

Interdisciplinary Studies in Science (INSC)

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INSC 1000. Science at Northeastern. (1 Hour)

Introduces first-year students with majors in the College of Science to the liberal arts in general. Offers students an opportunity to become familiar with their college and majors; to develop the academic skills necessary to succeed (analytical ability and critical thinking); to become grounded in the culture and values of the University community; and to develop interpersonal skills—in short, presents students with the skills needed to become a successful university student.

INSC 1200. First-Year Research Project. (1 Hour)

Offers an opportunity for students to engage in supervised, project-based, group research.

INSC 1501. Research Methods in the Sciences A. (2 Hours)

Examines selected topics, methods, and skills useful in various forms of experiential education. Topics vary each semester and may be illustrated through examples drawn from the sciences or from student-initiated problems. May be repeated without limit.

Corequisite(s): INSC 1502

INSC 1502. Research Methods in the Sciences B. (2 Hours)

Examines selected topics, methods, and skills useful in various forms of experiential education. Topics vary each semester and may be illustrated through examples drawn from the sciences or from student-initiated problems. May be repeated without limit.

Corequisite(s): INSC 1501

INSC 1990. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

INSC 2964. Experiential Project. (0 Hours)

Offers students an applied project setting in which to apply their curricular learning. Working with a sponsor, students refine an applied research topic, perform research, develop recommendations that are shared with a partner sponsor, and create a plan for implementing their recommendations. Seeks to benefit students with a curriculum that supports the development of key business communication skills, project and client management skills, and frameworks for business analysis. Offers students an opportunity to learn from sponsor feedback, review 'lessons learned,' and incorporate suggestions from this review to improve and further develop their career development and professional plan.

INSC 2990. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

INSC 2992. Research. (0 Hours)

Offers an opportunity to document student contributions to research projects or creative endeavors.

INSC 3000. Science Behind Innovation and Entrepreneurship. (4 Hours)

Elucidates the role of scientific discoveries behind innovation to aspiring innovators and entrepreneurs. Outlines how science translates to technologies that drive emerging enterprises in sustainability, healthcare, defense, space, and security industries. Explores the role of science in disrupting market paradigms and innovating customer solutions. Seeks to equip non-science-based aspiring entrepreneurs with tools to apply science-driven solutions for unaddressed customer needs, pivot expeditiously while seeking a product-market fit in early stage startups, and conceptualize novel applications and use-cases for existing innovations. Seeks to enable aspiring entrepreneurs with a pure science background to take the first steps toward translating scientific discoveries into technologies and products. The course is designed to empower individuals to improve engagement, productivity, and solutions discovery by establishing communications between the science and business worlds.

INSC 3990. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

INSC 4000. Bridging Scientific Discovery and Innovation. (4 Hours)

Explores how scientific discovery can lead innovation for the creation of agile ventures with high disruptive potential and broad societal impact. Illustrates the need for science innovation in the face of changing markets and technologies. Introduces *The Innovator's Dilemma* and offers solutions for overcoming obstacles in scientific discovery-led innovation. Describes metrics for measuring the impact of science innovation. Uses examples drawn from industries undergoing disruption to explore the key discoveries and innovations that distinguish the competition landscape, how industry leaders have created new opportunities and challenges for scientific advancement, and societal implications of the resulting technologies. Simulates the processes that companies use to identify, develop, and market disruptive science innovations through the creation of a personal learning network as a model for discovery-driven planning.

Prerequisite(s): INSC 3000 with a minimum grade of D

Attribute(s): NUpath Creative Express/Innov

INSC 4990. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

INSC 4998. Research. (0 Hours)

Offers an opportunity to document student contributions to research projects or creative endeavors.

INSC 5000. Translating Scientific Discoveries: From Lab to Fab and Beyond. (4 Hours)

Introduces how to effectively present the value of a scientific discovery in the language of investors, customers, and end-users. Examines the tools necessary to translate a scientific discovery that addresses real-world problems, and explores pathways to take it from a laboratory-research stage to a product or service. Showcases successful strategies of science innovation-based products and solutions. Uses existing science innovations with commercialization potentials as a template to scout for use-cases. Offers hands-on opportunities for discovering end-users/customers. Outlines approaches to identify beachhead markets for innovations based on discoveries and validate or pivot the technology development steps to meet the product-market fit. Offers insights on obtaining non-equity-diluting resources and partnerships for de-risking the early stage technology and customer discovery. Discusses industry standards, compliance, and regulatory institutions.

INSC 5963. Topics. (1 Hour)

Offers students an opportunity to learn about timely issues, develop new skills, or explore areas of broad interest in an immersive, short-course format. Content and instructors vary by offering.

INSC 5964. Projects for Professionals. (0 Hours)

Offers students an applied project setting in which to apply their curricular learning. Working with a sponsor, students refine an applied research topic, perform research, develop recommendations that are shared with a partner sponsor, and create a plan for implementing their recommendations. Seeks to benefit students with a curriculum that supports the development of key business communication skills, project and client management skills, and frameworks for business analysis. Offers students an opportunity to learn from sponsor feedback, review "lessons learned", and incorporate suggestions from this review to improve and further develop their career development and professional plan.

INSC 5965. Engaging with Industry Partners for Rising Professionals. (0 Hours)

Offers students an enhanced applied project setting in which to apply their curricular learning. Working with a partner sponsor, students refine an applied research topic, perform research, develop recommendations that are shared with the partner sponsor, and create a plan for implementing their recommendations. Curriculum supports students as they develop key business communication skills, project and client management skills, and frameworks for business analysis. Offers students an opportunity to learn from sponsor feedback, review lessons learned, and incorporate suggestions to improve and further hone their career development and professional plan. Career development opportunities through skill-building workshops, panels, and interview preparation are available. Partner-student interactions, including a culminating project presentation, allow partners to assess student potential for co-op, internship, or other employment opportunities with the partner.