

NEURODIAGNOSTICS AND SLEEP SCIENCE MAJOR, B.S.

The Neurodiagnostics and Sleep Science (NDSS) major prepares individuals for professional practice in the health specialties of neurodiagnostics and sleep science. The NDSS major also allows current practitioners to continue their professional development, while learning new skills in an increasingly important and rapidly expanding segment of health science.

The emphasis of the curriculum is to enhance and advance the student's professional career in neurodiagnostics and sleep sciences with additional education skills in critical thinking and creative problem solving needed for key leadership, educational, and management positions. The curriculum offers specific professional coursework in advanced methods and monitoring, program administration, and clinical outcomes evaluation. The program culminates in a capstone experience that is developed around the students' specific professional interest area.

This degree program is offered as a limited residency program that is a combination of both distance education or on-campus through the UNC-Chapel Hill Department of Health Sciences.

Neurodiagnostic and sleep science procedures record and study the electrical activity of the brain, spinal cord, and peripheral nerves, the function of the cardiovascular system, and the function of the respiratory system. A variety of diagnostic tests are performed including recording sleep studies (polysomnograms), recording brain wave activity (electroencephalography), recording responses from peripheral nerve stimulation (nerve conduction velocities), recording stimulus evoked responses from the brain and spinal cord (Evoked Potentials), and monitoring brain and spinal cord activity during surgery (intraoperative monitoring). Therapeutic procedures are also performed including positive airway pressure and supplemental oxygen titration for people with certain sleep disorders such as apnea.

Accreditation

The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Committee on Accreditation for Polysomnographic Technologist Education (CoAPSG).

Admission to the Program

Students must complete all First-Year Foundation requirements, all Reflection and Integration requirements, and complete at least six Focus Capacity requirements. Please visit IDEAs in Action General Education curriculum (<https://catalog.unc.edu/undergraduate/ideas-in-action/>) for specific information regarding the general education course requirements. Additionally, the following pre-admission math/science courses are required:

Code	Title	Hours
Prerequisite Course List		
MATH 130 or MATH 231	Precalculus Mathematics ^F Calculus of Functions of One Variable I	3-4
BIOL 101 & 101L	Principles of Biology and Introductory Biology Laboratory ^{H, F}	4

BIOL 252 & 252L	Fundamentals of Human Anatomy and Physiology and Fundamentals of Human Anatomy and Physiology Laboratory ^H	4
CHEM 101 & 101L or BIOC 107	General Descriptive Chemistry I and Quantitative Chemistry Laboratory I ^{H, F} Introduction to Biochemistry	4
PHYS 114 or PHYS 118	General Physics I: For Students of the Life Sciences ^F Introductory Calculus-based Mechanics and Relativity	4
PHYS 115 or PHYS 119	General Physics II: For Students of the Life Sciences ^F Introductory Calculus-based Electromagnetism and Quanta	4
PSYC 101	General Psychology ^F	3

^H Honors version available. An honors course fulfills the same requirements as the nonhonors version of that course. Enrollment and GPA restrictions may apply.

^F FY-Launch class sections may be available. A FY-Launch section fulfills the same requirements as a standard section of that course, but also fulfills the FY-SEMINAR/FY-LAUNCH First-Year Foundations requirement. Students can search for FY-Launch sections in ConnectCarolina using the FY-LAUNCH attribute.

Transfer Credit Equivalency

The UNC Transfer Credit list provides a list of courses that students have previously transferred to UNC-Chapel Hill from other community college or four-year institutes.

UNC (https://tes.collegesource.com/publicview/TES_publicview01.aspx?rid=ff81c5a2-3ec7-4b31-a7fb-04e2fd5f0345&aid=ca8ebc64-42ca-4a2d-b16b-f8f68bbb6767)–
(https://tes.collegesource.com/publicview/TES_publicview01.aspx?rid=ff81c5a2-3ec7-4b31-a7fb-04e2fd5f0345&aid=ca8ebc64-42ca-4a2d-b16b-f8f68bbb6767)Chapel Hill Transfer Credit List (https://tes.collegesource.com/publicview/TES_publicview01.aspx?rid=ff81c5a2-3ec7-4b31-a7fb-04e2fd5f0345&aid=ca8ebc64-42ca-4a2d-b16b-f8f68bbb6767)

Application Process

Application may be submitted prior to completing all course requirements but decisions will be given on a conditional basis if that is the case. All general education requirements need to be completed prior to being admitted.

