PART I – NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

1. Request to change the requirements for the Bachelor of Science degree in Nutritional Sciences in the Department of Food Science and Human Nutrition.

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

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

      - HNF 250 Contemporary Issues in Human Nutrition  2
      - HNF 450 Nutrition in the Prevention and Treatment of Disease  4

      Add the following courses:

      - HNF 250 Contemporary Issues in Human Nutrition  3
      - HNF 450 Nutrition in the Prevention and Treatment of Disease  3

      (2) In item 3. b. under the Biomedical and Molecular Nutrition concentration, make the following changes:

      (a) In item (5) (a) change the credits of ‘LB 172’ from ‘4’ to ‘3’.

      (3) In item 3. b. under the Global Nutrition and Health concentration, make the following changes:

      (a) In item (1) change the credits from ‘20’ to ‘23’ and add the following course:

          - HNF 415 Global Nutrition  3

      (b) In item (7) change the requirement from Two of the following’ to ‘One of the following’ and change the credits from ‘6’ to ‘3’.

      (4) In item 3. b. under the Public Health Nutrition concentration, make the following changes:

      (a) In item (5) delete the following course:

          - SOC 461 Basic Demographic Techniques and Applications  3

Effective Fall 2018.
2. Request to establish a Minor in Turfgrass Management in the Department of Plant, Soil and Microbial Sciences. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its April 13, 2017 meeting.

a. **Background Information:**

The Department of Plant, Soil, and Microbial Sciences (PSM) currently offers an undergraduate concentration in Turfgrass Management leading to a Bachelor of Science Degree in Crop and Soil Sciences. Students in horticulture, landscape architecture, sustainable parks, recreation and tourism, and kinesiology may want to supplement their curriculum with a Minor in Turfgrass Management. The minor is beneficial to students not majoring in crop and soil sciences, concentrating in turfgrass management, and plan to work in the landscape industry, the recreational industry, and/or the sports management industry. Students will gain an understanding of the requirements of maintaining a turfgrass playing surface or the turfgrass within a lawn or landscape.

Students will be able to determine basic soil physical, chemical, and biological properties and interpret how they influence the management of turf. They will also be able to identify common turfgrass species, determine best plant establishment techniques, and know best management practices for healthy and beneficial turf. Students will be introduced to professionals that work in the Turfgrass Industries to show potential job opportunities and make connections to the industry.

b. **Academic Programs Catalog Text:**

The Minor in Turfgrass Management, administered by the Department of Plant, Soil and Microbial Sciences, is designed to serve students that plan to work in the landscape, recreational, or the sports management industry. Students will gain an understanding of the fundamentals of maintaining a turfgrass-playing surface or the turfgrass within a lawn or landscape.

The minor is available as an elective to students who are enrolled in bachelor’s degree programs at Michigan State University. 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 complete the requirements of the minor should consult the undergraduate adviser in the Department of Plant, Soil and Microbial Sciences to have their program of study approved in advance.

**Requirements for the Minor in Turfgrass Management**

Complete a minimum of 15 credits from the following.

<table>
<thead>
<tr>
<th>C R E D I T S</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. All of the following courses (8 credits):</td>
<td></td>
</tr>
<tr>
<td>CSS 210 Fundamentals of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>CSS 232 Turfgrass Management</td>
<td>4</td>
</tr>
<tr>
<td>CSS 262 Turfgrass Management Seminar</td>
<td>1</td>
</tr>
<tr>
<td>2. One course from each of the following three areas (7 or 8 credits):</td>
<td></td>
</tr>
<tr>
<td><strong>Management of Turfgrass Cultural Practices</strong></td>
<td></td>
</tr>
<tr>
<td>CSS 178 Turfgrass Irrigation</td>
<td>3</td>
</tr>
<tr>
<td>CSS 267 Performance Turf Design and Construction</td>
<td>2</td>
</tr>
<tr>
<td>CSS 272 Turfgrass Soil Fertility</td>
<td>2</td>
</tr>
<tr>
<td>CSS 282 Turfgrass Physiology</td>
<td>2</td>
</tr>
<tr>
<td><strong>Management of Turfgrass Pests</strong></td>
<td></td>
</tr>
<tr>
<td>CSS 181 Pesticide and Fertilizer Application Technology</td>
<td>3</td>
</tr>
<tr>
<td>CSS 288 Principles of Weed Management</td>
<td>3</td>
</tr>
<tr>
<td>ENT 364 Turfgrass Entomology</td>
<td>3</td>
</tr>
<tr>
<td>PLP 266 Turf Pathology</td>
<td>3</td>
</tr>
</tbody>
</table>
General Turfgrass Management
CSS 171 Operations Budgeting for Golf Course Managers 2
CSS 202 World of Turf 2
HRT 214 Landscape and Turfgrass Business Operations 2

Effective Spring 2018.

COLLEGE OF NATURAL SCIENCE

1. Request to establish a Dual Major in Molecular Plant Sciences in the College of Natural Science. The University Committee on Graduate Studies (UCGS) recommended approval of this request at its April 10, 2017 meeting.

   a. Background Information:

   Technological advances in areas such as genomics, metabolomics, phenomics, and computational biology make it necessary to provide an integrative and technologically adaptive curriculum to train the next generation of molecular plant scientists. While plant molecular and omics biology is carried out in many laboratories in several departments and programs in two colleges, the College of Natural Science and the College of Agriculture and Natural Resources, there is not a unified program that brings these groups together and promotes the synergies in discipline and scientific approach needed to face many critical global challenges of the future. These challenges include increased and sustainable food production, development of sources of renewable energy, plant resistance to environmental challenges, discovery of new pharmaceuticals, water conservation, and biodiversity. Furthermore, while Michigan State University has one of the highest concentrations of plant scientists in the world and ranks among the leading institutions in all areas of plant science research and education, the strength of MSU’s community of plant molecular and computational scientists is not effectively reflected in our current graduate programs and curricula.

   To address these issues, a cross-campus exploratory committee composed of members from six different departments and units has worked with faculty in plant biology; biochemistry and molecular biology; plant, soil and microbial sciences; horticulture; cell and molecular biology; and genetics to propose this dual major graduate program with a curriculum that emphasizes the application of molecular, genetic, biochemical, cell biological and omics-based approaches to understand fundamental plant biological processes.

   The proposed Molecular Plant Sciences dual major will bring together the molecular and computational plant faculty housed in multiple departments and two colleges at MSU including Biochemistry and Molecular Biology, Cell and Molecular Biology, Genetics, Horticulture, Plant Biology, and Plant, Soil and Microbial Sciences, Microbiology and Molecular Genetics, Forestry, and Entomology. The dual major will enable plant science students at MSU to receive a common, essential knowledge-base and enhance awareness of and increase access to the full diversity of expertise across campus. Faculty and students will participate through a core curriculum, electives, and seminar courses, graduate student advising, and programmatic activities such as recruiting, symposia, and retreats.

   Anticipated benefits of a new dual major include heightened MSU stature and visibility at the national and global levels. Prospective students interested in plant molecular/omics biology are confronted with numerous program options, none of which is clearly dedicated to graduate education in this area.

   Furthermore, there is no single web portal that highlights the breadth and quality of plant molecular and computational faculty and research at MSU. Currently, when prospective students search for plant molecular biology graduate programs on the web, MSU does not appear in the top results of an internet search. A dedicated program website and application process will make it easier for prospective students and the broader scientific community with interests in molecular plant sciences-related research to find and access the strengths of MSU and provides MSU the ability to attract the top graduate students. The web portal will also help incoming and current students by facilitating identification of prospective rotation labs and thesis committee members. Interactions
among faculty and students will also allow for synergies with an array of programs and university-level initiatives relevant to molecular plant sciences, including the Global Impact Initiatives in Plants/Food/Environment, Plant Resilience, and Quantitative and Computational Plant Sciences, and the Great Lakes Bioenergy Research Center, the Center for Advanced Plant and Algal Phenotyping, and the NIH Graduate Training Grant on Plant Biotechnology for Health and Sustainability. The combination of a single web interface for applications, modernized core curriculum, better access to information about plant molecular and omics biology at MSU, opportunities for interactions with a broad range of MPS faculty through program activities, and enhanced opportunities for peer networking will enrich the graduate student experience and success during and after their degrees. This will in turn enhance our future ability to recruit the best graduate students and further strengthen MSU's already outstanding reputation in the plant sciences.

