**Proposed appearance of the Biomaterials Engineering Option in the NM Tech Course Catalog**

Bachelor of Science Degree in Materials

Engineering with Biomaterials Engineering Option

Minimum credit hours required—130

In addition to the General Education Core Curriculum (page

89), the following courses are required:

•MATH 231 (4), 335 (3)

•ES 110 (2), 111 (3), 201 (3), 302 (3), 332 (3) or EE 211 (3)

•MATE 101L (1), 202 & 202L (4), 235 & 235L (4), 301 (3)

314 (3), 350 (3), 351 (3), 481 (3), 482 (3)

•METE 327 (3)

•Two of the following: MATE 310 (3),311 (3), 410 (3)

•BIOL 111, 111L (4), BIOL 331 (3), BIOL 333,333L (4), MATE 4xx/5yy\*\* (3).

•Technical electives (6): Suggested electives include BIOL 341 (3), 351 (3); CHE 473 (3); CHEM 333, 333L (4), 334, 334L (4); MATE 445 (3), 470 (3); MATH 283 (3), 382 (3), MENG 460 (3), 465 (3), 489 (3), 576 (3). Alternative or additional technical electives must be approved by the Department Chair.

\*\* MATE 4xx/5yy is being taught and developed during the Spring 2013 semester as MATE 581-06.

Sample Curriculum for the Bachelor of Science in

Materials Engineering with Biomaterials

Engineering Option

Semester 1

1 MATE 101L (Intro. Materials Lab)

3 ENGL 111 (College English 1)

4 MATH 131 (Calculus 1)

4 CHEM 121 & 121L (General Chemistry 1)

3 Social Science

2 ES 110 (Intro. to Engineering)

17 Total credit hours

Semester 2

3 ENGL 112 (College English 2)

4 MATH 132 (Calculus 2)

4 CHEM 122 & 122L (General Chemistry 2)

3 ES 111 (Computer Programming)

3 Social Science

17 Total credit hours

Semester 3

4 MATE 202 & 202L (General Materials 1)

4 MATH 231 (Calculus 3)

5 PHYS 121 & 121L (General Physics 1)

4 BIOL 111 & 111L (General Biology 1)

17 Total credit hours

Semester 4

3 MATH 335 (Applied Analysis)

5 PHYS 122 & 122L (General Physics 2)

4 MATE 235 & 235L (General Materials 2)

3 ES 201 (Statics)

3 Humanities

18 Total credit hours

Semester 5

3 METE 327 (Metals)

3 BIOL 331 (Cell Biology)

3 ES 302 (Mechanics of Materials)

3 MATE 350 (Materials Thermodynamics)

3 MATE 4xx/5yy (Biomaterials)

15 Total credit hours

Semester 6

3 MATE 311 (Thermal and Mechanical Properties)

3 MATE 314 (Transport Processes)

3 METE 326 (Process Metallurgy)

3 ES 332 or EE 211 (Electrical Engineering)

3 ENGL 341 (Technical Writing)

3 Humanities

18 Total credit hours

Semester 7

3 Technical Elective\*

3 Social Science/Humanities\*

3 Social Science/Humanities\*

3 MATE 481 (Senior Design 1)

3 MATE 410 (Microstructural Characterization)

15 Total credit hours

Semester 8

4 BIOL 333, 333L (Molecular Biology)

3 Technical Elective\*

3 MATE 482 (Senior Design 2)

3 Social Science/Humanities\*

13 Total credit hours

**Additional Course Catalog Changes**

MATE 481, 481L, Engineering Design I, 3 cr, 2 cl hrs, 3 lab

hrs

*Prerequisite:* Senior Standing, MATE 301, MATE 351, METE

327, MATE 310, MATE 311 (BIOL 111/111L may substitute  
for MATE 310 or 311 for students pursuing the Biomaterials  
Engineering option)

Student design teams begin a year-long capstone design

project. The teams will identify project needs, establish goals,

determine design requirements, produce alternate solutions,

and perform detailed planning. Project initiation, periodic

design reports and design reviews. Students, faculty, and

distinguished visitors discuss subjects of current and/or long-  
range interest in various fields of materials. Undergraduate

students majoring in Materials Engineering are required to

take MATE 481and MATE 481L concurrently. (Same as   
METE 481)