MICHIGAN STATE UNIVERSITY

Report of
THE UNIVERSITY COMMITTEE ON CURRICULUM
to the Faculty Senate
March 20, 2018

The effective date for new programs subject to Statewide Academic Program review is implemented in accordance with the Statewide Academic Program Review calendar.
TO: Faculty Senate

This report is prepared and distributed for the following purposes:

1. To report new academic programs, changes in academic programs, discontinuations of academic programs, new courses, permanent changes in courses, and deletions of courses.
2. To notify the initiating colleges, schools, and departments of approval by the University Committee on Curriculum of their requests for new academic programs, changes in academic programs, discontinuations of academic programs, new courses, permanent changes in courses, and deletions of courses. Any items not approved by the Faculty Senate will be reported to the appropriate college and department or school.
3. To provide information to members of the faculty in each department about academic programs and courses in all colleges, departments, and schools of the University.

Reports of the University Committee on Curriculum to the Faculty Senate are organized as follows:

PART I - NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES:

Organized by colleges in alphabetical order. For a given college, academic units are organized in alphabetical order. For a given academic unit, degrees, majors, and specializations are organized in alphabetical order.

PART II - NEW COURSES:¹

Organized by academic units in alphabetical order; All-University courses appear last. For a given academic unit, courses are organized according to the names associated with course subject codes, in alphabetical order. Courses with the same subject code are in numerical order.

PART III - COURSE CHANGES:¹

Organized by academic units in alphabetical order; All-University courses appear last. For a given academic unit, courses are organized according to the names associated with course subject codes, in alphabetical order. Courses with the same subject code are in numerical order.

Not all of the above categories, and not all of the colleges and academic units, will necessarily appear in any given Senate Report.

¹One or more of the abbreviations that follow may be included in a course entry:

P: = Prerequisite monitored in SIS
C: = Corequisite
R: = Restriction
RB: = Recommended background
SA: = Semester Alias
PART I - NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES

COLLEGE OF ARTS AND LETTERS

1. Change the requirements for the Minor in Jewish Studies in the College of Arts and Letters.
   a. Under the heading Minor in Jewish Studies make the following changes:
      (1) Replace the introductory paragraph with the following:
          The student must complete a minimum of 20 credits from the following. Up to 12 credits may be in Hebrew 101 or higher. Students enrolled in study abroad Israeli institutions may use appropriate courses towards the minor if approved in advance the Jewish Studies advisor.
      (2) Under the heading Hebrew add the following courses:
          HEB 101 Elementary Hebrew I 4
          HEB 102 Elementary Hebrew II 4
      (3) Under the heading Political Science delete the following course:
          PLS 323 Religion and Politics 4
          Add the following course:
          PLS 345 Religion and World Politics 3
      (4) Under the heading Women's Studies delete the following course:
          WS 302 Jewish Women's Experiences and Writings 3

   Effective Summer 2018.

2. Change the requirements for the Master of Arts degree in Arts and Cultural Management in the College of Arts and Letters. The University Committee on Graduate Studies (UCGS) approved this request at its February 5, 2018 meeting.
   a. Under the heading Requirements for the Master of Arts Degree in Arts and Cultural Management replace the entire entry with the following:
      The Master of Arts degree in Arts and Cultural Management is available only under Plan B (non-thesis). A total of 30 credits are required for the degree. At least 15 credits must be at the 800-level.

Students must complete 30 credits from the following courses:

   1. Both of the following courses (6 credits):
      ACM 801 Introduction to Arts and Cultural Management 3
      ACM 892 Arts and Cultural Management Seminar 3
   2. One of the following courses (6 credits):
ACM 871 Internship in Arts and Cultural Management 6
MUSM 893 Museum Internship 6

3. Three of the following courses (9 credits):
   ACM 461 Strategies of Arts and Cultural Management 3
   ACM 462 Promotion and e-Commerce in Arts and Cultural Management 3
   ACM 463 Event Production and Planning for Arts and Culture 3
   ACM 868 Non-Profit Law for Arts and Cultural Management 3
   ACM 869 Policy and Advocacy for Arts and Cultural Management 3

4. One of the following concentrations (9 credits):
   **Museum Studies**
   1. The following course (3 credits):
      MUSM 886 Fundamentals of Museum Studies 3
   2. Two of the following courses (6 credits):
      CSUS 431 Interpretation and Visitor Information Systems 3
      CSUS 873 Culture, Communities and Tourism 3
      MUSM 492 Special Topics in Museum Studies 1 to 6
      MUSM 494 Museum Exhibitions: Theory and Development 3
      MUSM 495 History Harvest 3
      MUSM 498 Learning in Museums 3
      MUSM 888 Curatorial Practices in Museums and Cultural Organizations 3
      MUSM 895 Special Topics in Museum Studies 3
      MUSM 897 Practicum in Museum Studies 1 to 6
   **Management Studies**
   1. Two of the following courses (6 credits):
      ACM 464 Education and Outreach for Arts and Cultural Management 3
      ACM 465 Leadership and Innovation for Arts and Cultural Management 3
      ACM 467 Development and Public Relations for Arts and Cultural Management 3
      ACM 468 Facilities and Operations for Arts and Cultural Management 3
      ACM 891 Special Topics in Arts and Cultural Management 3
   2. One of the following courses (3 credits):
      ACM 461 Strategies of Arts and Cultural Management 3
      ACM 462 Promotion and e-Commerce in Arts and Cultural Management 3
      ACM 463 Event Production and Planning for Arts and Culture 3
      ACM 868 Non-Profit Law for Arts and Cultural Management 3
      ACM 869 Policy and Advocacy for Arts and Cultural Management 3

   This requirement can only be met by choosing the course not used to fulfill requirement 3. above.

Other management-focused, arts and humanities courses, including independent study, as applicable, may be substituted with the approval of the academic advisor.

5. Completion of a final oral examination or evaluation.

Effective Fall 2018.

   a. Under the heading **Requirements for the Minor in Cognitive Science** make the following changes:

      (1) Under the heading **Neuroscience** add the following course:

         NEU 300 Neurobiology 3

      (2) Replace the **Zoology** section with the following:

         **Integrative Biology**
         IBIO 313 Animal Behavior 3
         IBIO 403 Integrative Neurobiology 3
         IBIO 405 Neural Basis of Animal Behavior 3
         IBIO 413 Laboratory in Behavioral Neuroscience (W) 4
         IBIO 415 Ecological Aspects of Animal Behavior (W) 3

      (3) Replace item 3. with the following:

         Complete at least 9 additional credits in course work from at least two additional areas as approved for by the advisor for the minor. If you are taking the minor to fulfill the College of Social Science minor requirement, you must take PSY 401, or 402, or 410 as the capstone and at least one additional course from Psychology.

   Effective Fall 2018.

