without late fee
August 15 th	Classes begin
November 30 th	Last day of classes
December 2 nd	Final exams begin

Payment

Payment can be made with a personal check, credit card, cash, or by a government training form.

Student Advisement

Dr. Juliette loup (504-280-6715) is available for counseling students who are interested in the UNO Ph.D. program in Engineering and Applied Science, the master's program in Applied Physics, and any other UNO degree program. Please make appointments by contacting Danielle Poole at 228-688-3170.