Development of a learning community in molecular plant sciences provides a broad impact across multiple academic units. Many graduate-level plant molecular and omics biology courses at MSU have been developed over the past 20+ years in an ad hoc way such that essential concepts are spread over many offerings and in some cases are repeated in multiple courses or entirely lacking. The molecular plant sciences exploratory committee has engaged the broad molecular plant sciences faculty over the past year to develop a set of core courses and topics, based around existing courses that provide the essential knowledge required of all plant molecular biology students and properly sequences the key concepts in the first year. While only one new course is proposed (Molecular Plant Physiology), the core courses and one elective will be revised to provide uniform and cohesive training. The instructors have already coordinated and agreed on the revised sequencing and topics in these courses. Collectively, this set of core courses will develop the background necessary for students to successfully pass preliminary examinations, provide a common foundation for students to successfully choose from a wide range of electives in their second year, and ultimately allow students to be more successful in a shorter timeframe, in their graduate careers at MSU. A common, sequential set of core courses will also facilitate development of a cohesive peer group. Additional course requirements, if needed, will be determined in collaboration with each dual major program.

First-year molecular plant sciences students will also perform research rotations in molecular plant sciences laboratories. These experiences will lead to peer interactions and collaborations that will strengthen their research and career development. Because the rotation laboratories will be in a wide range of academic units and the students will also be taking required courses for their second major, molecular plant sciences students will broadly impact other disciplines including agricultural, bioenergy, ecological, and evolutionary research and applications.

b. Academic Programs Catalog Text:

**Dual Major**

The interdepartmental dual major in molecular plant sciences is administered by the College of Natural Science. The dual major is available only to those students who plan to complete a Ph.D. degree program that involves plant molecular biology and who have a graduate major at Michigan State University. The student does not have the option of completing a dual major in plant molecular biology alone.

The educational objectives of the interdepartmental program are to prepare students to:

1. function as independent scientists able to develop new knowledge and understanding about the molecular processes driving plant energy status, metabolism, growth, development, gene regulation, evolution, plant stress tolerance, and environmental interactions;
2. devise and test informative hypotheses and apply key molecular and omics approaches to problems in these areas, and;
3. engage in planning, performing, and management of independent and collaborative research and teaching.

In addition to meeting the requirements of the University and of the College of Natural Science, students must meet the requirements specified below.
Admission

In order to enroll in the dual major in plant molecular biology a student must also have been admitted to a major at Michigan State University. A minimum undergraduate grade-point average of 3.0 and a sufficient background in biology, chemistry, physics, mathematics, and/or computer science is required for admission to the dual major. In special cases, an applicant who has deficiencies in background courses may be admitted to the dual major on a provisional basis.

The Molecular Plant Sciences Graduate Admissions Committee composed of members of the molecular plant sciences faculty and the primary department/program admissions committee reviews applications for admission and recommends acceptance of applicants for admission. The application process is composed of two parts: a standard MSU application to the primary department/program of the student’s choice and a one-page description of the student’s interest in the molecular plant sciences program. Applicants suitable will be forwarded to the Plant Science Recruitment director for onsite interviews. Offer letters will be co-signed by the molecular plant sciences program and the student’s primary department.

Guidance Committee

During the first year of enrollment in the dual major, the student and a member of the molecular plant sciences faculty who will serve as the student’s major professor will constitute a guidance committee that will assist in planning the student’s program of study. At least two members of the molecular plant sciences faculty shall be members of the committee along with two faculty members from the student’s primary department. The student’s program of study will involve molecular plant sciences and a major in the student’s department. The program shall be planned in accordance with the statement on Dual Major Doctoral Degrees in the Graduate Education section of this catalog.

Students in the dual major in molecular plant sciences are expected to do research rotations in three laboratories, attend seminars and engage in other programmatic activities.

Requirements for the Dual Major in Molecular Plant Sciences

1. The course requirements will be specified in a graduate handbook in consultation with the student’s major professor and guidance committee.
2. Three graduate seminar courses in subjects relevant to molecular plant sciences.
3. Twenty-four credits in Doctoral Dissertation Research (course number 999) from the student’s departmental major.
4. Pass a comprehensive examination that will be defined by the requirements of the student’s major department and that will include a written examination in which the student demonstrates a knowledge of molecular plant sciences as determined by the guidance committee.
5. Submit and defend a dissertation that, in the judgment of the student’s guidance committee, shows original treatment of an important scientific question.

Effective Spring 2018.

1. Request to change the requirements for the Bachelor of Science degree in Human Biology in the College of Natural Science.
   a. Under the heading Requirements for the Bachelor of Science Degree in Human Biology make the following changes:
      (1) In item 3. f. (2) change the credits of ‘MTH 153H’ from ‘3’ to ‘4’.
      (2) In item 3. g. renumber (5) to (4) and add the following new item (4):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 241</td>
<td>Physics for Cellular and Molecular Biologists I</td>
<td>4</td>
</tr>
<tr>
<td>PHY 242</td>
<td>Physics for Cellular and Molecular Biologists II</td>
<td>4</td>
</tr>
<tr>
<td>PHY 251</td>
<td>Introductory Physics Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>PHY 252</td>
<td>Introductory Physics Laboratory II</td>
<td>1</td>
</tr>
</tbody>
</table>
3. Request to change the requirements for the Bachelor of Science degree in Zoology in the Department of Integrative Biology.

The concentrations in the Bachelor of Science degree in Zoology are noted on the student’s academic record when the requirements for the degree have been completed.

a. Under the heading Requirements for the Bachelor of Science Degree in Zoology make the following changes in the Zoo and Aquarium Science concentration:

(1) In item (1) delete the following course:
IBIO 320 Developmental Biology 4
Add the following course:
IBIO 368 Animal Biology and Conservation 3
Change the total credits of item (1) from ‘31’ to ‘30’.

Effective Summer 2018.

COLLEGE OF NURSING

1. Request to change the requirements for the Master of Science in Nursing degree in Nursing. The University Committee on Graduate Studies (UCGS) will consider this request at its September 11, 2017 meeting.

The concentrations in the Master of Science in Nursing degree in Nursing are noted on the student’s academic record when the requirements for the degree have been completed.

