

OPTOMECHANICAL ENGINEERING SUB-PLAN REQUIREMENTS

SUB-PLAN CORE COURSES- 15 UNITS

Core Courses	Units
OPTI 502 Optical Design & Instrumentation I	3
OPTI 521 Introductory Optomechanical Engineering	3
AME 552 Planar Multi-body Dynamics with Applications	3
OPTI 523 Optomechanical Design & Analysis	3
ASTR 518 Instrumentation and Statistics	3

SUB-PLAN DESIGN COURSES- 3 UNITS

Design Courses	Units
OPTI 516/ASTR 516, Modern Astronomical Optics	3
OPTI 517 Lens Design	4
OPTI 585 Illumination Engineering	3
OPTI 586 Polarization in Optical Design	3
OPTI 588 Introduction to Display Science and Technology	3
OPTI 600A Photonics in Lens Design	1
OPTI 526 Optical Design in Multiscale Photonics Systems	2

SUB-PLAN ELECTIVES- 6 UNITS FOR THESIS OR 14 UNITS FOR NON-THESIS

TWO ELECTIVES MUST BE LAB COURSES

Elective Lab Courses	Units
OPTI 502L Fundamental of Applied Optics Laboratory	1
OPTI 515L Optical Specifications, Fabrication, and Testing Laboratory	1
OPTI 521L Introductory Optomechanical Engineering Laboratory	1
OPTI 523L Optomechanical Engineering Laboratory	2
OPTI 524A Optical Systems Engineering	4
OPTI 569L System Programming for Engineers	2
OPTI 597A Optical Shop Practices	3

Elective Courses	Units
AME 549 Hybrid Control Systems	3
AME 550 Advanced Dynamics	3
AME 553 Computation Multi-Body Dynamics	3
AME 560 Advanced Vibration	3
AME 561/EM 561 Finite Element Methods	3
AME 562 Composite Materials	3
AME 565 Design Optimization	3
AME 588/ABE 588/BE 588 Micro and nano transducer physics & design	3
AME 589A/ABE 589A/BE 589A Fabrication Techniques for Micro-& Nano-devices	3
BE 547 Sensors and Controls	3
BME 517/ ECE 517 Measurement and Data Analysis in Biomedical Engineering	3

Elective Courses Continued	Units
BME 520/ OPTI 520 Biophotonics	3
BME 566 Biomedical Engineering	3
BME 585 Nanoscience & Nanotechnology for Biomedical Engineer	3
CHEE 583 Introduction to Polymeric Materials	3
ECE 504 /MSE 504 Optical Spectroscopy of Materials	3
ECE 515/ CHEE 515 Microelectronics Manufacturing and the Environment	3
ECE 529 Digital Signal Processing	3
ECE 532 Digital Image Analysis	3
ECE 533 Digital Image Process	3
ECE 542 Digital Control Systems	3
ECE 556 Optoelectronics	3
EM 502/ CE 502 Introduction to Finite Element Methods	3
EM 504 Elasticity Theory and Application	3
EM 634 Advanced Structural Dynamics	3
OPTI 503 Optical Design and Instrumentation II	3
OPTI 505R Diffraction and Interferometry	3
OPTI 512R Linear Systems, Fourier Transforms	3
OPTI 513R Optical Testing	3
OPTI 518 Introduction to Aberrations	3
OPTI 528 Adaptive Optics and Imaging through Random Media	3
OPTI 581A/ENTR 581A Assessing Early Stage Medical Technologies for Commercial Potential	2
OPTI 617 Practical Optical System Design	3
OPTI 630/BME 630 Biomedical Optics and Biophotonics	3
OPTI 677 Micro/Nano-Fabrication in Optoelectronics	2
OPTI 696A Advanced Lens Design	3
SIE 506 Quality Engineering	3
SIE 511 Human-Machine Interaction	3
SIE 514 Law for Engineers & Scientists	3
SIE 515 Technical Sales & Marketing	3
SIE 554A Systems Engineering Process	3
SIE 555 Sensor Systems Engineering	3
SIE 556 Fundamentals of Guidance for Aerospace Systems	3
SIE 557 Project Management	3
SIE 558 Model-Based Systems Engineering	3
SIE 563 Integrated Logistics and Distribution Systems	3
SIE 564 Cost Estimation	3
SIE 583 Computer Integrated Manufacturing Systems	3

OPTOMECHANICAL ENGINEERING SUB-PLAN PLANNER

THESIS TRACK (32 UNITS)

CORE COURSES

Core Courses	Units	Term
OPTI 502, Optical Design & Instrumentation I	3	
OPTI 521, Introductory Optomechanical Engineering	3	
AME 552, Planar Multi-body Dynamics with Applications	3	
OPTI 523, Optomechanical Design & Analysis	3	
ASTR 518, Instrumentation and Statistics	3	
TOTAL CORE UNITS	15	

DESIGN COURSES

Design Course(s)	Units	Term
TOTAL DESIGN UNITS	3	

ELECTIVE COURSES / 2 LABS ARE REQUIRED

Lab Courses	Units	Term
Additional Elective Courses	Units	Term
TOTAL ELECTIVE UNITS	6	

THESIS UNITS

Thesis Course	Units	Term
TOTAL THESIS UNITS	8	

TOTAL UNITS FOR DEGREE	32
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OPTOMECHANICAL ENGINEERING SUB-PLAN PLANNER

NON-THESIS TRACK (35 UNITS)

CORE COURSES

Core Courses	Units	Term
OPTI 502, Optical Design & Instrumentation I	3	
OPTI 521, Introductory Optomechanical Engineering	3	
AME 552, Planar Multi-body Dynamics with Applications	3	
OPTI 523, Optomechanical Design & Analysis	3	
ASTR 518, Instrumentation and Statistics	3	
TOTAL CORE UNITS	15	

DESIGN COURSES

Design Course(s)	Units	Term
TOTAL DESIGN UNITS	3	

ELECTIVE COURSES / 2 LABS ARE REQUIRED

Lab Courses	Units	Term
Additional Elective Courses	Units	Term
TOTAL ELECTIVE UNITS	14	

NON-THESIS UNITS

Non-Thesis Course	Units	Term
OPTI 909-Master's Report <i>OR</i> OPTI 597B- Technical Writing	3	
TOTAL NON-THESIS UNITS	3	

TOTAL UNITS FOR DEGREE	35
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