Computer Engineering

University Requirements (23-24)
Writing – American Thought and Language (ATL) 4
Integrative Studies in Humanities (IAH) 8
Integrative Studies in Social Sciences (ISS) 8
Bioscience (one of the following):
BS 110, BS 111, ENT 205, MMG 205,
MMG 301, PLB 105, PSL 250, ZOL 141 3-4

College Requirements (30)
CEM 141 General Chemistry 4
CSE 231 Introduction to Programming I 4
MTH 132 Calculus I 3
MTH 133 Calculus II 3
MTH 234 Multivariable Calculus 4
MTH 235 Differential Equations 4
1PHY 183 Physics for Scientists & Engineers I 4
1PHY 184 Physics for Scientists & Engineers II 4

Major Requirements (48)
CEM 161 Chemistry Laboratory I
OR
PHY 191 Physics Laboratory for Scientists I 1
CSE 232 Introduction to Programming II 4
CSE 260 Discrete Structures in Computer Science 4
CSE 410 Operating Systems 4
CSE 420 Computer Architecture 4
ECE 201 Circuits and Systems I 4
ECE 202 Circuits and Systems II 3
ECE 230 Digital Logic Fundamentals 3
ECE 280 Electrical Engineering Analysis 3
ECE 302 Electronic Circuits 3
ECE 303 Electronics Laboratory 1
ECE 313 Control systems 3
ECE 331 Microprocessors & Digital Systems 4
ECE 366 Introduction to Signal Processing 3
ECE 480 Senior Design 5
ME 201 Thermodynamics
OR
ME 221 Statics 3

Major Electives (8)
Complete one of the following three groups:

Hardware Emphasis
ECE 410 VLSI Design 4
ECE 411 Electronic Design Automation 4

Software Emphasis
CSE 370 Software Engineering 4
CSE 450 Translation of programming Languages 4

Communication Emphasis
CSE 422 Computer Networks 4
ECE 457 Communication Systems 3
ECE 458 Communication Systems Laboratory 1

Technical Electives (7-9)
An approved list of Technical Electives is available from the advisor.

Other Electives (Variable)

Total Credits Required for Degree 128

The requirements listed above apply to students admitted to the major of Computer Engineering in the Department of Electrical and Computer Engineering beginning Spring, 2004. The Department of Electrical and Computer Engineering (ECE) constantly reviews program requirements and reserves the right to make changes as necessary. Consequently, each student is strongly encouraged to consult with his/her advisor to obtain assistance in planning an appropriate schedule of courses. Students who have questions about Computer Engineering should contact the Electrical and Computer Engineering Department Advising Office, 2212 Engineering Building, phone (517) 355-5242.

Some courses may have prerequisites, which are not otherwise required in the program. Students should check course descriptions to ensure they are aware of prerequisites.

1 If PHY 231 is taken in place of PHY 183, PHY 233B must also be completed. If PHY 232 is taken in place of PHY 184, PHY 234B must also be completed.
**Program Objectives**

The computer engineering program provides its graduates with a solid foundation on which they can build successful and sustainable careers. Within the first several years following graduation, graduates of the computer engineering program will:

1. **have accrued an understanding of the discipline**, built on an exposure to a broad range of computer engineering topics including the latest and emerging techniques and technologies.

2. **have established expertise within the discipline** originating with in-depth study in selected curricular areas emphasizing the solution to engineering problems using proper tools, practical approaches, and creative problem solving.

3. **be engaged in lifelong learning** in computer engineering, based on a strong foundation in the core sciences and mathematics.

4. **have an appreciation for the global and societal impact of the discipline** through an exposure to contemporary issues, and a knowledge and respect for ethical standards and professional responsibilities.

5. **have successfully utilized essential professional skills** such as teamwork and communications, both oral and written, within the context of engineering problem solving and design.

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**Last revised November, 2003**