NOTE: The concentrations in Nurse Practitioner, Adult-Gerontology Clinical Nurse Specialist with Education, and Nurse Anesthesia will no longer be available. No new students are to be admitted to any of these concentrations effective Fall 2018. No students are to be readmitted to any of these concentrations effective Fall 2023, coding for these concentrations will be discontinued and the concentrations will no longer be available. Students who have not met the requirements for the concentration prior to Fall 2023 will no longer have the option for the concentration to be noted on the transcript.

a. Under the heading Admission make the following changes:

(1) In item 3., delete ‘and Nurse Anesthesia’.
(2) Delete items 5. and 6.
(3) Renumber items 7. through 10. to items 5. through 10. respectively.
(4) In new item 6. remove the reference to ‘with education, or nurse anesthetist’.
b. Under the heading **Requirements for the Master of Science in Nursing Degree in Nursing** replace the entire entry with the following:

A total of 45 to 48 credits is required for the degree under Plan B (without thesis) depending on the student’s area of concentration. Students must meet the requirements specified below:

<table>
<thead>
<tr>
<th>C R E D I T S</th>
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<tbody>
<tr>
<td>1. All of the following courses (15 credits):</td>
</tr>
<tr>
<td><strong>NUR 902</strong> Scientific Foundations for the Advanced Practice Nurse</td>
</tr>
<tr>
<td><strong>NUR 905</strong> Patient Safety, Quality Improvement and Quality Management in Healthcare</td>
</tr>
<tr>
<td><strong>NUR 907</strong> Advanced Pathophysiology for Advanced Practiced Registered Nurses</td>
</tr>
<tr>
<td><strong>NUR 908</strong> Advanced Physical Assessment for Advanced Practiced Registered Nurses</td>
</tr>
<tr>
<td><strong>NUR 909</strong> Advanced Pharmacology for Advanced Practiced Registered Nurses</td>
</tr>
<tr>
<td>2. Complete one of the following three concentrations:</td>
</tr>
<tr>
<td><strong>Nurse Practitioner-Family</strong> (30 credits):</td>
</tr>
<tr>
<td><strong>EPI 840</strong> Clinical Epidemiology for Healthcare Practice</td>
</tr>
<tr>
<td><strong>NUR 912</strong> Health Promotion - Family</td>
</tr>
<tr>
<td><strong>NUR 915</strong> Clinical Diagnosis and Management I - Family</td>
</tr>
<tr>
<td><strong>NUR 916</strong> Clinical Diagnosis and Management II - Family</td>
</tr>
<tr>
<td><strong>NUR 917</strong> Clinical Diagnosis and Management III - Family</td>
</tr>
<tr>
<td><strong>NUR 918</strong> Clinical Diagnosis and Management IV - Family</td>
</tr>
<tr>
<td><strong>Nurse Practitioner-Adult-Gerontological Primary Care</strong> (30 credits):</td>
</tr>
<tr>
<td><strong>EPI 840</strong> Clinical Epidemiology for Healthcare Practice</td>
</tr>
<tr>
<td><strong>NUR 913</strong> Health Promotion – Adult-Gerontology</td>
</tr>
<tr>
<td><strong>NUR 925</strong> Clinical Diagnosis and Management I – Adult-Gerontology</td>
</tr>
<tr>
<td><strong>NUR 926</strong> Clinical Diagnosis and Management II – Adult-Gerontology</td>
</tr>
<tr>
<td><strong>NUR 927</strong> Clinical Diagnosis and Management III – Adult-Gerontology</td>
</tr>
<tr>
<td><strong>NUR 928</strong> Clinical Diagnosis and Management IV – Adult-Gerontology</td>
</tr>
<tr>
<td><strong>Adult-Gerontology Clinical Nurse Specialist</strong> (33 credits):</td>
</tr>
<tr>
<td><strong>NUR 904</strong> Health Policy and Advocacy</td>
</tr>
<tr>
<td><strong>NUR 906</strong> Leadership in Complex Health Systems</td>
</tr>
<tr>
<td><strong>NUR 931</strong> Wellness Promotion for Diverse Populations</td>
</tr>
<tr>
<td><strong>NUR 932</strong> Clinical Decision Making and Management of Acute Chronic Complex Conditions</td>
</tr>
<tr>
<td><strong>NUR 933</strong> Clinical Nurse Specialist Advanced Practice Role Development I</td>
</tr>
<tr>
<td><strong>NUR 934</strong> Clinical Nurse Specialist Advanced Practice Role Development II</td>
</tr>
<tr>
<td><strong>NUR 935</strong> Clinical Nurse Specialist Advanced Practice Role Development III</td>
</tr>
<tr>
<td>3. Successful completion of a scholarly project.</td>
</tr>
</tbody>
</table>

**Part–time Students**

Although many nursing students pursue the master's degree on a part–time basis, all degree candidates will be expected to maintain minimum degree progress standards established by the College and published in the **College of Nursing Graduate Student Handbook**. Students are also expected to complete at least one course per semester until the degree is earned.

**Academic Standards**

A cumulative grade–point average of 3.0 and a grade of 3.0 in each nursing course is required.

**Transfer Credits**

Up to 25% of graduate course work **May be transferred into the Master of Science in Nursing program from other accredited programs upon approval of the College of Nursing, i.e., Commission on Collegiate Nursing Education (CCNE), National League for Nursing Commission for Nursing Education Accreditation (NLN CNEA), and/or Accreditation Commission for Education in Nursing (ACEN).**
Time Limit

The time limit for completing the degree is six years from the beginning of the first semester in which credit toward the degree was earned.

Effective Fall 2018.

2. Request to change the requirements for the Doctor of Nursing Practice degree in Nursing Practice. The University Committee on Graduate Studies (UCGS) will consider this request at its September 11, 2017 meeting.

The concentrations in the Doctor of Nursing Practice degree in Nursing Practice will be noted on the student’s academic record when the requirements for the degree have been completed.

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

To be considered for admission to the Doctor of Nursing Practice, post B.S.N. entry program, an applicant must:

1. Submit a university application for admission and a curriculum vita.
2. Complete a Bachelor of Nursing degree from an accredited college or university.
3. Possess a current unrestricted license to practice nursing as a registered nurse in the applicant’s state or country. For those applicants practicing in Michigan, a current registered nurse Michigan license is required. Applicants who hold registered nurse licensure from other states or countries and who are in the Nurse Practitioner and Nurse Anesthesia concentration may be admitted provisionally with the requirement that a United States and Michigan registered nurse license must be obtained prior to progression to clinical courses.
4. A minimum grade-point average of 3.0 (4.0 scale) for total credits completed during the second-half of the four-year baccalaureate nursing program.
5. One year of current full-time clinical experience or equivalent as a registered nurse in an intensive care unit is required for the Nurse Anesthesia concentration.
6. Complete a 3 credit undergraduate or graduate statistics course with a grade of 3.0 (4.0 scale) or better within the last five years.
7. Submit a written essay that addresses the applicant’s career goals and motivations for graduate study in the selected area of specialty nursing practice: nurse practitioner, adult-gerontology clinical nurse specialist, or nurse anesthetist.
8. Submit three letters of recommendation. The reference letters must be from a source that has direct knowledge of the applicant’s work and educational experience specifying the applicant’s ability to do graduate work.
9. Complete an admission interview with the College of Nursing faculty. Recommendations for admission are made by the faculty committee to the Dean of the College based on the requirements for admission and the personal interview.
10. If the applicant’s native language is not English, the applicant must complete the Test of English as a Foreign Language with a total score of 580 (paper version) or 21 (computer version). Equivalent scores on the English Language Center Test may be submitted.
11. If the applicant’s native language is not English, the applicant must complete the Educational Testing Service Test of Spoken English (TSE) with a score of 50 or above.

b. Under the heading Requirements for the Doctor of Nursing Practice Degree in Nursing Practice replace the entire entry with the following:

1. All of the following courses: (28 credits)
   NUR 902  Scientific Foundations for the Advanced Practice Nurse 3
   NUR 903  Healthcare Informatics 3
   EPI 840  Clinical Epidemiology for Healthcare Practice 3
   NUR 904  Health Policy and Advocacy 3
   NUR 905  Patient Safety, Quality Improvement and Quality Management in Healthcare 3
   NUR 906  Leadership in Complex Health Systems 3
   NUR 995  Doctor of Nursing Practice Project I 4
   NUR 996  Doctor of Nursing Practice Project II 3
   NUR 997  Doctor of Nursing Practice Project III 3
2. Complete one of the following concentrations:

**Nurse Practitioner-Family** (42 credits)
All of the following courses (9 credits):

- NUR 907 Advanced Pathophysiology for the Advanced Practice Registered Nurse 3
- NUR 908 Advanced Physical Assessment for the Advanced Practice Registered Nurse 3
- NUR 909 Advanced Pharmacology for the Advanced Practice Registered Nurse 3
- NUR 912 Health Promotion – Family 3
- NUR 915 Clinical Diagnosis and Management I - Family 6
- NUR 916 Clinical Diagnosis and Management II - Family 6
- NUR 917 Clinical Diagnosis and Management III - Family 6
- NUR 918 Clinical Diagnosis and Management IV – Family 6
- NUR 919 Clinical Diagnosis and Management V – Clinical Immersion - Family 6