4. Change the requirements for the **Minor in Classical and Ancient Mediterranean Studies** in the Department of Romance and Classical Studies.

   a. Under the heading **Requirements for the Minor in Classical and Ancient Mediterranean Studies** make the following changes:

      (1) In item 1. delete the following courses:

         CLA 140 Greek and Roman Mythology 3
         HST 205A The Ancient Mediterranean from 3000 BCE to 400 CE 4

      Add the following course:

         HST 205 The Ancient Mediterranean and the Medieval World 4

      (2) In item 2. under **Greek** delete the following course:

         GRK 102 Elementary Classical Greek II 4

      (3) In item 2. under **History/Art History** delete the following course:

         HST 419 Studies in Ancient History 3

      (4) In item 2. under **Classical Texts in Translation** delete the following courses:

         CLA 160 Myth Legend and J.R.R. Tolkien 3
         CLA 201 The Greek and Roman World in Film 3
         CLA 309 Greek Civilization 3
         CLA 310 Roman Civilization 3
         CLA 333 Roman Law (W) 3
         CLA 360 Ancient Novel in English Translation (W) 3
ELI BROAD COLLEGE OF BUSINESS

1. Change the requirements of the Bachelor of Arts degree in Hospitality Business in The School of Hospitality Business. The University Committee on Undergraduate Education (UCUE) approved this request at its February 8, 2018 meeting.

a. Under the heading Admission replace the entire entry with the following:

Enrollment in The School of Hospitality Business is limited, and admission to the school is competitive. Students must apply for school admission by April 1 for a fall semester admission or by November 1 for a spring semester admission. Admission is based primarily on the cumulative grade-point average and grades in the core courses listed below. Academic and non-academic factors and experiences will also be considered.

Minimum criteria for admission to the school are:

1. Completion of 28 credits.
2. Completion of the following core courses:
   a. Computer Science and Engineering 101
   b. Statistics 200 or 201
   c. Writing, Rhetoric and American Cultures 101 or other university Tier I course that fulfills the university writing requirement

b. Under the heading Requirements for the Bachelor of Arts Degree Hospitality Business make the following changes:

(1) In item 1., paragraph three, replace the entry with the following:

The completion of Statistics 200 or 201 referenced in item 2. (a) (2) satisfies the University mathematics requirement.

(2) In item 2. b., change the total credits from ‘40’ to ‘39’ and delete the following course:

HB  401  Hospitality Business Professional Development II  1

(3) In the note following item 2. b., change Hospitality Business ‘401’ to ‘489’.

Effective Summer 2018.
COLLEGE OF ENGINEERING

1. Change the Graduation Requirements for All Majors in the College of Engineering. The University Committee on Undergraduate Education (UCUE) approved this request at its February 8, 2018 meeting.

   a. Under the heading Graduation Requirements for All Majors make the following changes:

      (1) Change item 1. a., to the following:

      One of the following courses: Biological Science 161; Plant Biology 105; Entomology 205; Integrative Biology 150, Microbiology and Molecular Genetics 141, 201, 301; Physiology 250.

      (2) Change item 1. b., to the following:

      Two of the following courses: Chemistry 141, Chemistry 151, Physics 183 or 183B, Physics 184 or 184B.

      (3) Change item 2.c. to the following:

      Physics 183 or 183B and 184 or 184B.

      (4) Delete item 2.d.

      (5) Add the following new item 2.d.:

      Engineering 100.

      (6) Add the following new item 2.e.:

      One technical computing course depending on intended major: CSE 220 (Electrical Engineering), CSE 231 (Computer Science, Computer Engineering, Mechanical Engineering), or EGR 102 (all other engineering majors).

   Effective Fall 2018.

2. Change the requirements in the Bachelor of Science degree in Environmental Engineering in the Department of Civil and Environmental Engineering.

   a. Under the heading Requirements for the Bachelor of Science Degree in Environmental Engineering make the following changes:

      (1) In item 3. a. change the total credits from ‘51’ to ‘52’.

      (2) In item 3. a. change the credits of ENE 483 from ‘3’ to ‘4’.

   Effective Fall 2018.
COLLEGE OF HUMAN MEDICINE

1. Change the requirements for the Master of Public Health degree in Public Health in the College of Human Medicine. The University Committee on Graduate Studies (UCGS) approved this request at its February 5, 2018 meeting.

   a. Under the heading Requirements for the Master of Public Health Degree in Public Health make the following changes:

      (1) In item 1. change the total credits from ‘18’ to ‘22’ and add the following courses:

          HM 827 Principles of Public Health Leadership 1
          HM 854 Health Equity Framework for Public Health Practice 3

      (2) Add the following new item 2.:

          One of the following courses (3 credits):

          HM 807 Practical Application and Critical Thinking Synthesis in Public Health 3
          HM 853 Public Health Program/Intervention Evaluation 3
          HM 880 Study Design and Research Methods for Public Health Practice 3

      (3) Renumber item 2. to item 3. and delete the following courses:

          HM 891 Introduction to Public Health Practicum 1
          HM 893 Public Health Capstone 2

          Add the following course:

          HM 893 Public Health Capstone 3

      (4) Renumber item 3. to item 4. and change the credits from ‘18’ to ‘12’.

      (5) Renumber item 4. to item 5. and replace with the following:

          Successfully complete a capstone professional paper.

   Effective Summer 2018.

2. Change the requirements for the Doctor of Philosophy degree in Biostatistics in the Department of Epidemiology and Biostatistics. The University Committee on Graduate Studies (UCGS) approved this request at its February 5, 2018 meeting.

   a. Under the heading Requirements for the Doctor of Philosophy Degree in Biostatistics change the requirements in item 1. from ‘25’ to ‘27’ to read “Complete 27 credits in the required courses for the chosen emphasis area, and electives”.

   Effective Fall 2018.
COLLEGE OF NATURAL SCIENCE

1. Change the requirements for the Minor in Environmental and Sustainability Studies in the College of Natural Science.

   a. Under the heading Minor in Environmental and Sustainability Studies make the following changes:

      (1) Under Biological and Physical Dimensions delete the following courses:

          | Code | Course                                      | Credits |
          |------|---------------------------------------------|---------|
          | ENT  | Introduction to Earth System Science       | 3       |
          | ZOL  | Ecology                                    | 3       |

          Add the following courses:

          | Code | Course                                      | Credits |
          |------|---------------------------------------------|---------|
          | FW   | Conservation Biology                        | 3       |
          | IBIO | Ecology                                    | 3       |
          | ISB   | Insects, Globalization, and Sustainability | 3       |
          | ISB   | Applications of Environmental and Organismal Biology | 3 |

      (2) Under Coupled Human and Natural Systems delete the following courses:

          | Code | Course                                      | Credits |
          |------|---------------------------------------------|---------|
          | EEP  | Environmental Economics                    | 3       |
          | EEP  | Corporate Environmental Management         | 3       |
          | FW   | Introduction to gender and Environmental Issues | 3 |
          | PKG  | Packaging and the Environment              | 3       |

          Add the following courses:

          | Code | Course                                      | Credits |
          |------|---------------------------------------------|---------|
          | ANS  | Animal Agriculture and the Environment     | 3       |
          | CSUS | Environmental Planning and Management      | 3       |
          | EEM  | Environmental Economics                    | 3       |
          | EEM  | Corporate Environmental Management         | 3       |
          | FW   | Conservation Ethics                        | 3       |
          | GEO  | Geography of Environment and Health        | 3       |
          | HST  | Environmental History of North America     | 3       |
          | PKG  | Packaging Sustainability                    | 3       |
          | WRA  | Nature and Environmental Writing           | 3       |

      (3) Under Environmental Policy and Law delete the following course:

          | Code | Course                                      | Credits |
          |------|---------------------------------------------|---------|
          | ZOL  | Environmental Issues and Public Policy     | 3       |

          Add the following courses:

          | Code | Course                                      | Credits |
          |------|---------------------------------------------|---------|
          | GEO  | Environmental Policy and Practice          | 3       |
          | IBIO | Environmental Issues and Public Policy     | 3       |

Effective Summer 2018.
2. Change the requirements for the Master of Science in Industrial Mathematics. The University Committee on Graduate Studies (UCGS) approved this request at its February 5, 2018 meeting.

a. Under the heading Requirements for the Master of Science Degree in Industrial Mathematics make the following changes:

(1) Change the total credits required for the degree from ‘36’ to ‘30’.

