

**RIT**

**Program of Color Science / Munsell Color Science Laboratory**  
**mcs.l.rit.edu**

Announces ... *CLRS-600 Fundamentals of Color Science*

A Summer 2016 Online Course Open to Non-Matriculated Students from Around the World  
(This is the evolution of our former one-week, on-campus, industrial short courses.)

May 31, 2016 - August 5, 2016

You complete the work within the summer term on your schedule and at your pace.

3 Graduate-Level Credit Hours  
(May be audited for learning only.)

Tuition (2016)

\$5019 (taken for credit)

\$2510 (audited, 50% of regular tuition, no credit granted, no work graded)

Open to non-matriculated students with technical backgrounds (permission required to register).

Open to RIT graduate students in STEM programs.

Summer 2016 Enrollment Opens February 18: [www.rit.edu/enrollment](http://www.rit.edu/enrollment)

*Course Description:*

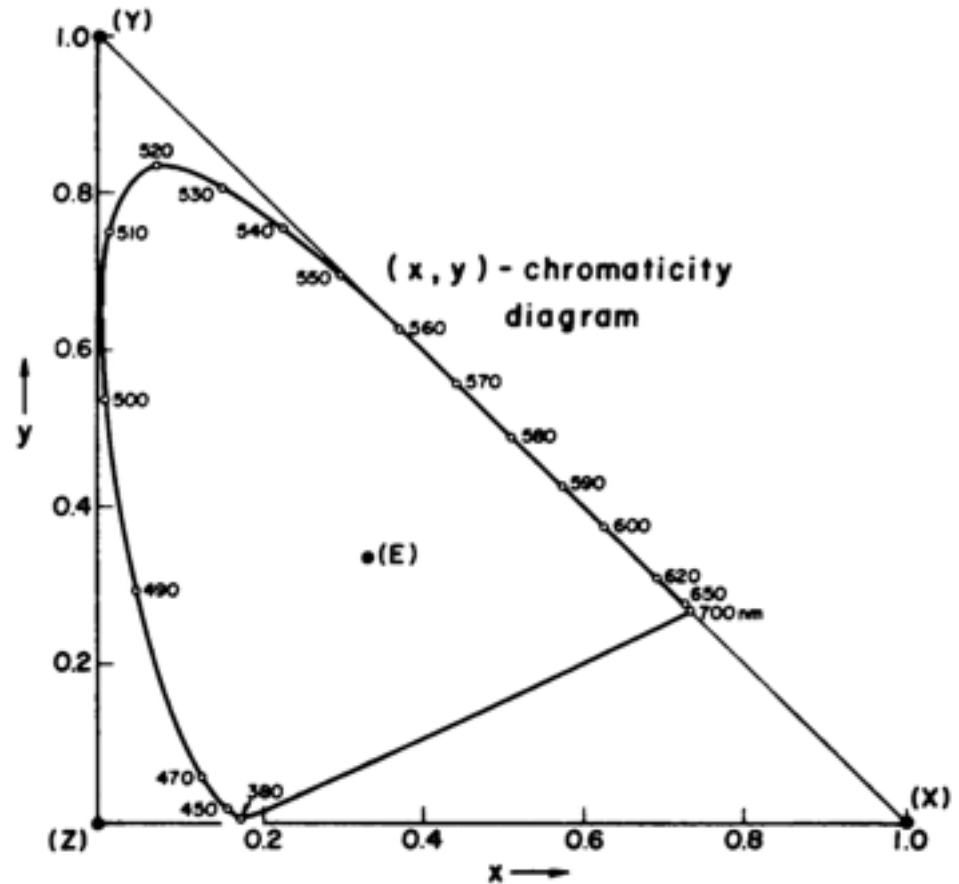
**COS-CLRS-600**

**Fundamentals of Color Science**

This asynchronous online course provides a technical introduction to color science and the CIE system of colorimetry. Topics covered include color perception, color measurement, color spaces, and applications. The course is intended for students with a technical background who are interested in adding an elective course in color science to their graduate program and for practitioners in the color field interested in a more thorough understanding of the science behind colorimetry. Cannot be taken for program credit by Color Science MS and PhD students. (Prerequisite: Bachelor's degree in a STEM discipline or permission of instructor) **Online, Credit 3 (Summer)**

## Topics:

- 6.1 Definition of Color
  - 6.1.1 Terminology
  - 6.1.2 Attributes of Appearance
- 6.2 Color Perception
  - 6.2.1 Optics of the Eye
  - 6.2.2 Anatomy & Physiology of the Retina
  - 6.2.3 Higher-Level Perception
  - 6.2.4 Color Psychology
- 6.3 Light Sources & Spectroradiometry
  - 6.3.1 Types of Light Sources
  - 6.3.2 Measuring Illumination
  - 6.3.3 Sources and Illuminants
- 6.4 Materials & Spectrophotometry
  - 6.4.1 Interaction of Light & Matter
  - 6.4.2 Measuring Material Properties
  - 6.4.3 Instrument Geometry
- 6.5 Photometry
  - 6.5.1 History of Photometry
  - 6.5.2 Implementation of Photometry
  - 6.5.3 Extension to Colorimetry
- 6.6 CIE Colorimetry
  - 6.6.1 Color Matching Functions
  - 6.6.2 Tristimulus and Chromaticity Spaces
  - 6.6.3 Computation and Interpretation
- 6.7 Color Spaces
  - 6.7.1 Derivation of CIELAB/CIELUV
  - 6.7.2 Implementation and Use of CIELAB
- 6.8 Color Difference Equations
  - 6.8.1 CIELAB
  - 6.8.2 CIE DE2000
  - 6.8.3 Applications and Tolerances
- 6.9 Advanced Topics: Examples
  - 6.9.1 von Kries Chromatic Adaptation
  - 6.9.2 CIECAM02 Color Appearance



- 6.9.3 Gloss & Geometry: Definitions and Measurements
- 6.9.4 Gloss & Geometry: Applications
- 6.10 Applications: Examples
  - 6.10.1 Color Imaging
  - 6.10.2 Illumination
  - 6.10.3 Computer Graphics
  - 6.10.4 Material Formulation & Control

*Instructors:* The course will be coordinated and taught by the faculty of the RIT Program of Color Science and Munsell Color Science Laboratory led by Profs. Susan Farnand and Michael Murdoch with input from Profs. Mark Fairchild and Roy Berns.

*For information on how to register, see:*

[https://www.rit.edu/emcs/ptgrad/parttime\\_questions.php](https://www.rit.edu/emcs/ptgrad/parttime_questions.php)

[https://www.rit.edu/academicaffairs/registrar/sites/rit.edu/academicaffairs/registrar/files/non-degree\\_enrollment\\_form\\_92713.pdf](https://www.rit.edu/academicaffairs/registrar/sites/rit.edu/academicaffairs/registrar/files/non-degree_enrollment_form_92713.pdf)

**FAQ for Non-Matriculated Students:**

**Can I take classes at RIT without being officially admitted to a degree program?**

Yes. To take a class at the graduate level on a non-matric status usually requires permission from the dept. To take a class at the undergraduate level on a non-matric status usually requires completion of any pre-requisite OR a professor's approval. In both cases you must wait for the matriculated students to register for classes and then it is open registration for any non-matriculated students.

**How do I sign up for a class as a non-matriculated student?**

To complete a registration form for classes as a non-matriculated student, complete the Non-Degree Enrollment form through the Registrar's office.

*For More Information:*

Contact **Valerie Hemink** for more information or help in registering. <[vlhpci@rit.edu](mailto:vlhpci@rit.edu)> 585-475-7189