Applicants will be reviewed using the following criteria:

- Clarity and quality of personal statement
- Academic progress and promise
- Supportive references
- Knowledge of the field

If you need to apply for an F-1 visa, please contact us before you apply to our program.

Application Instructions

Current UNC–Chapel Hill Students (Internal):

Click Apply (<https://connectcarolina.unc.edu/>) and log in to the ConnectCarolina Student Center. In the “other academic” dropdown, select “Apply for Change of Major.” Once you complete and submit this request, you will receive an email with instructions for completing your application.

Transfer Students:

Click Apply (<https://connectcarolina.unc.edu/>):

- Go to the Common Application to create an account and start your application.
- Submit the application, the common application supplement, and the application fee by the deadline.
- Upload the essay requested in your common application supplement.
- Submit the official transcript from all secondary and post-secondary schools to: University of North Carolina at Chapel Hill, Office of Undergraduate Admissions, Jackson Hall, Campus Box 2200, Chapel Hill, NC 27599-2200.
- Arrange to have two letters of recommendation written on your behalf sent to uncsubmit@admissions.unc.edu. Recommendations should be completed by college professors or teaching assistants who are familiar with your academic abilities, work supervisors, or volunteer project supervisors.

You must apply to UNC and to the NDSS program through Undergraduate Admissions. When you indicate that you are applying to the NDSS program, you should also get the NDSS-specific questions on your application.

For more information on application deadlines, please go to our website. (<https://www.med.unc.edu/healthsciences/ndss/the-program/>)

Student Learning Outcomes

Upon completion of the Neurodiagnostics and Sleep Science program, students should be able to:

- Perform as competent entry-level neurodiagnostic and polysomnographic technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- Investigate healthcare issues individually and within teams that uniquely involve the overlap of electrophysiology, laboratory science, management, and education.
- Demonstrate leadership skills necessary to oversee electrophysiological and sleep science facilities (laboratory, hospitals, industry, colleges).
- Teach courses related to neurodiagnostic studies and sleep science.
- Exemplify innovation and sound scientific theory for the use of verified methodology and principles of neurodiagnostics and sleep science practice.
- Explain advanced, clinical diagnostic measurements, disease prevention techniques, and theories supporting current neurodiagnostic and sleep science practices.
- Demonstrate effective written and oral communication skills.

- Establish a practical connection between the undergraduate major and the professional world.

Requirements

In addition to the program requirements, students must

- earn a minimum final cumulative GPA of 2.000
- complete a minimum of 45 academic credit hours earned from UNC–Chapel Hill courses
- take at least half of their major core requirements (courses and credit hours) at UNC–Chapel Hill
- earn a minimum cumulative GPA of 2.000 in the major core requirements. Some programs may require higher standards for major or specific courses.

For more information, please consult the degree requirements section of the catalog (<https://catalog.unc.edu/undergraduate/degree-requirements/>).

The schedule of academic work includes the following General Education requirements that are listed under “Additional Requirements.” Students must complete all First-Year Foundation requirements, all Reflection and Integration requirements, and complete at least six Focus Capacity requirements as part of the IDEAs in Action General Education curriculum. In addition, the following specific requirements apply to students in the General College found under “Additional Requirements.”