(2) Change item 1. b. to ‘two of the following courses’ and delete the following course:

MTH 840 Chaos and Dynamical Systems 3

Add the following course:

MTH 847 Partial Differential Equations I 3

(3) In item 1. c. delete the following courses:

STT 461 Computations in Probability and Statistics 3
STT 865 Modern Statistical Methods 3
STT 886 Stochastic Processes and Applications 3

Add the following courses:

STT 802 Statistical Computation 3
STT 875 R Programming for Data Sciences 3
STT 886 Stochastic Processes and Applications 4

(4) Change item 1. d. to ‘two of the following courses’ and delete the following courses:

CE 801 Nonlinear Structural Mechanics 3
CE 829 Mixing and Transport in Surface Waters 3
CE 863 Applied Numerical Methods for Civil and Environmental Engineers 1
EC 816B Macroeconomics II 3
EC 816 Economic Thought II 3
EC 829 The Economics of Environmental Resources 3
ECE 466 Digital Signal Processing and Filter Design 3
ECE 837 Computational Methods in Electromagnetics 3
ECE 849 Digital Image Processing 3
ECE 867 Information Theory and Coding 3
ECE 885 Artificial Neural Networks 3
ENE 801 Dynamics of Environmental Systems 3
ENE 804 Biological Processes in Environmental Engineering 3
ENE 822 Groundwater Modeling 3
ENE 823 Stochastic Groundwater Modeling 3
ME 820 Continuum Mechanics 3
ME 821 Linear Elasticity 3
ME 851 Linear Systems and Control 3
ME 860 Theory of Vibrations 3
MKT 809 Pricing, Profitability and Marketing Metrics 3
MKT 865 Emerging Topics in Business 3
SCM 826 Manufacturing Design and Analysis 1
SCM 827 Competing Through Supply Chain Logistics 1
SCM 854 Integrated Logistics Systems 2

Add the following courses:

CMSE 801 Introduction to Computational Modeling 3
CMSE 802 Methods in Computational Modeling 3
CMSE 820 Mathematical Foundations of Data Science 3
CMSE 821 Numerical Methods for Differential Equations 3
PART I – NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES

CMSE 822 Parallel Computing      3
CMSE 823 Numerical Linear Algebra      3
CSE 836 Probabilistic Models and Algorithms in Computational Biology 3
CSE 841 Artificial Intelligence      3
CSE 847 Machine Learning      3
CSE 860 Foundations of Computing      3
CSE 880 Advanced Database Systems      3
EC 813B Macroeconomics II and its Mathematical Foundations   4
EC 821A Cross Section and Panel Data Econometrics I   3
EC 821B Cross Section and Panel Data Econometrics II   3
MKT 816 Marketing Analysis      3
MKT 864 Data Mining in Marketing      3
SCM 815 Emerging Topics in Supply Management     1.5
SCM 826 Manufacturing Design and Analysis     1.5
SCM 854 Integrated Logistics Systems     1.5

Effective Fall 2018.

3. Change the requirements for the Master of Science degree in Astrophysics and Astronomy in the Department of Physics and Astronomy. The University Committee on Graduate Studies (UCGS) approved this request at its February 5, 2018 meeting.

   a. Under the heading Requirements for the Master of Science Degree in Astrophysics and Astronomy make the following changes:

   (1) Replace item 2. with the following:

   Pass a qualifying master’s exam that tests basic knowledge of undergraduate physics with a grade of B or above before the end of the student’s first semester of the second year. A maximum of three attempts is allowed on this exam.

   (2) Replace item 3. with the following:

   Complete the following core physics courses or their subject examinations, and the following core of astronomy courses, with a grade-point average of 3.0 or higher:

   **Physics**
   Two of the following:
   PHY 820 Classical Mechanics      3
   PHY 831 Statistical Mechanics      3
   PHY 841 Classical Electrodynamics I      3

   **Astronomy**
   All of the following:
   AST 810 Radiation Astrophysics      3
   AST 825 Galactic Astronomy      3
   AST 835 Extragalactic Astronomy      3
   AST 840 Stellar Astrophysics      3

   (3) Delete item 4.

   (4) Add the following:

   4. Complete a minimum of 6 credits of additional course work in physics, astrophysics or computation, with a grade-point average of 3.0 or higher at the 800-level or above as chosen in consultation with the student’s guidance committee.

   5. Complete training in Responsible Conduct of Research (RCR).

   (5) Under the heading Additional Requirements for Plan A replace the entry with the following:

   1. Complete 4 to 10 credits of Astronomy 899 Master’s Thesis Research.
2. Pass a final oral examination in defense of the thesis.

The student must form a guidance committee of three regular faculty members: the student’s master’s thesis advisor, one additional member of the astronomy group and one faculty member from outside the astronomy group.

Effective Fall 2018.

4. Change the requirements for the Doctor of Philosophy degree in Astrophysics and Astronomy in the Department of Physics and Astronomy. The University Committee on Graduate Studies (UCGS) approved this request at its February 5, 2018 meeting.

a. Under the heading Requirements for the Doctor of Philosophy Degree in Astrophysics and Astronomy make the following changes:

(1) Replace item 1. with the following:

Pass the doctoral qualifying exam that tests basic knowledge of undergraduate physics with a grade of A before the end of the student’s first semester of the second year. A maximum of three attempts is allowed on this exam.

(2) Replace item 2. with the following:

Complete the following core physics courses or their subject examinations, and the following core of astronomy courses, with a grade-point average of 3.375 or higher:

**Physics**
Two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 820</td>
<td>Classical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHY 831</td>
<td>Statistical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHY 841</td>
<td>Classical Electrodynamics I</td>
<td>3</td>
</tr>
<tr>
<td>PHY 851</td>
<td>Quantum Mechanics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Astronomy**
All of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AST 810</td>
<td>Radiation Astrophysics</td>
<td>3</td>
</tr>
<tr>
<td>AST 825</td>
<td>Galactic Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>AST 835</td>
<td>Extragalactic Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>AST 840</td>
<td>Stellar Astrophysics</td>
<td>3</td>
</tr>
</tbody>
</table>

(3) Delete items 4., 5., and 6. and replace with the following:

4. Complete a minimum of 6 credits of additional course work in physics, astrophysics or computation, with a grade-point average of 3.375 or higher at the 800-level or above as chosen in consultation with the student’s guidance committee.

5. Complete training in Responsible Conduct of Research (RCR).

6. Complete one semester as a Teaching Assistant (TA). International students who are not native English speakers must pass the SPEAK test in order to be a TA.

7. Complete 24 credits of doctoral dissertation research in AST 999.

8. Complete a doctoral dissertation on original research, followed by an oral examination in defense of the dissertation.

