

PROGRAM SUMMARY

- **Credit Hours:** 120 hours
- **Concentrations:** Bioinformatics
 - See separate Academic Plan of Study for concentrations in AI, Robotics & Gaming; Data Science; and Software, Systems & Networks (CS Department); and Cyber Security; Software Engineering; and Web & Mobile Applications (SIS Department)
- **Declaring the Major:** Minimum GPA of 2.5 required; no pre-requisite courses; change of major form accepted year-round; advising session required after declaration
- **Advising (For the Major):** Required on admission to the major and before each semester, assigned advisors available by appointment
- **Advising (For General Education):** Required on admission to the major and before each semester, assigned advisors available by appointment
- **Minimum Grades/GPA:** GPA of 2.0 in the major required for graduation
- **Teacher Licensure:** No
- **Evening Classes Available:** Some
- **Weekend Classes Available:** No
- **Other Information:** Freshman Learning Community, CCI Honors, Internships, Co-ops, Graduate Early Entry
- **Contact(s):** For the concentration in Bioinformatics: Dr. Jun-tao Guo, Associate Professor, Department of Bioinformatics, 704-687-7492, jguo4@uncc.edu, Bioinformatics 359.

PROGRAM REQUIREMENTS

The B.S. in Computer Science is a relatively structured degree with seven (7) different concentrations. The degree has 25 hours of core Computer Science courses, a series of courses to choose from as major electives, and 9-15 semester hours of related work in a discipline outside computer science, possibly forming a minor in that discipline area. The program begins with a series of courses that are generally prerequisites for upper level courses. Due to the large number of major requirements it is recommended that students declare the major in their freshman year and the concentration in their sophomore year to complete their degree on time.

Areas	Credit Hours	Description
Pre-Major/Prerequisites	-	
Major	70-76	Computer Science Core 25 hours – ITSC 1212/L, 1213/L, 1600, 2175, 2214, 3146, 3155, 3181/L; Computer Science Concentration one of seven concentration areas: AI, Robotics & Gaming; Bioinformatics; Cyber Security; Data Science; Software, Systems & Networks; Software Engineering; Web & Mobile Applications; Major Electives 0-6 hours depending on concentration – Must be at the 3000 level or above and in the College of Computing and Informatics; Capstone 3 hours. Communication - ENGL 2116, ITCS 3688, PHIL 1106; Analytic - MATH 1241, 1242, 2164, and STAT 2122.
General Education (not satisfied by other major requirements)	25-28	UWRT 1101 and 1102 (or UWRT 1103); 7 hours of approved natural sciences with one lab; 3 hours of approved social sciences; LBST 1101, 1102, 1103, 1104 or 1105; LBST 2101 and 2102; ITIS 2211 (fulfills the LBST 221X requirement).
Related Work	9-15	May be satisfied by a second major, a minor, or a set of coordinated courses developed through consultation with an advisor.
Foreign Language	-	
Electives	1-11	Varies depending on concentration
Total Credit Hours	120	

SUGGESTED PLAN OF STUDY – CONCENTRATION: BIOINFORMATICS

Freshman Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ITSC 1600	Computing Professionals	1			
ITSC 1212+L	Introduction to Computer Science I (with Lab)	4			
PHIL 1106	Critical Thinking	3			
MATH 1241	Calculus I	3	X		
BINF 1101+L	Introduction to Bioinformatics and Genomics	4	X		Fulfills Natural Science + Lab Gen. Ed. Requirement
<i>Spring Semester</i>					
ITSC 1213+L	Introduction to Computer Science II (with Lab)	4			
XXXX XXXX	Natural Science (General Education Requirement)	3	X		
UWRT 1101	Writing and Inquiry in Academic Contexts I	3	X		
MATH 1242	Calculus II	3	X		
LBST 110X	LBST 1100 Series: Arts and Society	3	X		
					31 Credit Hours for Year

Sophomore Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
BINF 2111+L	Introduction to Bioinformatics Computing	4			
STAT 2122	Introduction to Probability and Statistics	3			
UWRT 1102	Writing and Inquiry in Academic Contexts II	3	X		
LBST 2101	Western Cultural and Historical Awareness	3	X		
XXXX XXXX	Social Science (General Education Requirement)	3	X		
<i>Spring Semester</i>					
MATH 2164	Matrices and Linear Algebra	3			
ENGL 2116	Introduction to Technical Communication	3	X	W	
LBST 2102	Global and Intercultural Connections	3	X		
ITIS 2211	Ethical Issues in Personal, Professional, and Public Life	3	X		Fulfills LBST 22XX requirement
ITSC 2214	Data Structures and Algorithms	3			
					31 Credit Hours for Year

Junior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ITSC 2175	Logic and Algorithms	3			
BINF 3101+L	Sequence Analysis	3			
ITSC 3155	Software Engineering	3			
XXXX XXXX	Related Work (1 of 5)	3			
XXXX XXXX	Related Work (2 of 5)	3			
<i>Spring Semester</i>					
BINF XXXX	Choose 1 from BINF 3121, 3211, or 4211	3			
BINF XXXX	Choose 1 from BINF 3201/L, 4101, or 4111	3-4			
ITCS 3688	Computers and Their Impact on Society	3	X	W,O	Fulfills writing in the discipline
XXXX XXXX	Related Work (3 of 5)	3			
XXXX XXXX	Related Work (4 of 5)	3			
					30-31 Credit Hours for Year

Senior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ITSC 3181+L	Introduction to Computer Architecture (with Lab)	4			
BINF XXXX	Choose 1 from BINF 4171 or 4191	3			
XXXX XXXX	Free Elective	3			
XXXX XXXX	Free Elective	3			
<i>Spring Semester</i>					
ITSC 3146	Operating Systems and Networking	3			
BINF 4600	Bioinformatics Seminar	1			
XXXX XXXX	Capstone BINF 4650 or ITCS 4991	3			
XXXX XXXX	Related Work (5 of 5)	3			
XXXX XXXX	Free Elective	3			
XXXX XXXX	Free Elective	1-2			
					27-28 Credit Hours for Year

ADVISING RESOURCES

- General Education Requirements for ALL Students: ucol.uncc.edu/general-education
- Undergraduate Catalog: catalog.uncc.edu
- Central Advising website: advising.uncc.edu
- College of Computing & Informatics advising website: cci.uncc.edu/students/advising
- University Advising Center website: advisingcenter.uncc.edu

SUGGESTED PLAN OF STUDY – CONCENTRATION: AI, ROBOTICS & GAMING

SUGGESTED PLAN OF STUDY – CONCENTRATION: DATA SCIENCE

SUGGESTED PLAN OF STUDY – CONCENTRATION: SOFTWARE, SYSTEMS & NETWORKS

- SEE ACADEMIC PLAN OF STUDY FOR B.S. IN COMPUTER SCIENCE (CS DEPARTMENT) –

SUGGESTED PLAN OF STUDY – CONCENTRATION: CYBER SECURITY

SUGGESTED PLAN OF STUDY – CONCENTRATION: SOFTWARE ENGINEERING

SUGGESTED PLAN OF STUDY – CONCENTRATION: WEB & MOBILE APPLICATIONS

- SEE ACADEMIC PLAN OF STUDY FOR B.S. IN COMPUTER SCIENCE (SIS DEPARTMENT) –

ADVISING RESOURCES

- General Education Requirements for ALL Students: ucol.uncc.edu/general-education
- Undergraduate Catalog: catalog.uncc.edu
- Central Advising website: advising.uncc.edu
- College of Computing & Informatics advising website: cci.uncc.edu/students/advising
- University Advising Center website: advisingcenter.uncc.edu