**Nurse Practitioner-Adult-Gerontological Primary Care** (42 credits)

- NUR 907 Advanced Pathophysiology for the Advanced Practice Registered Nurse 3
- NUR 908 Advanced Physical Assessment for the Advanced Practice Registered Nurse 3
- NUR 909 Advanced Pharmacology for the Advanced Practice Registered Nurse 3
- NUR 913 Health Promotion – Adult-Gerontology 3
- NUR 925 Clinical Diagnosis and Management I - Adult-Gerontology 6
- NUR 926 Clinical Diagnosis and Management II - Adult-Gerontology 6
- NUR 927 Clinical Diagnosis and Management III - Adult-Gerontology 6
- NUR 928 Clinical Diagnosis and Management IV - Adult-Gerontology 6
- NUR 929 Clinical Diagnosis and Management V – Clinical Immersion - Adult-Gerontology 6

**Adult-Gerontology Clinical Nurse Specialist (CNS)** (42 credits)
All of the following courses:

- NUR 907 Advanced Pathophysiology for the Advanced Practice Registered Nurse 3
- NUR 908 Advanced Physical Assessment for the Advanced Practice Registered Nurse 3
- NUR 909 Advanced Pharmacology for the Advanced Practice Registered Nurse 3
- NUR 931 Wellness Promotion for Diverse Populations 3
- NUR 932 Clinical Decision Making and Management of Acute Chronic Complex Conditions 6
- NUR 933 Clinical Nurse Specialist Advanced Practice Role Development I 6
- NUR 934 Clinical Nurse Specialist Advanced Practice Role Development II 6
- NUR 935 Clinical Nurse Specialist Advanced Practice Role Development III 6
- NUR 936 Clinical Nurse Specialist Specialty Role Immersion I 3
- NUR 937 Clinical Nurse Specialist Specialty Role Immersion II 3

**Nurse Anesthesia** (64 credits)
All of the following courses:

- ANTR 541 Gross Anatomy for Nurse Anesthetists 4
- NUR 908 Advanced Physical Assessment for the Advanced Practice Registered Nurse 3
- NUR 909 Advanced Pharmacology for the Advanced Practice Registered Nurse 3
- NUR 966 Applied Chemical and Physical Principles of Anesthesia Practice 3
- NUR 967 Basic Principles of Anesthesia 4
- NUR 968 Advanced Physiology and Pathophysiology for Anesthesia Practice I 4
- NUR 969 Advanced Physiology and Pathophysiology for Anesthesia Practice II 4
- NUR 970 Pharmacology for Nurse Anesthesia I 3
3. **Admission with a Post-Master's Degree**

Admission to the Post-Master’s Doctor of Nursing Practice degree program is limited to:

1. master’s prepared registered nurses graduated from an accredited master’s program in nursing or;
2. those who hold a B.S.N. from an accredited nursing program and a master’s degree that qualified them to sit for national certification as a Certified Registered Nurse Anesthetist (CRNA). Each applicant’s transcripts will be reviewed to determine gap between D.N.P. outcomes and their prior education. All candidates will complete a project, practicum, identified courses, and a minimum of 23 credits. Students will have an option to complete an additional APRN specialty if requested, and be admitted to a concentration.

In addition to meeting the requirements of the College of Nursing, and the admission requirements for the Doctor of Nursing Practice Degree in Nursing Practice, students must meet the requirements specified below.

1. All of the following courses (23 to 30 credits):
   - NUR 995 Doctor of Nursing Practice Project I 4
   - NUR 996 Doctor of Nursing Practice Project II 3
   - NUR 997 Doctor of Nursing Practice Project III 3
   - Elective – or core courses as determined by review of previous APRN education 13 to 20

2. Completion of a minimum of 1000 supervised clinical hours between the master’s degree program and the Doctor of Nursing Practice degree program. Students will enroll in NUR 990 Special Problems to complete an individualized clinical learning plan that will achieve the remaining required hours.

Effective Fall 2018.
PART II - NEW COURSES AND CHANGES

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

FSC 342  Food Safety and Hazard Analysis Critical Control Point Program
Fall of every year. 3(3-0) P: (FSC 211 or concurrently) or (HNF 150 or concurrently) or (HNF 260 or concurrently) or a prior or concurrent basic course in microbiology, chemistry or biological sciences. R: (FSC 211 or concurrently) or (HNF 150 or concurrently) or a prior or concurrent basic course in microbiology, chemistry or biological sciences.
Sources of microbiological, chemical and physical hazards; minimizing microbial growth and survival; good manufacturing, cleaning and sanitation practices; Hazard Analysis Critical Control Point Programs in food processing and food service.
SA: FSC 442
Effective Fall 2014  Effective Fall 2017

FSC 430  Food Processing: Fruits and Vegetables
Fall of every year. 3(2-3) P: FSC 325  P: (FSC 211) and (FSC 325 or BE 350) R: Not open to freshmen or sophomores.
Fruit and vegetable composition and quality indices. Harvest technology, post-harvest physiology, and preparatory systems. Principles and applications of thermal processing, freezing, and specialized techniques.
SA: FSC 330
Effective Fall 2017  Effective Fall 2018

FSC 431  Food Processing: Cereals
Spring of every year. 3(2-3) P: FSC 325  P: (FSC 211) and (FSC 325 or BE 350) R: Not open to freshmen or sophomores.
SA: FSC 331
Effective Fall 2017  Effective Fall 2018

FSC 432  Food Processing: Dairy Foods
Fall of every year. 3(2-3) P: FSC 325  P: (FSC 211) and (FSC 325 or BE 350) R: Not open to freshmen or sophomores.
Principles for production and processing of safe and wholesome dairy foods. Practical experience in safety and quality assurance systems and in the processing of fluid milk, cultured products, cheese, and frozen desserts.
SA: FSC 332
Effective Fall 2017  Effective Fall 2018

FSC 433  Food Processing: Muscle Foods
Spring of every year. 3(2-3) Interdepartmental with Animal Science. P: FSC 325  P: (FSC 211) and (FSC 325 or BE 350) R: Not open to freshmen or sophomores.
Manufacturing practices and principles of fresh, frozen, and cured meats and fish. Processed products from muscle foods. Product formulation and quality control.
SA: FSC 333
Effective Fall 2017  Effective Fall 2018

FSC 440  Food Microbiology
Fall of every year. Spring of every year. 3(3-0) Interdepartmental with Microbiology and Molecular Genetics. P: (MMG 201 or MMG 301) and completion of Tier I writing requirement. R: Not open to freshmen.
Major groups of microorganisms of importance to the food industry. Ecological, physiological, and public health aspects.
Effective Fall 2014  Effective Fall 2016
FSC 442  Hazard Analysis Critical Control Point Training and Certification
Fall of every year. 1(1-0) P: (FSC 325) and (FSC 440 or concurrently) RB: Advanced course work in food science RB: FSC 440 R: Open to juniors or seniors.
Design and implementation of Hazard Analysis Critical Control Point (HACCP) programs for the food industry. Offered second half of semester.
Effective Fall 2017 Effective Fall 2018

FSC 470  Integrated Approaches to Food Product Development
Spring of every year. 3(2-3) P: (FSC 401 and FSC 410) and (FSC 440 or concurrently) P: FSC 310 and FSC 401 and FSC 440 RB: FSC 325 R: Open to seniors or graduate students.
Food product development including obtaining, screening, and selecting ideas. Integration of food processing, chemistry, analysis, and microbiology for the design, production, and evaluation of a food product.
Effective Fall 2014 Effective Spring 2018