Effective Fall 2018.
1. Establish a Minor in History in the Department of History. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its December 7, 2017 meeting.

a. **Background Information:**

The Department of History wishes to provide an additional history minor option that is not geared towards teacher education students and is available to all students at the university. Many students do not have space in their programs to add an additional major or second degree but have accumulated history credits that could comprise a minor. There has been much informal interest in a history minor. This opportunity would allow students to obtain research, reasoning and writing skills that form the core of historical study while developing capacities to integrate knowledge from diverse historical subfields based on this common set of skills.

b. **Academic Programs Catalog Text:**

The Minor in History, which is administered by the Department of History, provides foundational skills needed for the study of history, breadth of historical knowledge, and advanced study of one or more historical topics. Students obtain research, reasoning and writing skills that form the core of historical study and develop capacities to integrate knowledge from diverse historical subfields based on this common set of skills.

The minor is available as an elective to students enrolled in bachelor’s degree programs at Michigan State University other than the Bachelor of Arts degree in History, History Education, or Global History. With the approval of the department and college that administer the student's degree program, the courses that are used to satisfy the minor may also be used to satisfy the requirements for the bachelor’s degree.

Students who plan to apply to the program should consult the undergraduate advisor in the Department of History.

**Requirements for the Minor in History**

Complete 15 credits in History as follows:

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>The following course (3 credits)</td>
</tr>
<tr>
<td></td>
<td>HST 201 Historical Methods and Skills 3</td>
</tr>
<tr>
<td></td>
<td>2. Complete 12 credits in History courses, of which 6 of those credits must be at the 300-400 level. A maximum of 3 credits in advanced placement or transfer credit may be used towards this requirement. Courses used in fulfillment of this requirement must be approved by the undergraduate advisor in the Department of History.</td>
</tr>
</tbody>
</table>

Effective Fall 2018.
2. Change the requirements for the Bachelor of Arts degree in Human Capital and Society in the School of Human Resources and Labor Relations.

   a. Under the heading Requirements for the Bachelor of Arts Degree in Human Capital and Society make the following changes:

      (1) In item 1., paragraph two, change the NATURAL SCIENCE REQUIREMENT to the SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) REQUIREMENT.

      (2) In item 3. a. add the following courses:

         GEO 363 Introduction to Quantitative Methods for Geographers 3
         PSY 295 Data Analysis in Psychological Research 3
         STT 315 Introduction to Probability and Statistics for Business 3
         STT 421 Statistics I 3

      (3) Change item 3. b. to ‘One of the following courses’, and add the following course:

         EC 202 Introduction to Macroeconomics 3

      (4) In item 3. d. under General add the following courses:

         SSC 493 Social Science Internship 3
         SSC 493A Social Science International Internship 3
         SSC 494 Undergraduate Research in Social Science 3
         SSC 496 Field Study Abroad 3

      (5) In item 3. d. under Anthropology delete the following course:

         ANP 430 Culture, Resources and Power 3

      (6) In item 3. d. under Human Development and Family Studies delete the following course:

         HDFS 405 Work and Family 3

Effective Fall 2018.

3. Change the requirements for the Bachelor of Arts degree in Psychology.

   a. Under the heading Requirements for the Bachelor of Arts Degree in Psychology make the following changes:

      (1) In item 1., add the following statement:

         The following will satisfy either the University’s Mathematics requirement or the College of Social Science STEM requirement, but not both. The completion of Mathematics 103 or equivalent placement score and one of the following courses: Mathematics 101, 102, 112, 114, 124, 132, 152H, 201, Statistics 200 or 201. Mathematics 110 and 116 may also satisfy this requirement.

      (2) In item 1., under the University Tier II writing requirement, delete ‘PSY 441’ and add ‘PSY 444’.

      (3) Change item 3. c. to ‘Two of the following courses’ and move the courses in item 3. d. to the listing in item 3. c.

      (4) Reletter item 3. e. to item 3. d. and delete the following course:

         PSY 441 Interpersonal Behavior and Groups (W) 3
Add the following course:

PSY 444 Developmental Psychology: Adolescence through Youth (W) 3

(5) Reletter item 3. f. to item 3. e.

(6) Add the following item 4.:

Other Required Courses (6 credits):

ARTS AND HUMANITIES REQUIREMENT

Complete a minimum of 6 credits in Arts and Humanities from a list of courses approved by the College of Social Science Committee on Curriculum and Academic Policy. Most courses offered in the College of Arts and Letters count toward this requirement. Other courses approved by the College of Social Science Committee on Curriculum and Academic Policy can meet this requirement. A list of approved courses is maintained by the College of Social Science. For further information, consult the Office of Student Affairs in the College of Social Science or an academic advisor in a department or school. A department or school may require its majors to complete specific courses or particular subject matter areas to satisfy this requirement. The requirement may be satisfied either within or outside the requirements of the major or within the interdisciplinary minor.

Effective Fall 2018.

4. Change the requirements for the Bachelor of Science degree in Psychology.

a. Under the heading Requirements for the Bachelor of Science Degree in Psychology make the following changes:

(1) In item 1., under the University Tier II writing requirement, delete ‘PSY 441’ and add ‘PSY 444’.

(2) In item 2., delete paragraph two.

(3) Change item 3. c. to ‘Two of the following courses’ and move the courses in item 3. d. to the listing in item 3. c.

(4) Reletter item 3. e. to item 3. d. and delete the following course:

PSY 441 Interpersonal Behavior and Groups (W) 3

Add the following course:

PSY 444 Developmental Psychology: Adolescence through Youth (W) 3

(5) Reletter item 3. f. to item 3. e.

(6) Replace item 4. with the following:

Other Required Courses (15 credits):

Complete a 15 credits in Science, Technology, Engineering, and Mathematics (STEM) courses from a list of courses approved and maintained by the Department of Psychology. At least 9 of these credits must be from psychology relevant STEM courses. Fulfillment of this requirement also meets the College of Social Science STEM Graduation Requirement for Bachelor of Science Degree.

(7) Delete the section Honors Opportunities.

Effective Fall 2018.
PART II - NEW COURSES

COLLEGE OF ARTS AND LETTERS

ACM 490  Independent Study
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: ACM 271
Special project, directed reading and research arranged by an undergraduate student and a faculty member in areas supplementing regular course offerings.
Effective Fall 2018

ACM 491  Special Topics in Arts and Cultural Management
On Demand. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. RB: ACM 271
Special topics supplementing regular course offerings, proposed by faculty on a group study basis.
Effective Fall 2018

ACM 869  Policy and Advocacy for Arts and Cultural Management
Spring of every year. 3(3-0) R: Open to graduate students in the College of Arts and Letters or approval of college.
Policymaking pertaining to local, regional, national and international arts and cultural organizations. History and practice of arts and cultural advocacy campaigns, budget administration, and the impact of arts and cultural organizations on policymaking. Exploration of community engagement, strategic messaging, project oversight, assessment, and accessibility when creating new policy including lobbying in the legislative process.
Effective Fall 2018

ACM 890  Independent Study
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
Special project, directed reading, and research arranged by a graduate student and a faculty member in areas supplementing regular course offerings.
Effective Fall 2018

ACM 892  Arts and Cultural Management Seminar
Spring of every year. 3(3-0) P: ACM 801 R: Open to graduate students in the College of Arts and Letters or approval of college.
Arts and cultural management issues and research explored from a variety of arts and cultural management-based perspectives.
Effective Fall 2018

DEPARTMENT OF CHEMICAL ENGINEERING AND MATERIALS SCIENCE

CHE 992  Seminar
Fall of every year. Spring of every year. 1(0-2) Interdepartmental with Materials Science and Engineering. A student may earn a maximum of 5 credits in all enrollments for this course. R: Open to doctoral students in the Chemical Engineering Major or in the Materials Science and Engineering Major.
Presentations of detailed studies of specialized aspects of chemical engineering and materials science.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2018
**SCHOOL OF HOSPITALITY BUSINESS**

