



# College of Optical Sciences Course List

## Undergraduate Courses

200	Light, Color and Vision (3) Fall & Spring	Nofziger
201R	Geometrical and Instrumental Optics I (3) Fall, P, MATH 125, 129 PHYS 141, MSE110	Nofziger
201L	Geometrical and Instrumental Optics Lab I (1) Fall, P, CR 201R	Nofziger
202R	Geometrical and Instrumental Optics II (3) Spring, P, OPTI 201R	Peng
202L	Geometrical and Instrumental Optics Lab II (1) Spring, P, CR OPTI 202R	Nofziger
221	Mechanical Design in Optical Engineering I (3) Last Offered Fall 2006	Stone
222	Mechanical Design in Optical Engineering II(3) Last Offered Spring 2007	Stone
240	Semiconductor Physics & Lasers (3) Spring, P, PHYS241, CR Math 254	Fallahi
280	Computer Programming (1) Spring	Pau
299/H	Independent Study (1-4)/Honors (1-3) Fall & Spring	All Professors
300	Practical Optics (3) Fall, P, PHYS 241 Coming Soon	Dereniak
310	Physical Optics I (3) Fall, P, MATH 223, 254, PHYS 241, OPTI 280	Kolesik
330	Physical Optics II (3) Spring, P, OPTI 310	Ashok
340	Optical Design (3) Spring, P, OPTI 201R, 202R, 310	Takashima
360	Electronics for Optical Engineers and Scientists (3) Last Offered Spring 2008	Shoemaker
370	Lasers and Photonics (3) Spring, P, OPTI 240, OPTI 310	Binder
380A	Intermediate Optics Laboratory I (1) Fall, P, CR OPTI 310, 370	Milster
380B	Intermediate Optics Laboratory II (1) Spring, P, CR OPTI 330, 340, 360	Nofziger
392	Directed Research (1-3) Fall, Spring & Summer	All Professors
399/H	Independent Study (1-6)/Honors(1-3) Fall, Spring & Summer	All Professors
404	MSE: Optical Spectroscopy of Materials (3) Spring, P, Phys 141, Math 223, MSE 110, MSE 320	Potter
406	Radiometry, Sources and Detectors (3) Fall, P,OPTI 201R+L,360,380B or equiv	Barrett/Dubin
414	Optical Instrumentation (3) Fall, P OPTI 340	Liang
414A	ECE: Photovoltaic Solar Energy Systems (3) Spring	Kostuk
415	Optical Specifications, Fabrication & Testing (3) Spring P, OPTI 201R, 202R, 310, 330, 340	Schwiegerling
415L	Optical Specifications, Fabrication & Testing Lab (1)	Schwiegerling
416	Modern Astronomical Optics (3) Spring	Guyon
421	Introductory Optomechanical Engineering (3) Fall	Burge
421L	Introductory Optomechanical Engineering Laboratory (1) Fall	Burge
422	Biomedical Optic Instruments (3) Fall Effective 2012	Peng
423	Optomechanical Design and Analysis (3) Spring, P, OPTI 421	Burge
423L	Optomechanical Design and Analysis Lab (2) Spring	Burge
424A	Optical Systems Engineering (3) Spring	Dubin/Burge
425	MSE: Sol-Gel Science (3) Fall	Loy
429	Integrated Optics for Information Technology (3) Fall	Fallahi
430	Optical Communication Systems (3) Fall, P, SIE 305, ECE 340, 352 & 381 or equiv	TBD
434	MSE: Electrical and Optical Properties of Materials (3) Fall, P, PHYS 241	Potter
435	Visual Optics (3) Fall, P, OPTI 202R, 330	Schwiegerling
441	Introduction to Lasers (3) Fall, P, OPTI 370	Maes
447	Optical Physics (3) Spring, P, Phys241, Math223, 254, 322, Opti280, 310, 330	Wright
471A	Adv. Optics Laboratory (2) Fall, P, OPTI 330, 360, 370, CR 400	Norwood
471B	Adv. Optics Laboratory (2) Spring, P, OPTI 471A	Hua
475	Optical Thin Films (3) Spring P, OPTI 310	Macleod
485	Illumination Engineering (3) Spring	Koshel
487	Fiber Optics Laboratory (3) Spring, P, ECE 456 or consent of instructor (Last Offered 2007)	Kostuk
489	Optics Outreach (1) Fall, Spring	Erwin
490	REM: Remote Sensing for the Study of Planet Earth (3) Spring	Leeuwen
492	Directed Research (1-6) Fall, Spring & Summer	All Professors
493	Directed Research (1-12) Fall, Spring & Summer	Maes
499/H	Independent Study (1-6) / Honors (3) Fall & Spring	All Professors

## Other Required Undergraduate Courses

ENGR 102	Introduction to Engineering	TBD
ECE 207	ECE: Elements of Electrical Engineering (3)	Tharpe
ENGR498A	Cross-disciplinary Design (3) Fall	TBD
ENGR498B	Cross-disciplinary Design (3) Spring	TBD



