

B.S. - METALLURGICAL ENGINEERING

Advisory Summary and Checklist
2006-2007 Academic Year Requirements

The minimum number of credits for the degree is **132**, exclusive of Engl 101 and mathematics courses numbered lower than Math 170. A total of 18 credits of General Core Studies are required. 7 credits of Core Discovery are required. Core 113 or Core 108 or Core 104 is recommended in the fall semester earning 4 social science credits. Core 163 or Core 158 or Core 154 is recommended in the spring semester earning 3 humanities credits. Core 163 is second semester of Core 113. Core 158 is second semester of 108 and Core 154 is second semester of Core 104. 8-9 credits of general core electives are required from the **same cluster** with one of the courses being an upper division level and one an international course. The Professionalism, Society and Ethics cluster is recommended. Finally, Met 414 fulfills the capstone requirement. 7 credits of Core, 8-9 credits from 1 cluster (upper division course and international course), and 3 credits from the capstone course meet or exceed the 18 credit minimum of general core studies.

Freshman Year - Fall Semester

Course	Title	Credits	Complete
Chem 111	Principles of Chemistry I	4	
Core	Core 113 or 108 or 104 Recommended(Soc. Science)	4	
Engl 102	Essay Writing	3	
Math 170	Analytical Geom & Calculus I	4	
Met 101	Intro to Metallurgy & Materials	2	
Total		17	

Freshman Year - Spring Semester

Course	Title	Credits	Complete
Chem 112	Principles of Chemistry II	5	
Core	Core 163 or 158 or 154 Recommended (Humanities)	3	
CS 112	Intro/Problem Solving & Programming	3	
Math 175	Analytical Geom & Calculus II	4	
Phys 211	Engineering Physics I	4	
Total		19	

Sophomore Year - Fall Semester

Course	Title	Credits	Complete
	Amst 301 or Phil 103 (Humanities)	3	
Engr 105	Engineering Graphics	2	
Math 275	Analytical Geom & Calculus III	3	
Met 201	Elements of Materials Science	3	
Phys 212	Engineering Physics II	4	
	Core Studies-Same Cluster (Upper Division/International?)	2-3	
Total		17-18	

Sophomore Year - Spring Semester

Course	Title	Credits	Complete
Econ	Econ 201 or 202 or 272 (Soc. Science)	3/4	
Engr 210	Engineering Statics	3	
Engr 240	Intro to Electrical Circuits	3	
Math 310	Ordinary Differential Equations	3	
Stat 301	Probability and Statistics	3	
Total		15-16	

Junior Year - Fall Semester

Course	Title	Credits	Complete
Chem 305	Physical Chemistry	3	
Engr 350	Engr. Mechanics of Materials	3	
Met 313	Physical Metallurgy-Offered Even Years	4	
Met 341	Particulate Materials Processing	4	
Met 423	Corrosion	3	
Total		17	

Junior Year - Spring Semester

Course	Title	Credits	Complete
Engl 317	Technical Writing	3	
Met 308	Thermodynamics of Materials	3	
Met 309	Transport Phenom. for Design	4	
Met 412	Mechanical Behavior of Materials	3	
Met 413	Phase Equilibria in Materials	3	
Total		16	

Senior Year - Fall Semester

Course	Title	Credits	Complete
Met 407	Materials Fabrication	3	
Met 417	Instrumental Analysis	3	
Met 442	Pyroprocessing of Materials	4	
	Technical Elective	6	
Total		16	

Senior Year - Spring Semester

Course	Title	Credits	Complete
Met 344	Hydroprocessing of Materials	4	
Met 414	Process Design	3	
Met 415	Materials Selection & Design	3	
Engr 360	Engr 360 Engineering Economy	2	
	Technical Elective	3	
Total		15	

Total: 132

MET TECHNICAL ELECTIVES (Revised 11/18/04)

Met 202 Microstructural Evaluation (2 cr. Offered on Demand)
 Met 204 Special Topics (Credit Arranged)
 Met 299 Directed Study (Credit Arranged)
 Met 400 Seminar (Credit Arranged)
 Met 404 Special Topics (Credit Arranged)
 Met 406 Treatment Technology for Recycled Waste (3 cr. Offered on Demand)
 Met 410 Plasma Processing of Materials (3 cr. Fall)
 Met 421 Light Metals (3 cr. Spring Even Years)
 Met 427 Ceramic Materials (3 cr. Fall)

NOTE: Highlighted courses offered semester shown only.

Met 429 Melting, Casting & Powder Met (3 cr. Spring Odd Years)
 Met 434 Fundamentals of Polymers (3 cr. Fall)
 Met 480 TEM of Materials (3 cr. Fall)
 Met 499 Directed Study (Credit Arranged)
 MSE 430 Elect., Opt., and Mag. Prop. Mat's (3 cr. Spring)
 MSE 432 Fundamentals of Thin Film Fab. (3 cr Fall Odd Years)
 MSE 463 Mech. Of Mats. Process (3 cr. Offered on Demand)
 MSE 486 Solid State Electronics (3 cr.)-See ECE 466 Semiconductor Devices (3 cr. Fall)
 MSE 498 Internship (Credit Arranged)