**HB 420  The Business of Golf**
Fall of every year. Spring of every year. 3(3-0) R: Open to juniors or seniors or graduate students.  
Accounting, branding, expensing, logistics, negotiations, recruiting, risk management, operations, and promotion in golf. Business considerations in the development and location of golf courses.  
Effective Summer 2018

**COLLEGE OF HUMAN MEDICINE**

**HM 827  Principles of Public Health Leadership**
Fall of every year. Spring of every year. Summer of every year. 1(1-0) RB: Academic or professional background in public health and/or public health related discipline R: Open to students in the Public Health Major or approval of college.  
Context, competencies and core leadership skills. Theories and research in public health and related organizations. Best practices, leadership styles, professional identity. Future leadership challenges.  
Effective Summer 2018

**DEPARTMENT OF INTEGRATIVE BIOLOGY**

**IBIO 830  Statistical Methods in Ecology and Evolution I**
Fall of every year. 3(3-0) Interdepartmental with Entomology and Plant Biology.  
Effective Spring 2018

**IBIO 831  Statistical Methods in Ecology and Evolution II**
Spring of every year. 3(3-0) Interdepartmental with Entomology and Plant Biology. P: IBIO 830  
Advanced elements of data analysis in ecology and evolution. Interpretation and modeling of biological data with modern methods for estimation and inference using the R computing language.  
Effective Spring 2018

**IBIO 860  Modern Statistical Models in Ecology**
On Demand. 2(2-0) RB: A thorough understanding of probability and distributions, linear models, generalized linear models, and programming knowledge, such as will be provided in IBIO 830-831.  
Analysis of population and community dynamics with an emphasis on practical applications including model development and open source statistical programs.  
Effective Spring 2018

**MSU COLLEGE OF LAW**

**LAW 530U  First-Year Advanced Topics and Skills**
Spring of every year. 0 to 6 credits. R: Open to Law students or law advanced students or law lifelong students or law non-degree students.  
Additional doctrinal depth in a required topic. Contains significant skills components.  
Effective Fall 2018
DEPARTMENT OF MEDICINE

MED 643  Medicine Critical Care
Fall of every year. Spring of every year. Summer of every year. 6 credits. P: MED 641 R: Open to graduate-professional students in the College of Human Medicine. Hospital-based clinical experience in evaluating and managing acutely ill adult patients. Request the use of the Pass-No Grade (P-N) system. Request the use of ET-Extension to postpone grading. The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment. Effective Summer 2018

COLLEGE OF OSTEOPATHIC MEDICINE

OST 591  Medical Case Study Journal Review
Fall of every year. Spring of every year. Summer of every year. 1(2-0) R: Open to graduate-professional students in the College of Osteopathic Medicine. Analysis and presentation of clinical case reports in the criteria required to identify case reports published in reputable journals containing clinically consistent basic science principles and biomedical concepts. Request the use of the Pass-No Grade (P-N) system. Effective Summer 2018

DEPARTMENT OF PHYSICS AND ASTRONOMY

AST 911  Numerical Techniques in Astronomy
Spring of odd years. 2(2-0) P: PHY 810 and PHY 820 or approval of department
REINSTATION Numerical solutions to key problems in astronomy and astrophysics. N-body gravitational calculations, hydrodynamics in astronomy, radiative transfer, and techniques for large datasets. Offered first half of semester. Effective Spring 2018

PHY 864  Accelerator Technology
Spring of every year. 3(3-0) RB: PHY 422 and PHY 482 R: Open to graduate students in the College of Engineering or in the College of Natural Science. Key technologies for modern accelerators such as magnets, the normal conducting and super conducting radio frequency cavities, charged particle sources, diagnostic instruments. Effective Fall 2018

DEPARTMENT OF SURGERY

SUR 643  Surgical Critical Care
Fall of every year. Spring of every year. Summer of every year. 6 credits. P: SUR 641 and SUR 642 R: Open to graduate-professional students in the College of Human Medicine. Hospital-based clinical experience in evaluating and managing acutely ill surgical patients. Request the use of the Pass-No Grade (P-N) system. Request the use of ET-Extension to postpone grading. The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment. Effective Summer 2018

DEPARTMENT OF THEATRE

THR 336  Sex, Sexuality and Theatre
Fall of every year. Spring of every year. Summer of every year. 3(3-0) RB: THR 110 Thematic exploration of how and why sex and sexuality have been used in theatre throughout history. Effective Summer 2018
PART III – COURSE CHANGES

DEPARTMENT OF ANTHROPOLOGY

ANP 410  Anthropology of Latin America
Fall of even years. Fall of every year. 3(3-0) P: Completion of Tier I Writing Requirement R: Not open to freshmen.
Comparative analysis of significant social issues confronting contemporary Latin American countries.
Effective Fall 2014 Effective Fall 2018

COLLEGE OF ARTS AND LETTERS

ACM 868  Law and Policy for Arts and Cultural Management
Non-Profit Law for Arts and Cultural Management
Fall of every year. Spring of every year. 3(3-0) R: Open to graduate students in the College of Arts and Letters or approval of college.
Legal issues pertaining to the creation and operation of cultural business entities.
Exploration of relevant aspects of nonprofit business law, finance and taxes, contracts, intellectual property, constitutional law, artists’ moral and economic rights, estate planning for individuals and organizations. Historical and contemporary examination of reparations of cultural property.
SA: AL 868
Effective Fall 2017 Effective Fall 2018

ACM 871  Internship in Arts and Cultural Management
Fall of every year. Summer of every year. 3 to 6 credits. 1 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open to graduate students in the College of Arts and Letters or approval of college.
Supervised internship with arts and cultural organizations associated with management and operational studies.
SA: AL 871
Effective Fall 2017 Effective Fall 2018

ACM 891  Special Topics in Arts and Cultural Management
Fall of every year. Spring of every year. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open to graduate students in the Arts and Cultural Management major or approval of college.
Special topics supplementing regular course offerings, proposed by faculty on a group study basis.
Effective Fall 2017 Effective Fall 2018

DEPARTMENT OF BIOSYSTEMS AND AGRICULTURAL ENGINEERING

BE 429  Fundamentals of Food Engineering
Spring of every year. 3(3-0) Interdepartmental with Food Science. P: FSC 325 and MTH 124 and PHY 234 P: (FSC 325) and (MTH 124 or MTH 132 or LB 118 or MTH 152H) and (PHY 231 or PHY 183 or PHY 193H or LB 273) RB: FSC 211 R: Not open to students in the College of Engineering.
Definition and measurement of food properties, thermodynamics, fluid mechanics, heat transfer, and mass transfer.
SA: BE 329
Effective Fall 2013 Effective Fall 2018
DEPARTMENT OF CHEMICAL ENGINEERING AND MATERIALS SCIENCE

CHE 802  Research Methods
Fall of every year. 4(3-0) 1(0-2) Interdepartmental with Materials Science and Engineering. R: Open to graduate students in the Department of Chemical Engineering and Materials Science.
Skills required for graduate research. Critically reviewing the literature, defining a fundamental research problem, effective oral and written technical presentations, ethics, and statistics. Skills required for graduate research. Critically reviewing the literature, defining a fundamental research problem, effective oral and written technical presentations.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2006 Effective Fall 2018