# College of Optical Sciences Course List

## Graduate Courses

500	Waves in Nature (3) Spring	Maes
500A/B/C	Photonic Communications Engineering I (3) Fall	Kost
500D/E/F	Photonic Communications Engineering II (3) Spring, P, OPTI 500A/B/C	Kost
501	Electromagnetic Waves (3) Fall, P, PHYS 241, MATH 223	Mansuripur
502	Optical Design and Instrumentation (3) Fall, P, PHYS 142, 241	Greivenkamp
502L	Fundamentals of Applied Optics Lab (1) Fall, P or C, OPTI 502	Su/Burge
503	Optical Design and Instrumentation II (3) Spring, P, OPTI 502	Greivenkamp
503A	Mathematical Methods for Optics & Photonics (3) Spring	Mansuripur
503B	Software Tools for Photonics (3) Spring	He
504	MSE: Optical Spectroscopy of Materials (3) Spring	Potter
505R	Diffraction and Interferometry (3) Spring, P, Opti 501, 512R or 604	Milster
505L	Fundamentals of Physical Optics Lab (1) Spring, P, OPTI 501 or 505R	Milster
506	Radiometry, Sources and Detectors (3) Fall, P, OPTI 340 or 502	Barrett
507	Solid-State Optics (3) Fall, P, PHYS 371 or OPTI 511R	Binder
508	Probability and Statistics in Optics (3) Spring, P, OPTI 501	Kupinski
509	Statistical Optics (3) Fall, P, OPTI 501, 508 or consent	Ashok
510R	Photonics (3) Spring, P, OPTI 501, 505R, 507, 511R	Pau/Norwood
511L	Lasers and Solid-State Devices Lab (1) Fall, P, OPTI 511R, 507	Jones
511R	Optical Physics & Lasers (3) Spring, P, OPTI 501	Jones
512R	Linear Systems, Fourier Transforms (3) Fall, P, MATH 223, PHYS 142, 241	Tyo
512L	Mathematical Optics Lab (1) Fall, P, OPTI 512R or 604 + CSC 227 or SIE 270	Kupinski
513R	Optical Testing (3) Fall, P, OPTI 505R	Wyant
513L	Optical Testing Lab (1) Fall, P, CR OPTI 513R	Wyant
514	Optical Instrumentation (3) Fall	Liang
514A	ECE: Photovoltaic Solar Energy Systems (3) Spring	Kostuk
515	Optical Specifications, Fabrication & Testing (3) Spring	Schwiegerling
515L	Optical Specifications, Fabrication & Testing Lab (1) Spring	Schwiegerling
516	Modern Astronomical Optics (3) Spring	Guyon
517	Lens Design (4) Fall, P, OPTI 502, 509	Sasian
518	Introduction to Aberrations (3) Spring, P, OPTI 502	Sasian
519	ASTR: Adaptive Optics (1), Last Offered Spring 2003	TBD
520	MSE: Optical Materials for Solid-State Laser Systems, Last Offered Spring 2006	TBD
521	Introductory Opto-Mechanical Engineering (3) Fall	Burge
521L	Introductory Opto-Mechanical Engineering Laboratory (1) Fall	Burge
522	Biomedical Optic Instruments (3) Fall (Effective 2012)	Peng
523	Optomechanical Design and Analysis (3) Spring, P, OPTI 521	Burge
523L	Optomechanical Engineering Lab (2) Spring	Burge
524A	Optical systems Engineering (4) Spring	Dubin/Burge
525	MSE: Sol-Gel Science (3) Fall	Loy
526	Optical Design in Multiscale Photonic System (3) Fall, P, OPTI 502, 505R, 512R soon	Takashima
527	Holography and Diffractive Optics (3) Fall, P, OPTI 502, 505R	Kostuk
529	Integrated Optics for Information Technology (3) Fall	Fallahi
530	Optical Communication Systems (3) Fall, P, SIE 305, ECE 340, 352 & 381 or equiv	Cvijetic
531	Image Processing Lab for Remote Sensing (3) Last Offered Fall 2007	Thome
532	ECE: Digital Image Analysis (3) Fall, P, ECE 340 or OPTI 512R (or instructor consent)	Rodriguez
533	ECE: Digital Image Processing (3) Fall, P, ECE 340, 503, 529 or OPTI 512R	Bilgin
534	MSE: Advanced Topics in Optical & Electronic Materials (3) [OPTI Never Scheduled]	Potter
535	Visual Optics (3) Fall, P, OPTI 502, 512R	Schwiegerling
536	Introduction to Image Science (3) Spring	Gmitro/Barrett/Furenlid
537	Imaging Physics and Devices (3) Fall, P, OPTI 501, 511R or equivalent	Furenlid
539A	From Photonics Innovation to the Marketplace (3) Odd Spring	Norwood
540	PHYS: Medical Physics (3) Fall, P, PHYS103 or 132 or OPTI 330	Roehrig
541	Introduction to Lasers (3) Fall, P, OPTI 511R	Maes
544	Foundations of Quantum Optics (3) Spring P, OPTI 543 of 570A	Jessen
546	Physical Optics (3) Spring P, OPTI 501	Wright
547	The Beam Propagation Method (3) Spring effective 2013P, OPTI 501, 512R, or 546	Kolesik
548	Optical Properties of Solids (3) Last Offered Spring 2009	Binder
549	Atom Optics (2)	Anderson