HNF 250  Contemporary Issues in Human Nutrition
Fall of every year. 2(1-2) 3(2-2) P: (HNF 150) and completion of Tier I writing requirement R: Open to students in the Nutritional Sciences Major or in the Lyman Briggs Nutritional Sciences Coordinate Major.
Effective Fall 2016 Effective Fall 2018

HNF 320  Professional Practice of Dietetics and Nutrition
Spring of every year. 3(4-0) P: HNF 150 or HNF 260 P: HNF 150 R: Open to sophomores or juniors or seniors in the Dietetics Major.
Scope of the profession of dietetics. Foundation knowledge and skills for dietetics. Food patterns for health and disease management.
SA: HNF 220
Effective Fall 2014 Effective Fall 2017

HNF 375  Community Nutrition
Fall of every year. Summer of every year. 3(3-0) P: HNF 150 or HNF 260 P: HNF 150 R: Open to sophomores or juniors or seniors.
Guidelines for dietary and anthropometric components of nutritional status, including health surveys. Agencies and programs that address food and nutritional needs of target populations throughout the life cycle.
Effective Fall 2014 Effective Summer 2017

HNF 406  Global Foods and Culture
Spring of every year. 3(3-0) P: (HNF 150 or concurrently) or (HNF 260 or concurrently) P: HNF 150 or concurrently RB: ISS course or concurrently. R: Open to juniors or seniors.
Effective Fall 2014 Effective Fall 2017

HNF 415  Global Nutrition
Spring of every year. 3(3-0) P: HNF 350
NEW
Burden, causes, and consequences of undernutrition globally. Interaction of nutrition with illness, obesity, and reproductive health. Approaches, policies, and programs to prevent undernutrition.
Effective Fall 2017
HNF 440  Foodservice Operations  
Fall of every year. 3(3-0) P: (HNF 150 or HNF 260) and (FSC 342 or concurrently) P: HNF 150  
R: Open to juniors or seniors in the Dietetics Major.  
Principles, processes and control strategies in foodservice operations. Menu planning,  
procurement, and on-premise storage and issuance. Purchasing, ethics, production,  
safety and sanitation.  
Effective Fall 2014  Effective Fall 2017

HNF 450  Nutrition in the Prevention and Treatment of Disease  
Spring of every year. 4(4-0) 3(4-0) P: (HNF 250 and HNF 350) and completion of Tier I writing  
requirement  
Nutrition and its relationship to health and disease using a basic research approach.  
SA: HNF 464  
Effective Spring 2017  Effective Spring 2019

HNF 456  Eating Disorders  
Summer of every year. On Demand. 3(3-0) P: HNF 150 or HNF 260  
Treatment and prevention of anorexia nervosa, bulimia nervosa, and other eating  
disorders.  
Effective Fall 2014  Effective Fall 2017

HNF 457  Sports and Cardiovascular Nutrition  
Spring of every year. 3(3-0) Interdepartmental with Kinesiology. P: (HNF 150 or HNF 260) and  
(BSL 250 or BSL 340 or BSL 431) and (BMB 200 or BMB 461 or KIN 310)  
Nutrition for optimizing sport training, recovery, and performance; power, intermittent, and  
endurance sports.  Role of nutrition, physical activity and exercise on cardiovascular and  
overall health.  
Effective Fall 2014  Effective Fall 2017

HNF 491  Topics in Human Nutrition  
Fall of every year. Spring of every year. Summer of every year. 1 to 4 credits. A student may earn a  
maximum of 10 credits in all enrollments for this course. P: HNF 150 or HNF 260  
Selected topics of current interest in human nutrition.  
Effective Spring 2017  Effective Fall 2017

HNF 824  Nutrition Policies and Programs  
Fall of every year. Fall of even years. 1(2-0) P: HNF 150 or HNF 260  or approval of department  
RB: prior course in nutrition  
Overview of U.S. nutrition policies and programs, including case studies, development and  
methods of evaluation.  
Effective Fall 2013  Effective Fall 2017

HNF 832  Advanced Clinical Nutrition  
Spring of every year. 3(3-0) P: HNF 823  
Advanced topics in clinical nutrition.  
Effective Spring 2018

COLLEGE OF ENGINEERING

BME 899  Master's Thesis Research  
Fall of every year. Spring of every year. Summer of every year. 1 to 8 credits. A student may earn a  
maximum of 24 credits in all enrollments for this course.  
Master's thesis research.  
Effective Fall 2016  Effective Summer 2017
BME 999  Doctoral Dissertation Research  
Fall of every year. Spring of every year. Summer of every year. 1 to 36 credits. A student may earn a maximum of 36 credits in all enrollments for this course. 
Doctoral dissertation research.  
Request the use of the Pass-No Grade (P-N) system.  
**Effective Fall 2016**  
**Effective Summer 2017**

CSE 845  Multi-disciplinary Research Methods for the Study of Evolution  
Spring of every year. 3(3-0) Interdepartmental with Microbiology and Molecular Genetics and Zoology. Interdepartmental with Integrative Biology and Microbiology and Molecular Genetics.  
Techniques for engaging in multi-disciplinary research collaborations, including biology, computer science, and engineering. Students engage in group projects to answer fundamental questions about the dynamics of actively evolving systems including both natural and computational. Multi-disciplinary teams will learn to overcome discipline-specific language and conceptual issues. Experimental design, statistical analysis, data visualization, and paper and grant writing for multi-disciplinary audiences.  
**Effective Fall 2012**  
**Effective Fall 2016**

ECE 932  Advanced Topics in Analog Circuits  
Spring of odd years. 3(3-0) 
REINSTATEMENT Variable topics in advanced circuit analysis.  
**Effective Spring 2018**

**COLLEGE OF HUMAN MEDICINE**

EPI 816  Perinatal Epidemiology  
Fall of every year. Spring of even years. 3(3-0) RB: EPI 810 R: Open to graduate students in the Department of Epidemiology and Biostatistics or approval of department.  
Epidemiology of adverse health states in pregnancy and the puerperium. Impact of these health states on subsequent child development.  
SA: HM 816  
**Effective Fall 2014**  
**Effective Spring 2017**

EPI 819  Spatial Epidemiology and Medical Geography  
Spring of every year. 3(3-0) Interdepartmental with Geography. P: EPI 810 or GEO 435 or GEO 865 R: Open to graduate students in the Department of Epidemiology and Biostatistics or in the Department of Geography or approval of department.  
Concepts, techniques, and utilization of spatio-epidemiologic analyses for human health.  
SA: HM 819  
**Effective Fall 2014**  
**Effective Spring 2017**

EPI 836  Practicum in Epidemiological Methods  
Fall of every year. 3(3-0) P: EPI 812 and (EPI 826 or concurrently) P: (EPI 812 or concurrently) and (EPI 826 or concurrently) R: Open to graduate students in the Department of Epidemiology and Biostatistics or approval of department.  
Data management, analysis, interpretation and presentations using public data sets.  
**Effective Fall 2015**  
**Effective Fall 2016**

HM 804  Public Health Administration  
Public Health Policy and Administration  
Spring 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. R: Open to master's students in the Public Health major or in the Public Health Specialization.  
R: Open to master's students in the Public Health Major.  
Planning, organization, administration, management, evaluation and policy analysis of public health. Legal and ethical considerations of public health. Structural, operational, leadership and components of health policy and public health administration. Community health assessment, advocacy and evaluation within public health agencies and programs. Major business systems used for administration of public health agencies and programs.  
**Effective Spring 2009**  
**Effective Summer 2017**
HM 811  Public Health in the Middle East and North Africa  
Summer of every year. 3(3-0) 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.

Introduction to public health in Middle East and North Africa; demography, disease patterns, food security, water, climate change. Effects of social justice and governance issues on public health such as health disparities, women/maternal and child health, aging, natural disasters and geopolitical conflicts. 