CHE 892  Seminar
Fall of every year. Spring of every year. 1(0-2) Interdepartmental with Materials Science and Engineering. A student may earn a maximum of 4 credits in all enrollments for this course. A student may earn a maximum of 2 credits in all enrollments for this course. R: Open only to Chemical Engineering majors. R: Open to master's students in the Chemical Engineering Major or in the Materials Science and Engineering Major.
Presentations of detailed studies of one or more specialized aspects of chemical engineering and materials science. Presentations of detailed studies of specialized aspects of chemical engineering and materials science.
Request the use of the Pass-No Grade (P-N) system.
Effective Summer 2005 Effective Fall 2018

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

CE 321  Introduction to Fluid Mechanics
Fall of every year. Spring of every year. 4(3-2) P: (MTH 234 or MTH 254H or LB 220) and CE 221 and (((BE 230 or concurrently) or (CE 273 or concurrently) or (CE 274 or concurrently)) and completion of Tier I writing requirement) P: (MTH 235) and CE 221 and Completion of Tier I Writing Requirement R: Open to juniors or seniors in the Department of Civil and Environmental Engineering or in the Biosystems Engineering Major. Not open to students with credit in ME 332.
Fluid properties, fluid statics, fluids in motion. Conservation of mass, energy, and momentum. Dimensional analysis and similitude. Internal and external flows. Applications. Effective Fall 2016 Effective Fall 2018

ENE 421  Engineering Hydrology
Fall of every year. 3(3-0) Interdepartmental with Civil Engineering. P: CE 321 and (GLG 201 or GLG 301) P: (CE 321) and (GLG 201 or GLG 301) and (CE 372 or STT 351) R: Open to juniors or seniors or graduate students in the College of Engineering or in the College of Natural Science or in the Department of Plant, Soil and Microbial Sciences.
Hydrologic design of storm water systems. Equilibrium hydrograph analysis, unit hydrographs, infiltration, hydrograph synthesis, and reservoir routing. Groundwater: Darcy's law, flow nets, well hydraulics, design of capture wells. Effective Fall 2014 Effective Fall 2018

ENE 480  Environmental Measurements Laboratory
Fall of every year. 1(0-3) Interdepartmental with Civil Engineering. P: (CEM 161 or CEM 185H or LB 171L) and ENE 280 P: (CEM 161 or CEM 185H or LB 171L) and ENE 280 and (CEM 142 or CEM 152 or CEM 182H or LB 172) and ((ENE 481 or concurrently) or (ENE 483 or concurrently)) and Completion of Tier I Writing Requirement R: Open to juniors or seniors or graduate students in the College of Engineering.
Basic chemical and microbiological methods used in the analysis of environmental media. Laboratory safety, quality assurance, quality control, and statistics used in laboratory analysis. Related technical communication, laboratory report writing. Effective Fall 2013 Effective Fall 2018
Part III – Course Changes

ENE 483  Water and Wastewater Engineering
Fall of every year. 3(3-2) Interdepartmental with Civil Engineering. P: (ENE 280 or BE 230) and (CE 321 or CHE 311) R: Open to juniors or seniors or graduate students in the College of Engineering.

- Engineering and scientific basis and design of physical, chemical and biological methods for the treatment of drinking water and wastewater.
- Operation process selection and design.
- Engineering and scientific basis and design of physical, chemical and biological methods for the treatment of drinking water and wastewater.
- Operation process selection and design. Field trips required.

Effective Fall 2017 Effective Fall 2018

Department of Emergency Medicine

EM 630  Emergency Medicine Clerkship
Fall of every year. Spring of every year. Summer of every year. 6 to 24 credits. 6 credits. A student may earn a maximum of 24 credits in all enrollments for this course. P: (FM 608 or MED 608 or PHD 600 or SUR 608) and (FM 608 or MED 608 or PHD 600 or SUR 608) P: (FM 608 or MED 608 or PHD 600 or SUR 608) or HM 556 R: Open to graduate-professional students in the College of Human Medicine.

- Clinical diagnosis and treatment of the undifferentiated patient in the emergency department setting.
- Request the use of the Pass-No Grade (P-N) system.
- Request the use of ET-Extension to postpone grading.
- The work for the course must be completed and the final grade reported within 2 semesters after the end of the semester of enrollment.

SA: HM 630

Effective Summer 2013 Effective Summer 2018

Department of Finance

FI 478  Investment Strategies and Speculative Markets
Fall of every year. Spring of every year. 3(3-0) P: FI 311 and FI 312 R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management.

- Pricing, trading strategies, hedging applications, and markets for forwards, futures, swaps, and options.

Effective Fall 2014 Effective Spring 2018

School of Hospitality Business

HB 201  Hospitality Business Professional Development I
Hospitality Business Professional Development
Fall of every year. Spring of every year. 1(1-0) RB: HB 100 or concurrently R: Open to undergraduate students in the School of Hospitality Business.

- Self-assessment of personal and professional interests, values, and skills. Definition of professional goals. Career planning. Offered half of semester. Self-assessment of personal and professional interests, skills, and values. Development of professional identity. Career exploration, planning, and development. Building professional relationships through networking and mentorships. Workplace competencies including diversity and multicultural awareness, interpersonal communication, team membership, and leadership.

Effective Fall 2013 Effective Summer 2018
HB 307  Hospitality Human Resources
Fall of every year. Spring of every year. 3(3-0) P: HB 201 or concurrently P: HB 201 RB:
Completion of Level I internship. R: Open to juniors or seniors in the School of Hospitality Business.
Human resource management and interpersonal skills in the hospitality industry. Managing in a culturally diverse workplace. Human resource management and interpersonal skills in the hospitality industry. Managing in a culturally diverse workplace. Benefits, compensation, employee and labor relations, equal opportunity, ethics, interviewing, job analysis and description, labor laws, performance management and appraisal, personnel planning, recruitment, retention, risk management, strategic planning, talent management, testing and selection, training and development. Effective Summer 2011 Effective Summer 2018

HB 401  Hospitality Business Professional Development II
Fall of every year. Spring of every year. 1(1-0) P: HB 307 RB: Completion of Level II internship. R:
Open to juniors or seniors in the School of Hospitality Business. Defining hospitality career goals and designing and implementing a strategic job search and professional development plan. Offered half of semester. DELETE COURSE Effective Summer 2018

HB 409  Introduction to Wine
Fall of every year. Summer of every year. 3(3-0) R: Not open to freshmen or sophomores. R: Open to juniors or seniors or graduate students.
Introduction to wine with emphasis on primary varietals and blends, legal nomenclature, classes of wine, and wine production. Potential health implications of wine consumption and socio-cultural and historical facts. Wine and food matching and tools and approaches for wine and food matching. Sensory assessment is discussed. No alcohol is consumed in this course. Effective Fall 2015 Effective Summer 2018

HB 485  Hospitality Foodservice Operations
Fall of every year. Spring of every year. Summer of every year. 3(1-4) P: HB 345 and HB 345L P: (HB 345) and ((HB 302 or concurrently) or (ACC 202 or concurrently) or (ACC 230 or concurrently)) R: Open to seniors in the School of Hospitality Business. Beverage management and dining room service. Guest relations and current management topics. Emphasis on foodservice team projects. Effective Spring 2013 Effective Summer 2018

