The concentration in Informatics requires 40 credit hours, including (a) three core courses for a total of 12 credits, (b) 4 courses in one of two flexible program tracks for a total of 14-16 credits, and (c) concentration electives for a total of 12-14 credits, depending upon the track selected. MATH 115, EECS 183 (or equivalent) and STATS 250 must be completed with a grade of C or better prior to declaring; SI/UC 110 can be completed with a C or better after declaring.

<table>
<thead>
<tr>
<th>Concentration Prerequisites</th>
<th>Concentration Core Courses [12 credits]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[4] STATS 250 Introduction to Statistics &amp; Data Analysis (or equivalent)</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concentration Track &amp; Elective Courses [28 total credits]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Mining &amp; Information Analysis Track [15-16 credits]</strong></td>
</tr>
<tr>
<td>Available to declare through June 30, 2015</td>
</tr>
<tr>
<td>[4] MATH 217 Linear Algebra (pre-requisite MATH 215)</td>
</tr>
<tr>
<td>[4] STATS 415 Data Mining and Statistical Learning</td>
</tr>
<tr>
<td><strong>One of the following quantitative courses:</strong></td>
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<tr>
<td>[3] MATH 471 Introduction to Numerical Methods</td>
</tr>
<tr>
<td>[3] MATH / STATS 425 Introduction to Probability</td>
</tr>
<tr>
<td>[4] IOE 310 Introduction to Optimization Methods</td>
</tr>
<tr>
<td>[3] IOE 510 / MATH 561 / OMS 518 Linear Programming I</td>
</tr>
<tr>
<td>[3] IOE 511 / MATH 562 Continuous Optimization Methods</td>
</tr>
<tr>
<td>[3] IOE 512 Dynamic Programming</td>
</tr>
<tr>
<td><strong>Informatics Electives [12-13 credits]</strong></td>
</tr>
<tr>
<td>Eight [8] credits must be at the 300 level or higher, and all electives must be selected in consultation with a faculty advisor.</td>
</tr>
</tbody>
</table>

| **Life Science Informatics [14-15 credits]**                                                                         |
| [4] BIOINF 527 Intro to Bioinformatics and Computational Biology                                                     |
| **One of the following life science courses:**                                                                        |
| [3] BIOLOGY 305 Genetics                                                                                             |
| [3] MCDB 310 Introductory Biochemistry                                                                               |
| **Two of the following computational / quantitative courses:**                                                        |
| [4] EECS 485 Web Database and Information Systems                                                                     |
| [3] STATS / BIOSTAT 449 Topics in Biostatistics                                                                       |
| **Informatics Electives [13 -14 credits]**                                                                           |
| Four [4] credits must be at the 300 level or higher, and all electives must be selected in consultation with a faculty advisor. |

For more information, please contact the program coordinator
734.615.3789
informatics@umich.edu
http://www.lsa.umich.edu/informatics

439 West Hall
1085 South University
Ann Arbor, MI 48109-1107

Effective Winter 2014

A n i n t e r d i s c i p l i n a r y m a j o r a t t h e
U N I V E R S I T Y O F M I C H I G A N
Informatics Electives [12-14 credits]

Data Mining & Information Analysis

12-13 credits needed — 8 credits at the 300 level or higher.

*BIOCHEM/BIOINF/BIOMEDE/PATH 551 Proteome Informatics
*BIOINF 527 Intro to Bioinformatics & Computational Biology
*BIOINF 545/STATS 545/BIOSTAT 646 Molecular Genetic and Epigenetic Data
MATH 547/BIOINF 547/STATS 547 Probabilistic Modeling in Bioinformatics
MATH/STATS 548 Computations in Probabilistic Modeling in Bioinformatics
BIOSTAT/STATS 449 Topics in Biostatistics
*CMPLXSYS 510 Introduction to Adaptive Systems
EECS 281 Data Structures and Algorithms
EECS 376 Foundations of Computer Science
EECS 382 Internet-scale computing
EECS 476 Theory of Internet Applications
EECS 477 Introduction to Algorithms
EECS 481 Software Engineering
EECS 484 Database Management Systems
EECS 485 Web Database and Information Systems
EECS 487 Interactive Computer Graphics
EECS 489 Computer Networks
EECS 492 Introduction to Artificial Intelligence
EECS 493 User Interface Development
HON 352 Cyberscience
*IE 510/MATH 561/OMS 518 Linear Programming I
*IE 511/Math 562 Continuous Optimization Methods
*IE 512 Dynamic Programming
MATH 416 Theory of Algorithms
MATH 425 Introduction to Probability
MATH 433 Introduction to Differential Geometry
MATH 451 Advanced Calculus I
MATH 462 Mathematical Models
MATH 463 Math Modeling in Biology
MATH 471 Introduction to Numerical Methods
MATH 525 Probability Theory
MATH 526 Discrete State Stochastic Processes
MATH 550 Introduction to Adaptive Systems
MATH 571 Numerical Methods for Scientific Computing I
MCDB 408 Genomic Biology
*SI 301 Models of Social Information Processing
*SI 422 Evaluation of Systems and Services
SI 508 Networks: Theory and Application
*SI 583 Recommender Systems
*SI 631 Practical I Engagement Workshop: Content Management Systems
*SI 679 Aggregation and Prediction Markets
*SI 683 Reputation Systems
*SI 689 Computer-Supported Cooperative Work
STATS 401 Applied Statistical Methods II
STATS 408 Statistical Principles for Problem Solving: A Systems Approach
STATS 425 Introduction to Probability
STATS 426 Introduction to Theoretical Statistics
STATS 430 Applied Probability
STATS 470 Introduction to the Design of Experiments
STATS 480 Survey Sampling Techniques
STATS 500 Applied Statistics I
STATS 525 Probability Theory

Life Science Informatics

13-14 credits — 8 credits at the 300 level or higher.

BIOCHEM/BIOINF/BIOMEDE/PATH 551 Proteome Informatics
BIOINF 545/STATS 545/BIOSTAT 646 Molecular Genetic and Epigenetic Data
MATH 547/BIOINF 547/STATS 547 Probabilistic Modeling in Bioinformatics
MATH/STATS 548 Computations in Probabilistic Modeling in Bioinformatics
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EECS 477 Introduction to Algorithms
EECS 481 Software Engineering
EECS 484 Database Management Systems
EECS 485 Web Database and Information Systems
EECS 487 Interactive Computer Graphics
EECS 489 Computer Networks
EECS 492 Introduction to Artificial Intelligence
EECS 493 User Interface Development
*EECS 495 Patent Fundamentals for Engineers
HON 352 Cyberscience
MATH 416 Theory of Algorithms
MATH 425 Introduction to Probability
MATH 451 Advanced Calculus I
MATH 462 Mathematical Models
MATH 463 Math Modeling in Biology
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MCDB 408 Genomic Biology
MCDB 411 Protein Structure and Function
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*SI 422 Evaluation of Systems and Services
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Effective Fall 2014