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.

DELETE COURSE

Effective Fall 2017

HM 821  Corporate Social Responsibility and Public Health: India  
Fall of odd years. 3(3-0) RB: Academic or professional background in public health and/or public health related discipline, undergraduate level health-related discipline R: Open to juniors or seniors or graduate students. Approval of college.

Overview of the public health, healthcare systems and their connection to business in India. How business is impacted by public health and how public health is impacted by business. Based in Mumbai. Classroom learning and field experiences with key stakeholders from the political, business and health related fields.

DELETE COURSE

Effective Fall 2017

HM 867  Demography, Population Dynamics and Public Health  
Spring of even years. 3(3-0) RB: Academic or professional background in public health or public health related discipline, experience with databases RB: Academic or professional background in public health or public health related discipline R: Open to students in the Public Health Major or approval of college.

Methods and concepts in the study of population change. Analytical approaches for analyzing and interpreting population changes. Applications in planning, policy-making and administration. Methods and concepts in the study of population change. Approaches for analyzing and interpreting population changes. Applications for public health planning, policy, programs, administration and evaluation.

Effective Spring 2012  Effective Summer 2017

ANTR 211  Human Tissues and Cells for Medical Illustrators  
Spring of every year. Grand Rapids Summer of every year. 3(2-2) R: Not open to students in the College of Natural Science. Approval of department. Not open to students with credit in ZOL 408. Not open to students with credit in IBIO 408.

Elementary structure and function of human tissues, cells, and representative biomolecular classes. Virtual histology laboratory.

Effective Spring 2015  Effective Spring 2017

ANTR 440  Human Anatomic Variation  
Spring of even years. 2(2-0) P: ANTR 350 or KIN 216 or ZOL 328 P: ANTR 350 or KIN 216 or IBIO 328

Human anatomical variation including developmental, pathological and accidental.

Effective Spring 2015  Effective Fall 2016

ANTR 541  Gross Anatomy for Nurse Anesthetists  
Fall of every year. 4(3-2) R: Approval of department. Not open to students with credit in ANTR 551.

Clinically oriented human regional gross anatomy for nurse anesthetists using prosections, case studies, and medical imaging.

Effective Summer 2013  Effective Fall 2016
LYMAN BRIGGS COLLEGE

LB 268  Introduction to Health Care Policy and Organization
The Business of Medicine
Summer of every year. 3(3-0) P: Completion of Tier I Writing Requirement
Introductory theories, concepts, and processes for policy, organization, and administration in health care. Business modeling for medical practice.
Effective Summer 2015 Effective Summer 2018

LB 492  Senior Seminar  (W)
Fall of every year. Spring of every year. Summer of every year. 4(4-0) P: ((LB 330 or LB 331 or LB 332 or LB 333 or LB 334 or LB 335 or LB 336 or LB 355 or LB 490E) or approval of college) and completion of Tier I writing requirement P: ((LB 321A or concurrently) or (LB 321B or concurrently) or (LB 322A or concurrently) or (LB 322B or concurrently) or (LB 323A or concurrently) or (LB 323B or concurrently) or (LB 323A or concurrently) or (LB 324A or concurrently) or (LB 324B or concurrently) or (LB 325A or concurrently) or (LB 325B or concurrently) or (LB 326A or concurrently) or (LB 326B or concurrently) or (LB 327A or concurrently) or (LB 327B or concurrently)) or ((LB 326A or concurrently) or (LB 326B or concurrently) or (LB 327A or concurrently) or (LB 327B or concurrently)) R: Open to juniors or seniors in the Lyman Briggs College or in the Science, Technology, Environment and Public Policy Specialization. R: Open to juniors or seniors in the Lyman Briggs College.
Selected problems in the study of science and technology as human activities, using philosophical, historical, literary, social science or interdisciplinary perspectives or methods. Development and defense of thesis paper. Selected problems in the study of science and technology as human activities, using philosophical, historical, literary, social science or interdisciplinary perspectives or methods. Development and defense of thesis paper or project.
SA: LBS 492
Effective Spring 2014 Effective Fall 2017

COLLEGE OF NATURAL SCIENCE

BMB 864  Plant Biochemistry
Plant Specialized Metabolism
Fall of every year. Spring of every year. 3(3-0) Interdepartmental with Plant Biology. P: BMB 461 or BMB 462 or PLB 866 or PLB 866 RB: (BMB 401 or BMB 462) and prior undergraduate course in plant physiology. RB: It is recommended that students be enrolled in a graduate program related to plant molecular sciences (MPS, PLB, BMB, HRT, PSM, GEN, CMB, MMG, ENT, FOR, PBGB, CSS), although students with a strong agronomic, biochemical, environmental, or ecological focus to their plant research may also find the course useful. R: Open to graduate students.
Biochemistry unique to photosynthetic organisms. Photosynthetic and respiratory electron transport, nitrogen fixation, carbon dioxide fixation, lipid metabolism, carbon partitioning, cell walls, sulfur and nitrogen metabolism and specialized metabolism including isoprenoids, phenylpropanoids and alkaloids. Specialized metabolism unique to photosynthetic organisms including aspects of nitrogen and sulfate assimilation and essential amino acid synthesis relevant to specialized metabolism, vitamin synthesis, mono-, di-, tri- and tetra-terpenoid synthesis, synthesis of phenylpropanoids and other aromatic compounds and synthesis of various alkaloids.
SA: BCH 864
Effective Fall 2014 Effective Fall 2017

GLG 863  Mineral-Water Interactions
Fall of every even years. 4(3-2) Interdepartmental with Crop and Soil Sciences. R: Open only to graduate students in the Department of Crop and Soil Sciences or Department of Geological Sciences or Department of Geography.
REINSTATEMENT  Mineralogy, petrology and geochemistry of fluid-rock reactions in geologic, sedimentary and geochemical cycles. Rock and mineral weathering, soil formation, genesis and burial diagenesis of sediments and sedimentary rocks, and metamorphism.
Effective Fall 2017
NEU 415 Neuroinformatics and Quantitative Reasoning  
Fall of every year. 3(3-0) P: (NEU 301 and (NEU 302 or concurrently)) and completion of Tier I writing requirement) and (MTH 124 or MTH 132 or MTH 152H or LB 118) and (STT 201 or STT 231 or STT 421 or PSY 295) R: Open to undergraduate students in the Neuroscience Major or in the Lyman Briggs Neuroscience Coordinate Major.

NEW Quantitative reasoning and statistical methods for querying internet databases and understanding basic neuroscience models.
Effective Fall 2017

NEU 839 Systems Neuroscience  
Spring of every year. 4(4-0) Interdepartmental with Human Anatomy and Pharmacology and Toxicology and Physiology and Psychology and Zoology. Interdepartmental with Human Anatomy and Integrative Biology and Pharmacology and Toxicology and Physiology and Psychology P: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Agriculture and Natural Resources, Natural Science, Social Science, and Veterinary Medicine. R: Open to graduate students or human medicine students or osteopathic medicine students in the College of Natural Science or in the College of Agriculture and Natural Resources or in the College of Human Medicine or in the College of Osteopathic Medicine or in the College of Social Science or in the College of Veterinary Medicine.
Anatomy, pharmacology, and physiology of multicellular neural systems. Sensory, motor, autonomic, and chemo-regulatory systems in vertebrate brains.
SA: ANT 839
Effective Fall 2003 Effective Fall 2016

PLB 424 Algal Biology  
Fall of even years. Summer of odd years. 4(2-4) 3(2-2) Interdepartmental with Integrative Biology. P: (BS 162 or LB 144 or BS 182H) and (BS 172 and completion of Tier I writing requirement) P: (BS 162 or LB 144 or BS 182H) and ((BS 172 or BS 192H) and completion of Tier I writing requirement) RB: IBIO 355 and IBIO 355L
Algal taxonomy, systematics, physiology, ecology, and environmental assessment. Lab focus on identification of freshwater algal genera collected from regional habitats.
SA: BOT 424
Effective Fall 2016 Effective Fall 2017