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553	Nonlinear Photonics (3) Even Spring	Norwood
561	PHYS: Physics of Semiconductors (3) Spring P, OPTI 507 or PHYS 460, 570a,b	Binder
562	Functional Nanostructures (3) Spring	Khitrova
566	Optical Detectors & Detector Systems (3)	Dereniak
570A	Quantum Mechanics (3) Fall P, PHYS 371 or equiv	Anderson
573	PHYS: Atomic Spectroscopy for Experimentalists (3) Fall	Bickel
574	PHYS: Atomic Physics for Experimentalists (3) Spring, P, PHYS 573	Bickel
575	Optical Thin Films (3) Spring ,Online, P, OPTI 505R	Macleod
576	Thin Film Optics (3) Fall	Falco
577	Advanced Optical Interference Coatings (3) Spring, P, OPTI 575	Kruschwitz
578	PHYS: Laser Spect & Atomic Structure (4) Fall	Cronin
581A	Early Stage Technologies for Commercial Potential [Never Scheduled as OPTI]	TBD
583	Computational Optics (3) TBD Spring	Kolesik
585	Illumination Engineering (3) Spring	Koshel
586	Polarization in Optical Design (3) Fall, P, OPTI 502	Chipman
586L	Polarization in Optical Design (1) Fall	Chipman
587	Fiber Optics Laboratory (3) Last Offered Spring 2007	Kostuk
587L	Photonic Communications Laboratory (1) Spring	Kieu
588	Introduction to Display Science & Technology (3) Fall, P, OPTI 502	Hua
589	Optics Outreach Laboratory (1) Fall, Spring	Erwin
590	REM: Remote Sensing for the Study of Planet Earth (3) Spring	Leeuwen
595A	Current Subjects in Optics-Colloquium (1) Fall, Spring	Tyo (2012)
596C	Aberrated Imaging and Propagation (3) Fall, P, OPTI 502, 509 [Last Offered 2011]	Mahajan
596E	PHYS: Issues in Science and Technology Policy (3), [Never Scheduled as OPTI, PHYS 2002]	TBD
597A	Optical Shop Practices (3) Spring P, OPTI 201R or 502	Sasian
597B	Technical Writing and Communication (3) Fall	MacPherson
599	Independent Study (1-5)	All Professors
604	Math. Methods for Optics (3) Fall, P, MATH 223, PHYS 142, 241	Clarkson
617	Advanced Optical Design (3) Spring, P, OPTI 517	Liang
623	Polarized Light & Polarimetry (3) Spring	Chipman
626	Diode Lasers and Opto-Electronics (3) Spring P, OPTI 501 Last Offered 2007	Fallahi
630	Biomedical Optics & Biophotonics (3) Fall	Gmitro/Utzinger/Barton
632	ECE: Advanced Optical Communication Systems (3) Spring	Djordjevic
634	ECE: Computational Sensing: Spectroscopy (3) Spring	Gehm
636	Noise in Imaging Systems (3) Fall P, OPTI 508, 512R	Kupinski
637	Principles of Image Science (3) Spring P, OPTI 512R, 508	Clarkson
638	Advanced Medical Imaging (3) Spring, P, OPTI 512R or equivalent	Gmitro/Furenlid
646	Introduction to Quantum Information and Computation (3) Odd Years Spring	Jessen
648	Advanced Optical Physics (3) Last Offered Spring 2007	Jessen
656A	ATMO: Atmospheric Radiation and Remote Sensing A (3) Last Offered Fall 2006	TBD
656B	ATMO: Atmospheric Radiation and Remote Sensing B (3) Spring	Kursinski
671	Advanced Optical Networks (3) Spring effective 2013	Cvijetic
677	Microfabrication in Opto-Electronics (2) Fall	Fallahi
680	Microcomputer Interfacing in the Optics Lab (3) Last Offered Fall 2007	To be Discontinued
690	Introduction to Optical Mechanical Design (2) Last Offered Spring 2005	To be Discontinued
696B	Practical Optics Seminar (1) Last Offered Fall 2008	To be Discontinued
696C	Practical Optics (1) Last Offered Spring 2009	To be Discontinued
696D	Practical Optics: Engineering Optical Systems (1) Fall	Dubin/Burge
900	Research (1-8)	All Professors
909	Master's Report (1-3)	All Professors
910	Thesis (1-8)	All Professors
920	Dissertation (1-9)	All Professors