Optics and Optical Engineering Curriculum (Math 16X Series Sequence)

For Class of 2019 and Beyond

Freshman Year (~30 Credits)

Fall	Credits	Spring	Credits
MTH 161 (Calculus I)	4	**MTH 162** (Calculus II)	4
CHM 137 (Chemistry for Engineers)	4	**PHY 121** (Mechanics)	4
WRT 105* or Cluster Course #1	4	**WRT 105*** or Cluster Course #1	4
OPT 101 (Recommended)	4	**OPT 211** (MATLAB for Optics Majors I)	2
Total Credits	16	Total Credits	14

*Students not enrolled in WRT 105 in the fall should take cluster course #1. Students enrolled in WRT 105 in fall should take cluster course #1 in the spring.

Sophomore Year (~36 Credits)

Fall	Credits	Spring	Credits
OPT 241 (Geometrical Optics)	4	**OPT 261** (Interference and Diffraction)	4
OPT 201 (Geometrical Optics Lab)	2	**OPT 202** (Physical Optics Lab)	2
MTH 164 (Multidimensional Calculus)	4	**OPT 287** (Math Methods for Optics and Physics)	4
PHY 122/122P (Electricity and Magnetism)	4	**PHY 123** (Waves and Modern Physics)	4
Choose from: Cluster/Tech/Free/Plus One	4	Choose from: Cluster/Tech/Free/Plus One	4
Total Credits	18	Total Credits	18

Junior Year (~32 Credits)

Fall	Credits	Spring	Credits
OPT 242 (Aberrations and Testing)	4	**OPT 223** (Quantum Theory)	4
OPT 203 (Aberrations and Testing Lab)	2	**OPT 225** (Sources and Detectors)	4
OPT 262 (Electromagnetic Theory)	4	**OPT 204** (Sources and Detectors Lab)	2
MTH 165 (Linear Algebra w/ Diff. Equations)	4	**ECE 210*** (Circuits for Engineers)	4
OPT 212 (MATLAB for Optics Majors II)	2	**WRT 273*** (Communicating your Prof. Identity)	2
Total Credits	16	Total Credits	16

* ECE 210 and WRT 273 may be taken junior or senior year

Senior Year (~32 Credits)

Fall	Credits	Spring	Credits
OPT 310 (Senior Design I) Optical Eng Majors **OPT 320** (Senior Thesis I) Optics Majors	4	**OPT 311** (Senior Design II) Optical Eng Majors **OPT 321** (Senior Thesis II) Optics Majors	4
Choose from: Cluster/Tech/Free/Plus One	4	Choose from: Cluster/Tech/Free/Plus One	4
Choose from: Cluster/Tech/Free/Plus One	4	Choose from: Cluster/Tech/Free/Plus One	4
Choose from: Cluster/Tech/Free/Plus One	4	Choose from: Cluster/Tech/Free/Plus One	4
Total Credits	16	Total Credits	16

Optics and Optical Engineering Degrees Consist of 130 Total Credits Distributed as Follows:

Four Math Courses	**16**	**Nine Optics Core Classes**	**36**
Three Physics Courses	**12**	**Four Optics Labs**	**8**
One Chemistry Course	**4**	**Three Technical Electives**	**12**
Two Writing Courses	**6**	**Three Cluster Courses (Choose a cluster from humanities or social sciences)**	**12**
One Circuits Course (ECE 210 preferred, ECE 111 *and* ECE 113 suitable substitutes)	**4**	**A single course either humanities or social science depending on cluster**	**4**
Two MATLAB Courses	**4**	**Three Free Electives (can be either technical or non-technical courses)**	**12**

Note: Students who take OPT 101 only need to take two free electives

For Additional Information Contact:
Daniel Smith, Optics Undergrad Program Mgr
daniel.smith@rochester.edu

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