Code	Title	Hours
Additional Requirements		
BIOL 101 & 101L	 Principles of Biology and  Introductory Biology Laboratory ^{H, F}	4
BIOL 252 & 252L	 Fundamentals of Human Anatomy and Physiology and Fundamentals of Human Anatomy and Physiology Laboratory ^H	4
CHEM 101 & 101L or BIOC 107	 General Descriptive Chemistry I and  Quantitative Chemistry Laboratory I ^{H, F} Introduction to Biochemistry	4
MATH 130 or MATH 231	 Precalculus Mathematics ^F  Calculus of Functions of One Variable I	3
PHYS 114 or PHYS 118	 General Physics I: For Students of the Life Sciences ^F  Introductory Calculus-based Mechanics and Relativity	4
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PSYC 101	 General Psychology ^F	3
Core Requirements		
NDSS 393	Clinical rotation in Neurophysiology and Polysomnography ¹	2
NDSS 401	Basic Neurophysiology and Sleep for Clinical Neurophysiology ¹	3

NDSS 410	Intro to Basic Sleep and Neurophysiology Instrumentation and Technology ¹	4
NDSS 415L	Polysomnographic and Neurophysiologic Technology/Lab ¹	7
NDSS 420	Pathophysiology of Sleep, Neurological, and Related Disorders	3
NDSS 430	Neurological and Sleep Diagnostic and Therapeutic Methods, and Monitoring	3
NDSS 440	Evidence Based Practice in Neurodiagnostics and Sleep Science	3
NDSS 450	Advanced Sleep and Neurodiagnostic Clinical Procedures	3
NDSS 460	Informational Technology and Analytics in Neurodiagnostics and Sleep Science	3
NDSS 493	Neurodiagnostics and Sleep Science Practicum	3
NDSS 500	Principals and Practice of Healthcare Education	3
NDSS 510	Program Administration: Neurodiagnostics and Sleep Science Department Management	3
NDSS 520	Advanced Physiological Monitoring and Data Acquisition	3
NDSS 530	Leadership in Healthcare Organizations	3
NDSS 593	 Neurodiagnostics and Sleep Science Internship	3
NDSS 697	 Neurodiagnostics and Sleep Science Capstone	3
NDSS 698	 Neurodiagnostics and Sleep Science Capstone II	3

Total Hours 81

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¹ This course is open to all students. Non-degree or prospective students may have the option to take this course prior to applying and receive credit towards the NDSS major once they have applied and been admitted to the program.

Sample Plan

Sample plans can be used as a guide to identify the courses required to complete the major and other requirements needed for degree completion within the expected eight semesters. The actual degree plan may differ depending on the course of study selected (second major, minor, etc.). Students should meet with their academic advisor to create a degree plan specific to their interests. The sample plans represented in this catalog are intended for first-year students entering UNC–Chapel Hill in the fall term. Some courses may not be offered every term.

The suggested course sequence for the required pre NDSS courses at UNC–Chapel Hill can be found here (<https://www.med.unc.edu/healthsciences/ndss/the-program/curriculum-2/>). Transfer students receiving placement credit may have a slightly different sequence.

Scholarships and Grants

Students in the Neurodiagnostics and Sleep Sciences degree program are eligible for scholarships and grants that can be found here.

Department Programs

Majors

- Clinical Laboratory Science Major, B.S. (<https://catalog.unc.edu/undergraduate/programs-study/clinical-laboratory-science-major-bs/>)
- Neurodiagnostics and Sleep Science, B.S. (p. 1)
- Radiologic Science, B.S. (<https://catalog.unc.edu/undergraduate/programs-study/radiologic-science-major-bs/>)

Minor

- Speech and Hearing Sciences (<https://catalog.unc.edu/undergraduate/programs-study/speech-hearing-sciences-minor/>)

Courses

- Clinical Laboratory Sciences (CLSC) (<https://catalog.unc.edu/courses/clsc/>)
- Neurodiagnostics and Sleep Science (NDSS) (<https://catalog.unc.edu/courses/ndss/>)
- Radiologic Science (RADI) (<https://catalog.unc.edu/courses/radi/>)
- Speech and Hearing Sciences (SPHS) (<https://catalog.unc.edu/courses/sphs/>)

Contact Information

Department of Health Sciences

Visit Program Website (<https://www.med.unc.edu/healthsciences/>)
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Program Director

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Chair

Christopher Ingersoll