HB 489  Hospitality Business Strategy (W)
Fall of every year. Spring of every year. 3(3-0) P: Completion of Tier I Writing Requirement P: (HB 307) and completion of Tier I writing requirement RB: Completion of Level I and Level II internship. RB: Completion of Level I and Level II internships. R: Open to seniors in the School of Hospitality Business. Management problems and issues in the hospitality industry. Focus on decision-making models. Case study analysis, discussion and report writing. Effective Fall 2017 Effective Summer 2018

HB 802  Hospitality Operations
Fall of every year. Spring of every year. 3(3-0) Hospitality business operational issues. DELETE COURSE Effective Summer 2018

HB 807  Workforce Management in the Hospitality Industry
Fall of every year. Fall of odd years. 3(3-0) R: Open only to graduate students in the Eli Broad College of Business. R: Open to graduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management. Identifying and solving hospitality workforce problems. Topics include leadership styles, interpersonal and organization communication. SA: HRI 907 Effective Fall 1993 Effective Summer 2018
HB 841  Contemporary Trends in Cuisine and Culture  
**Fall of every year. Fall of odd years. 3(3-0)**  
Contemporary trends in cuisine and culture from the perspectives of global impact on food safety, food marketing and distribution, food production and the cross-cultural adaptation of cuisines throughout the world  
**Effective Fall 2008 Effective Summer 2018**

HB 847  Hospitality Business Law  
**Spring of every year. Spring of even years. 3(3-0) R: Open to graduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management.**  
Legal aspects of hospitality industry, including structure of the U.S. legal system, contracts, torts, discrimination, property and product liability. Administrative law and government regulation of the industry.  
**Effective Fall 2016 Effective Summer 2018**

**DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY STUDIES**

HDFS 322  Infant Development and Program Planning  
**Fall of every year. Spring of every year. 3(3-0) P: HDFS 211 RB: HDFS 320 C: HDFS 322L concurrently.**  
Markers of typical and atypical development in infancy. Indicators of quality childcare. Early intervention and support programs. Issues in curriculum and environments of childcare.  
SA: FCE 322  
**Effective Summer 2017 Effective Spring 2018**

HDFS 481  Research and Quantitative Methods in Human Development and Family Studies  
**Fall of every year. Spring of every year. 3(3-0) P: HDFS 270 and ((MTH 103 or MTH 110 or MTH 116 or MTH 124 or MTH 132 or STT 200 or STT 201) or designated score on Mathematics Placement test.) P: (HDFS 270) and ((MTH 103 or MTH 110 or MTH 116 or MTH 124 or MTH 132 or STT 200 or STT 201 or MTH 101 or MTH 102) or designated score on Mathematics Placement test.) R: Open to juniors or seniors or graduate students in the Department of Human Development and Family Studies.**  
Survey of qualitative and quantitative research methods. Evaluate, conceptualize and plan research. Validity and ethics explored for consumers of research in community agencies.  
**Effective Summer 2014 Effective Spring 2018**

HDFS 881  Quantitative Methods in Family and Child Ecology  
**Quantitative Methods in Human Development**  
Fall of every year. Spring of every year. 3(3-0) RB: (HDFS 880) or equivalent course in research methods. R: Open to master's students or doctoral students in the Department of Human Development and Family Studies.  
Application of quantitative techniques to the analysis of family and ecological research data. Application of quantitative techniques to the analysis of human development and family studies research data.  
SA: FCE 881  
**Effective Fall 2010 Effective Summer 2018**
COLLEGE OF HUMAN MEDICINE

HM 654 Advanced Skills and Knowledge in Medical School IV
Fall of every year. Summer of every year. 2(2-0) A student may earn a maximum of 6 credits in all enrollments for this course. P: HM 653 R: Open to graduate-professional students in the College of Human Medicine.
Interdisciplinary small group course for advanced medical students combining advanced clinical skills with deep exploration of scientific and humanities literature underlying these skills. Advanced medical students combining advanced clinical skills with deep exploration of scientific and humanities literature underlying these skills. Request the use of the Pass-No Grade (P-N) system.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment.
Effective Fall 2018

HM 802 Biostatistics for Public Health
Fall of every year. Spring of every year. Summer of every year. 3(3-0) RB: Academic or professional background in public health or public health-related discipline, undergraduate level math or statistics course work. RB: College Algebra. RB: Open to graduate students in the College of Human Medicine or in the College of Public Health. R: Open to master's students in the Public Health major or in the Public Health Specialization.
Data management, analysis and presentation of public health data. Techniques and methods for calculating population-based statistics. Instruction using Epi-Info software package. Practical applications and methods using software (SAS, Epi-Info) for statistical analysis, database construction, data visualization and interpretation.
Effective Fall 2008 Effective Spring 2018

HM 807 Introduction to Critical Reading in Public Health
Practical Application and Critical Thinking Synthesis in Public Health
Fall of every year. Spring of every year. Summer of odd years. 3(3-0) RB: Academic or professional background in public health and/or public health related discipline R: Open to students in the Public Health Major or approval of college.
Effective Summer 2013 Effective Summer 2018

HM 878 Applied Biostatistics for Public Health Practitioners
Fall of even years. Spring of every year. 3(3-0) P: HM 802 RB: Academic or professional background in public health and/or public health related discipline R: Open to students in the Public Health major or approval of college.
Effective Fall 2013 Effective Spring 2018
HM 880  Quantitative Methods in Public Health Research
Study Design and Research Methods for Public Health Practice
Fall of every year, Spring of every year, Summer of odd years, Summer of every year. 3(3-0) P: HM 802 and HM 803 RB: Academic or professional background in public health and/or public health related discipline, experience with databases R: Open to students in the Public Health Major or approval of college. Not open to students with credit in VM 830.
Identification of research questions, study design, data collection and questionnaire design, dataset manipulation and analysis, reporting of findings. Proposal writing, ethical considerations and submission to institutional review board (IRB). Examination of empirical and logical basis of public health research. Identification of research questions, study design, data collection and qualitative and quantitative approaches. Reporting of findings. Proposal writing. Ethical considerations in research.
Effective Summer 2015 Effective Summer 2018

HM 893  Public Health Capstone
Fall of every year. Spring of every year. Summer of every year. 1 to 2 credits. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. A student may earn a maximum of 3 credits in all enrollments for this course. P: HM 801 and HM 891 and HM 892 RB: Academic or professional background in public health and/or public health related discipline, undergraduate level math or statistics coursework R: Approval of college.
Capstone experience.
Effective Summer 2013 Effective Summer 2018

DEPARTMENT OF LARGE ANIMAL CLINICAL SCIENCES

LCS 679  Food Animal Production Medicine I
Spring of every year. 3 credits. RB: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine R: Open to graduate-professional students in the College of Veterinary Medicine.
Entry-level principles of production medicine as applied to food animal practice.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment.
Effective Spring 2011 Effective Summer 2018

DEPARTMENT OF MANAGEMENT

BUS 250  Business Communication: Oral and Written Skills
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: Completion of Tier I Writing Requirement R: Open to undergraduate students in the Business - Admitted major.
Communication skills including use of digital media, delivery mechanics, persuasive speaking, and preparation of executive briefs, memos, email messages.
SA: BUS 250
Effective Fall 2017 Effective Fall 2018

