

Campaign to establish an educational program in Color Technology

Currently there is no university-level program in the United States training students in Color Science or Color Technology, yet a great need exists in many industries for students with this training. Personnel hired into color technology positions without training in the field can take many years of internal training before they can be functional and contributing color technologists. This approach wastes resources and is inefficient.

The Department of Coatings and Polymeric Materials at North Dakota State University seeks to establish an educational program in Color Technology. The focus of the program will be a two-year professional (non-thesis) M.S. degree program with company internships between the first and second year.

Due to North Dakota State's strong and durable program in Coatings and Polymeric Materials, establishing this Color Technology program at NDSU builds on our strengths, current infrastructure and expertise.



The Curriculum

The curriculum will consist of courses in Color and Appearance, Color Matching and Colorant Formulation, Diffuse Reflectance Spectroscopy, Color Space and its Transforms, Mathematical Tools for Color Technology, Visual Perception, Optics, and a Capstone Project. The majority of the courses are supplemented with hands-on laboratory work. The Master's degree requires 30 credits of course work and the program is designed to be completed within four semesters. Students who are also doing their undergraduate degree at NDSU will be able to complete a combined BS/MS degree in 5 years.

Expected Outcomes

Students who complete the program are expected to have acquired the following skills:

- Understand the foundations of colorimetry and the CIE system
- Understand when and why basic colorimetry fails
- Understand difference between light sources and illuminants
- Ability to correctly operate any color measuring device available
- How to standardize a reflectance or transmittance spectrophotometer and correct common errors
- Ability to review the performance of an instrument and recognize valid readings and bad readings
- Ability to build a colorant characterization database
- Ability to use a database of colorant properties to match opaque color standards
- How to characterize and identify classes of pigments
- How to establish and assess color difference tolerances
- How to setup the parametric factors in a color tolerance equation
- How to perform a gauge R&R on an optical instrument
- How to assess and control metamerism

Our Goal: Establish an educational program in Color Technology

In order to establish this program, funds are needed to supplement university funds for the first five years of the program in order to launch the program and bring it to a secure and sustainable condition.

Operating Expenses: A total of \$135,000 each year over five years is needed to supplement expenses related to the program director, teaching materials, teaching assistant, and administrative assistant. Reaching an initial threshold of \$56,000 will allow us to hire the faculty who will direct the program. Being able to hire a faculty member with significant experience and expertise in Color Technology will help get the curriculum finalized and approved and launched in the Fall 2017 semester.

Equipment: Approximately \$300,000 in one-time cash or in-kind contributions of color measurement equipment is needed to be able to renovate the laboratory space and expose the students in the program to state-of-the-art color measurement systems.

Scholarships: Since this program is a professional program, students in the program will pay their own tuition. Scholarships can be provided to qualified students to help with their tuition and other expenses.

Internships: We intend to offer students internship opportunities in the summer between their first and second year. Commitments to host one or more students in a color technology in a ten-week summer internship at your company are needed.

How to donate or get more information

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