PLB 498 Undergraduate Research  
Fall of every year. Spring of every year. Summer of every year. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: (BS 161 and BS 162 and BS 171 and BS 172) or (LB 144 and LB 145) or ((BS 181H and BS 182H and BS 191H and BS 192H) and completion of Tier I writing requirement) R: Approval of department.
Laboratory and/or field research in an area of plant biology.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
SA: BOT 498
Effective Fall 2014 Effective Fall 2016

PLB 815 Molecular Plant Sciences Seminar  
Fall of every year. Spring of every year. 1(1-0) A student may earn a maximum of 12 credits in all enrollments for this course. R: Open to graduate students. Approval of department.
NEW Critical analysis of current literature based on student presentations.
Request the use of the Pass-No Grade (P-N) system.
Effective Spring 2017

PLB 856 Plant Molecular and Omic Biology  
Fall of every year. Spring of every year. 3(3-0) Interdepartmental with Biochemistry and Molecular Biology and Crop and Soil Sciences. Interdepartmental with Biochemistry and Molecular Biology RB: ZOL 341 RB: IBIO 341
Recent advances in genetics and molecular biology of higher plants. Advanced genetics and molecular biology of higher plants.
SA: BOT 856
Effective Summer 2010 Effective Fall 2017
PLB 866 Molecular Plant Physiology
Spring of every year. 3(3-0) Interdepartmental with Biochemistry and Molecular Biology. RB: It is recommended that students be enrolled in a graduate program in plant molecular science although students with a strong agronomic, environmental, or ecological focus to their plant research may also find the course useful. R: Open to graduate students.
NEW Molecular basis of the physiology of plants including photosynthesis, respiration, primary metabolism, water relations, and nutrition. Quantitative and systems approaches are emphasized. The topics and approaches complement the environmental/ecological approach in PLB 863. An advanced undergraduate course in biochemistry or plant physiology
Effective Fall 2017

STT 201 Statistical Methods
Fall of every year. Spring of every year. Summer of every year. 4(3-2) P: (MTH 103 or MTH 110 or MTH 116 or MTH 124 or MTH 132 or LB 118) or designated score on Mathematics Placement test P: (MTH 101 or MTH 102 or MTH 103 or MTH 110 or MTH 116 or MTH 124 or MTH 132 or LB 118) or designated score on Mathematics Placement test R: Open to undergraduate students. Not open to students with credit in STT 200 or STT 421.
Probability and statistics with computer applications. Data analysis, probability models, random variables, tests of hypotheses, confidence intervals, simple linear regression. Weekly lab using statistical software.
Effective Fall 2014 Effective Spring 2018

COLLEGE OF NURSING

NUR 324 Health Promotion and Disease and Injury Prevention I
Fall of every year. Spring of every year. Summer of every year. 3(2-3) P: HDFS 225 and HNF 260 P: HDFS 225 and HNF 150 C: NUR 205 concurrently and NUR 322 concurrently.
Principles and practices of health education, health promotion/behavior change, and health literacy through understanding epidemiology, determinants of health, and protective and predictive factors of health and well-being.
Effective Fall 2015 Effective Spring 2017

NUR 902 Scientific Foundations for the Advanced Practice Nurse
Fall of every year. 3(3-0) R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Analysis and translation of knowledge gained from the natural and social sciences to inform practice and provide a foundation for the Advanced Practice Nurse (APN) role.
Effective Fall 2018

NUR 903 Healthcare Informatics
Fall of every year. 3(3-0) P: NUR 902 or concurrently R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Examines health information systems and technologies in relationship to the delivery of efficient, high quality healthcare.
Effective Fall 2018

NUR 904 Health Policy and Advocacy
Fall of every year. Summer of every year. 3(3-0) P: NUR 902 or concurrently R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Examines the interactions between economics, ethical principles, social policies, legislative and regulatory processes that influence access, delivery and organization of healthcare.
Effective Fall 2018
NUR 905  Patient Safety, Quality Improvement and Quality Management in Healthcare  
Fall of every year. Spring of every year. 3(3-0) P: NUR 902 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW The application and evaluation of quality improvement initiatives through the use of theories, models and outcome measurements.  
Effective Fall 2018

NUR 906  Leadership in Complex Health Systems  
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: NUR 902 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW Exploration of the knowledge, skills and attributes required to assume leadership as an Advanced Practice Registered Nurse (APRN) in complex health systems.  
Effective Fall 2018

NUR 907  Advanced Pathophysiology for the Advanced Practice Registered Nurse  
Fall of every year. 3(3-0) R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW Emphasizes the advanced physiological and pathophysiological mechanisms of the body system to provide the Advanced Practice Registered Nurse a foundation for patient assessment, clinical decision making, and management.  
Effective Fall 2018

NUR 908  Advanced Physical Assessment for the Advanced Practice Registered Nurse  
Spring of every year. 3(2-3) R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW Comprehensive assessment includes the history, physical and psychological assessment of signs and symptoms, pathophysiologic changes, and psychosocial variations of the patient. Specific assessment related to Nurse Anesthetist (NA), Clinical Nurse Specialist (CNS) and Nurse Practitioner (NP) practice will be a focus in the practical experience of students.  
Effective Fall 2018

NUR 909  Advanced Pharmacology for the Advanced Practice Registered Nurse  
Spring of every year. Summer of every year. 3(3-0) R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW Application of pharmacotherapeutics for disease conditions including knowledge of pharmacokinetics, pharmacodynamics, pharmacogenetics, pharmacy and toxicology used to guide selection of interventions.  
Effective Fall 2018

NUR 912  Health Promotion – Family  
Spring of every year. Summer of every year. 3(3-0) P: NUR 907 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW Integration of concepts, theories and principles of population health, health promotion and disease prevention at the advanced practice level across the lifespan.  
Effective Fall 2018

NUR 913  Health Promotion – Adult-Gerontology  
Spring of every year. Summer of every year. 3(3-0) P: NUR 907 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW Integration of concepts, theories and principles of population health, health promotion and disease prevention at the advanced practice level for adults and older adults.  
Effective Fall 2018

NUR 915  Clinical Diagnosis and Management I - Family  
Fall of every year. 6(3-9) P: NUR 912 and NUR 907 and NUR 908 and NUR 909 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW Integration of health assessment and diagnostic testing to formulate differential diagnoses for common health conditions/problems across the lifespan.  
Effective Fall 2018
NUR 916  Clinical Diagnosis and Management II – Family
Spring of every year. 6(3-9) P: NUR 915 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Integration of assessment and intervention strategies for health promotion and common problems in the clinical setting across the lifespan. Effective Fall 2018

NUR 917  Clinical Diagnosis and Management III – Family
Summer of every year. 6(3-9) P: NUR 916 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Principles and management strategies used to construct personalized care plans for individuals including diverse and at risk populations across the lifespan. Effective Fall 2018

NUR 918  Clinical Diagnosis and Management IV – Family
Fall of every year. 6(2-12) P: NUR 917 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Integrates evidence-based strategies to deliver collaborative primary care practice across the wellness/illness continuum with patients across the lifespan. Effective Fall 2018

NUR 919  Clinical Diagnosis and Management V- Clinical Immersion – Family
Spring of every year. 6(2-12) P: NUR 918 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Evidence-based management of chronic stable and complex problems within collaborative practice in complex health systems across the lifespan. Effective Fall 2018