MGT 842  Leading Strategic Change
Leading A Strategy Change
Fall of every year, Spring of even years, Spring of every year, Summer of every year, 1 to 3 credits. P: MBA 824 or MGT 824 R: Open to master's students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of department.
Analysis and management of the change process in organizations. Micro- and macro- organizational interventions. Issues related to role of leadership in the change process. Emphasis on the need for and execution of a change in strategy.
Effective Summer 2015 Effective Fall 2018
MGT 863  Negotiations
Fall of every year. Spring of every year. Summer of every year. 1 to 2 credits. Interdepartmental
with Supply Chain Management. R: Open to master's students in the Department of Management or
in the Department of Supply Chain Management. R: Open to master's students in the Eli Broad
College of Business and The Eli Broad Graduate School of Management and not open to students
in the Master of Business Administration in Business Administration.
Strategic negotiations, negotiation preparation, buyer-supplier relationship assessment,
international negotiations, and negotiation simulation.
Effective Fall 2014 Effective Fall 2018

MKT 485  Entrepreneurship Practicum
Spring of every year. 1(0-1) P: MGT 352 and BUS 190 R: Open to students in the Entrepreneurship
and Innovation Minor.
Engagement in entrepreneurial activities outside the classroom; such as conferences,
pitch competitions, idea or startup camps, unpaid internships, and other events that
provide students with real world experience.
DELETE COURSE
Effective Fall 2018

DEPARTMENT OF MECHANICAL ENGINEERING

ME 440  Aerospace Engineering Fundamentals
Aerospace Propulsion
Fall of every year. 3(3-0) P: (ME 332 or concurrently) P: ME 332 R: Open to juniors or seniors in
the Mechanical Engineering Major.
Aerodynamics, propulsion, and flight mechanics. Vehicle and propulsion engine
performance and design characteristics. Fundamentals of thrust and propulsion systems,
including gas turbines, ramjets, rockets and electric devices. Compressible flow through
nozzles and shocks. Cycle analysis of air breathing jet propulsion and chemical rocket
propulsion. Performance and design of propulsion components.
Effective Fall 2014 Effective Fall 2018

DEPARTMENT OF MEDIA AND INFORMATION

MI 482  Building Virtual Worlds
Spring of every year. 3(2-2) P: (MI 231 and MI 346) or MI 445 P: (MI 230) or MI 445 RB: MI 247 R: Open to students in the Department of Media and Information or in the Game Design and
Development Minor.
Theoretical and practical approaches to the planning, design, and development of virtual
worlds for games and simulations.
Effective Fall 2016 Effective Summer 2018

COLLEGE OF NURSING

NUR 375  Research and Evidence-Based Practice
Fall of every year. Spring of every year. Summer of every year. 2(2-0) P: (STT 200 or STT 201)
and completion of Tier I writing requirement P: (STT 200 or STT 201 or NUR 332 or NUR 334 or
NUR 371) and completion of Tier I writing requirement C: NUR 205 concurrently and NUR 322
concurrently and NUR 224 concurrently and NUR 445 concurrently.
Introduction to basic research methodology and how it informs evidence-based nursing
practice.
Effective Fall 2015 Effective Spring 2018
**COLLEGE OF OSTEOPATHIC MEDICINE**

**OST 572**  
Genitourinary System  
Spring of every year. 3(3-0) R: Open to graduate-professional students in the College of Osteopathic Medicine. C: OST 573 concurrently and OST 574 concurrently. C: OST 573 concurrently.  
Normal urinary and male reproductive structure and function; principles of diagnosis and management of urinary and male reproductive disorders. Integration of basic science and clinical information related to the urinary and male reproductive systems.  
Request the use of the Pass-No Grade (P-N) system.  
**Effective Summer 2013 Effective Spring 2019**

**OST 582**  
Transitions: From the Classroom to the Bedside  
Summer of every year. 1(1-0) 5 credits. R: Open to graduate-professional students in the College of Osteopathic Medicine.  
Selected topics in preparation for clinical education  
Request the use of the Pass-No Grade (P-N) system.  
**Effective Summer 2014 Effective Summer 2018**

**DEPARTMENT OF PEDIATRICS AND HUMAN DEVELOPMENT**

**PHD 643**  
Pediatric Critical Care  
Fall of every year. Spring of every year. Summer of every year. 6 credits. P: PHD 641 R: Open to graduate-professional students in the College of Human Medicine.  
Hospital-based clinical experience in evaluating and managing acutely ill pediatric patients.  
Request the use of the Pass-No Grade (P-N) system.  
Request the use of ET-Extension to postpone grading.  
The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment.  
Effective Summer 2018

**DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY**

**PHM 211**  
Pharmacology and Toxicology in Society  
Fall of odd years. Spring of every year. Summer of every year. 2(2-0)  
**Effective Fall 2015 Effective Summer 2018**

**DEPARTMENT OF PHYSICS AND ASTRONOMY**

**PHY 862**  
Physics and Applications of Accelerators and Beams  
Accelerator Systems  
Fall of every year. Spring of odd years. 2(2-0) RB: PHY 842 RB: PHY 422 and PHY 482 R: Open to graduate students in the College of Engineering or in the College of Natural Science.  
Physics and design of particle accelerators used in various subfields of physics. Introduction to large accelerator systems, including the physics and engineering of accelerators and key components of accelerators.  
**Effective Fall 2014 Effective Fall 2018**
PART III – COURSE CHANGES

DEPARTMENT OF PLANNING, DESIGN AND CONSTRUCTION

LA 419  Advanced Golf Course Architecture
Fall of every year. 3(1-4) P: LA 218 or approval of school RB: LA 231 and LA 332 and LA 345 R:
Open to master's students in the Environmental Design major and open to juniors in the Bachelor
of Landscape Architecture or approval of school.
Application of the process and principles of golf course architecture, routing, design, and
construction in an advanced design studio setting.
DELETE COURSE
Effective Summer 2018

DEPARTMENT OF POLITICAL SCIENCE

PLS 809  Proseminar in Formal Theory
Spring of every year. 3(3-0) R: Approval of department. R: Open to doctoral students in the
Political Science Major or approval of department.
Formal models in understanding politics. Topics may include game theory, spatial
modeling, social choice theory, public choice theory, and dynamic modeling. Theoretical
issues and research applications.
SA: PLS 880
Effective Fall 2004 Effective Summer 2018

DEPARTMENT OF PSYCHOLOGY

PSY 295  Data Analysis in Psychological Research
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: PSY 101 and (MTH 110
or MTH 112 or MTH 114 or MTH 116 or MTH 124 or MTH 132 or MTH 152H or MTH 201 or STT
200 or STT 201) P: (((MTH 103) or designated score on Mathematics Placement test ) and (MTH
101 or MTH 102 or MTH 112 or MTH 114 or MTH 124 or MTH 132 or MTH 152H or STT 200 or
STT 201)) or (MTH 110 or MTH 116)) and PSY 101 Not open to students with credit in STT 315.
Descriptive and inferential statistics as applied to the analysis of psychological research.
Measurement, control, and research design with psychological variables. Data analysis.
Interpreting research findings. Relations between research and theory.
Effective Fall 2014 Effective Fall 2018

DEPARTMENT OF RADIOLOGY

ANTR 355  Human Gross Anatomy Laboratory
Fall of every year. Spring of every year. Summer of every year. 1(0-3) P: ANTR 350 or concurrently
R: Approval of department. Not open to students with credit in KIN 217.
Introductory, structured laboratory survey of human regional gross anatomy using
prosections, medical imaging, and multimedia for students in allied medical fields. Correct
usage and pronunciation of medical terminology.
SA: ANTR 381
Effective Spring 2014 Effective Spring 2018