

2012 – 2014 CHEMICAL ENGINEERING TECHNICAL OPTION AREA LIST

AREA 1, PROCESS SYSTEMS AND PRODUCT ENGINEERING

CHE 341, *Design for Environment*
CHE 342, *Chemical Engineering Economics and Business Analysis*
CHE 356, *Optimization: Theory and Practice*
CHE 376K, *Process Evaluation and Quality Control*
E E 370K, *Computer Control Systems*
E E 379K, *Topic: Statistical Quality Control*
ARE 323K, *Project Management and Economics*
M E 335, *Engineering Statistics*
M E 348D, *Introduction to Mechatronics II*
M E 353, *Engineering Economics Analysis*
M E 366L, *Operations Research Models*
MKT 320F, *Foundations of Marketing*
I B 378, *International Business Operations*
MKT 460, *Information and Analysis*
Upper-division mathematics course

AREA 2, Materials Engineering

CH 341, *Special Topics in Laboratory Chemistry*
CH 354, *Quantum Chemistry and Spectroscopy*
CH 354L, *Physical Chemistry II*
CH 367L, *Macromolecular Chemistry*
CH 376K, *Advanced Analytical Chemistry*
CHE 322M, *Molecular Thermodynamics*
CHE 323, *Chemical Engineering for Microelectronics*
CHE 355, *Introduction to Polymers*
CHE 379, *Topic: Computation Methods with Applications to Materials*
CHE 379, *Topic: Polymer Kinetics and Reaction Engineering*
E E 339, *Solid-State Electronic Devices*
M E 349, *Corrosion Engineering*
M E 359, *Materials Selection*

M E 374S, *Solar Energy Systems Design*
M E 378C, *Electroceramics*
M E 378S, *Structural Ceramics*
PHY 338K, *Electronic Techniques*
PHY 355, *Modern Physics for Engineers*
PHY 375S, *Introductory Solid-State Physics*

AREA 3, Environmental Engineering

C E 341, *Introduction to Environmental Engineering*
C E 342, *Water and Wastewater Treatment Engineering*
C E 346K, *Hazardous Waste Management*
C E 364, *Design of Wastewater and Water Treatment Facilities*
C E 369L, *Air Pollution Engineering*
C E 370K, *Environmental Sampling and Analysis*
CHE 341, *Design for Environment*
CHE 357, *Technology and Its Impact on the Environment*
CHE 359, *Energy Technology and Policy*
CHE 376K, *Process Evaluation and Quality Control*
M E 374S, *Solar Energy Systems Design*
M E 379M, *Energy Technology and Policy*

AREA 4, BIOCHEMICAL, BIOMOLECULAR, AND BIOMEDICAL ENGINEERING

Track A: Cellular and Bioprocess Engineering

BIO 311D, *Introductory Biology II*
BIO 325, *Genetics*
BIO 326R, *General Microbiology: Microbial Cell Structure and Genetics*
CHE 339, *Introduction to Biochemical Engineering*
CHE 339P, *Introduction to Biological Physics*
CH 339K, *Biochemistry I*
CH 339L, *Biochemistry II*
CH 370, *Physical Methods for Biochemistry*

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Track B: Biomedical Engineering

BIO 311D, *Introductory Biology II*
BIO 320, *Cell Biology*
BIO 325, *Genetics*
BIO 326R, *General Microbiology: Microbial Cell Structure and Genetics*
BIO 365R, *Vertebrate Physiology I*
BIO 365S, *Vertebrate Physiology II*
BME 352, *Advanced Engineering Biomaterials*
BME 353, *Transport Phenomena in Living Systems*
BME 365R, *Quantitative Engineering Physiology I*
CHE 339, *Introduction to Biochemical Engineering*
CHE 339P, *Introduction to Biological Physics*
CHE 339T, *Cell and Tissue Engineering*
CHE 355, *Introduction to Polymers*
CH 339K, *Biochemistry I*
E E 374K, *Biomedical Electronics*
M E 354, *Introduction to Biomechanical Engineering*

AREA 5, ENERGY TECHNOLOGIES

CHE 323, *Chemical Engineering for Microelectronics*
CHE 339, *Introduction to Biochemical Engineering*
CHE 341, *Design for Environment*
CHE 355, *Introduction to Polymers*
CHE 357, *Technology & Its Impact on the Environment*
CHE 359, *Energy Technology and Policy*
C E 341, *Intro to Environmental Engineering*
E E 339, *Solid-State Electronic Devices*
M E 374S, *Solar Energy Systems Design*
M E 379M, *Energy Technology and Policy*
PGE 305, *Energy and the Environment*

AREA 6, ENGINEERING ECONOMICS AND BUSINESS

LEADERSHIP

CHE 342, *Chemical Engineering Economics and Business Analysis*
CHE 356, *Optimization: Theory and Practice*
ARE 323K, *Project Management and Economics*
ECO 304K, *Introduction to Microeconomics*
ECO 304L, *Introduction to Macroeconomics*
ECO 328, *Industrial Organization*
ECO 339K, *International Trade and Investment*
ECO 351K, *Current Issues in Business Economics*
I B 378, *International Business Operation*
M E 353, *Engineering Economics Analysis*
M E 366L, *Operations Research Models*
MKT 320F, *Foundations of Marketing*
MKT 460, *Information and Analysis*
STS 332, *The Nanotechnology and Science Revolution*