NUR 920  Translation of Research and Scientific Knowledge to a Community Setting
Translation of Research and Scientific Knowledge to a Practice Setting
Spring of every year. 3(3-0) R: Open to doctoral students in the Nursing Major or approval of college R: Open to doctoral students in the College of Nursing or in the Nursing Major or in the Nursing Practice Major.
NEW Systematic approach to translating evidenced based knowledge to inform nursing clinical practice, policy and delivery system change. Translation strategies to enhance public health status and health outcomes. Systematic approach to translating evidenced based knowledge to inform nursing practice, policy and delivery system change. Translation strategies to enhance health outcomes for those with chronic diseases and common health conditions. Effective Fall 2013 Effective Spring 2018

NUR 925  Clinical Diagnosis and Management I – Adult-Gerontology
Fall of every year. 6(3-9) P: NUR 908 and NUR 909 and NUR 913 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Integration of health assessment and diagnostic testing to formulate differential diagnoses for common health conditions/problems in adults and older adults Effective Fall 2018

NUR 926  Clinical Diagnosis and Management II – Adult-Gerontology
Spring of every year. 6(3-9) P: NUR 925 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Integration of assessment and intervention strategies for health promotion and common problems in the clinical setting for adults and older adults Effective Fall 2018

NUR 927  Clinical Diagnosis and Management III – Adult-Gerontology
Summer of every year. 6(3-9) P: NUR 926 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.
NEW Principles and management strategies used to construct personalized care plans for individuals including diverse and at risk populations with adults and older adults Effective Fall 2018
NUR 928  Clinical Diagnosis and Management IV – Adult-Gerontology  
Fall of every year. 6(2-12) P: NUR 927 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major. 
NEW Integrates evidence-based strategies to deliver collaborative primary care practice across the wellness/illness continuum for adults and older adults. 
Effective Fall 2018 

NUR 929  Clinical Diagnosis and Management V - Clinical Immersion – Adult-Gerontology  
Spring of every year. 6(2-12) P: NUR 928 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major. 
NEW Evidence-based management of chronic stable and complex problems within collaborative practice in complex health systems with adults and older adults 
Effective Fall 2018 

NUR 931  Wellness Promotion for Diverse Populations  
Spring of every year. 3(3-0) P: NUR 907 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major. 
NEW Introduction to the clinical nurse specialist’s (CNS) role and responsibilities with emphasis on population health, promotion of wellness, and disease prevention. 
Effective Fall 2018 

NUR 932  Clinical Decision Making and Management of Acute Chronic Complex Conditions  
Summer of every year. 6(3-9) P: NUR 902 and NUR 908 and NUR 931 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major. 
NEW Clinical Nurse Specialist role responsibilities in direct care incorporating a patient centered holistic approach in evidence-based management of healthcare. 
Effective Fall 2018 

NUR 933  Clinical Nurse Specialist Advanced Practice Role Development I  
Fall of every year. 6(3-9) P: NUR 909 and NUR 932 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major. 
NEW Role development of the Clinical Nurse Specialist (CNS) as an applied nurse scientist, expert in nursing practice and professional leader. 
Effective Fall 2018 

NUR 934  Clinical Nurse Specialist Advanced Practice Role Development II  
Spring of every year. 6(3-9) P: NUR 905 and NUR 933 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major. 
NEW Role development of the Clinical Nurse Specialist (CNS) expert in nursing practice, staff development, and quality improvement. 
Effective Fall 2018 

NUR 935  Clinical Nurse Specialist Advanced Practice Role Development III  
Summer of every year. 6(3-9) P: NUR 934 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major. 
NEW Demonstrate competency in developing, leading and participating in the elements of process/quality improvement using principles of improvement science. 
Effective Fall 2018 

NUR 936  Clinical Nurse Specialist Specialty Role Immersion I  
Fall of every year. 3(0-9) P: NUR 935 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major. 
NEW Students select a clinical emphasis in a particular area of interest for integration, and clinical application of the essential knowledge, skills, and values associated with the specialized practice role of the clinical nurse specialist. 
Effective Fall 2018
NUR 937  Clinical Nurse Specialist Specialty Role Immersion II
Spring of every year. 3(0-9) P: NUR 936 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Students select a clinical emphasis in a particular area of interest for integration, and clinical application of the essential knowledge, skills, and values associated with the specialized practice role of the Clinical Nurse Specialist (CNS).
Effective Fall 2018

NUR 964  DNP Practicum I
Fall of every year, Spring of every year, Summer of every year. 3 credits. P: NUR 960 and NUR 961 R: Open to doctoral students in the College of Nursing.
Provides the clinical opportunity to analyze, synthesize, and implement integrated nursing knowledge and skills in achieving patient and health system outcomes system’s assessment and needs analysis within the healthcare environment.
Request the use of the Pass-No Grade (P-N) system.
Effective Spring 2014 Effective Summer 2017

NUR 965  DNP Practicum II
Fall of every year, Spring of every year, Summer of every year. 3 credits. P: NUR 964 R: Open to doctoral students in the College of Nursing.
Provides opportunities to engage in increasingly complex organizational projects.
Participates in implementation of evidence-based initiatives to improve health outcomes and system effectiveness.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2015 Effective Summer 2017

NUR 966  Applied Chemical and Physical Principles of Anesthesia Practice
Fall of every year. 3(3-0) R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Combined coverage of chemistry and physics principles and their applied relationship to nurse anesthesia practice.
Effective Fall 2018

NUR 967  Basic Principles of Anesthesia
Summer of every year. 4(4-0) R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Exploration of fundamental anesthesia principles that underpin the development and implementation of a safe anesthetic plan.
Effective Fall 2018

NUR 968  Advanced Physiology and Pathophysiology for Anesthesia Practice I
Spring of every year. 4(4-0) R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Physiological basis of cellular and tissue function and the consequences of dysregulation on essential homeostatic processes in cells, compartments and primary organ systems.
Effective Fall 2018

NUR 969  Advanced Physiology and Pathophysiology for Anesthesia Practice II
Summer of every year. 4(4-0) P: NUR 968 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  In-depth study of human physiology and pathophysiology using a systems approach.
Emphasis is placed on those physiologic and pathophysiologic alterations that affect homeostasis in humans across the life span.
Effective Fall 2018

NUR 970  Pharmacology for Nurse Anesthesia I
Summer of every year. 3(3-0) P: NUR 909 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Provides the student with a thorough understanding of the basic science of pharmacology used in anesthesia practice. The primary focus will be those topics which are an integral part of modern anesthesia practice.
Effective Fall 2018
NUR 971  Pharmacology for Nurse Anesthesia II
Fall of every year. 3(3-0) P: NUR 970 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Integration of the basic and advanced principles of anesthesia and pharmacology and the synthesis of these concepts into a safe, cost-effective, patient-specific delivery plan.
Effective Fall 2018

NUR 972  Advanced Principles of Anesthesia I
Fall of every year. 3(3-0) P: NUR 967 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Exploration of anesthetic delivery to patients with increasing co-morbidities and complex anesthesia needs. Introduction to advanced airway management, regional anesthesia and chronic pain management.
Effective Fall 2018

NUR 973  Advanced Principles of Anesthesia II
Spring of every year. 3(3-0) P: NUR 972 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Advanced concepts related to nurse anesthesia practice including management of pediatric, obstetric, neurologic, trauma, vascular and cardiothoracic procedures
Effective Fall 2018

NUR 974  Introduction to Clinical Practicum
Summer of every year. 1(0-8) R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major. C: NUR 967 concurrently.
NEW  Application of basic anesthesia cognitive, affective and psychomotor skills in a simulated environment
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2018

NUR 975  Clinical Anesthesia Practicum I
Fall of every year. 2(0-16) P: NUR 974 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Integration of theory with practice in a clinical and simulated setting with emphasis on basic principles of anesthesia and professional standards of practice for the certified registered nurse anesthetist.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2018

NUR 976  Clinical Anesthesia Practicum II
Spring of every year. 3(0-24) P: NUR 975 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Guided instruction in the clinical management of patients receiving all types of anesthesia in a variety of clinical settings.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2018

NUR 977  Clinical Anesthesia Practicum III
Summer of every year. 3(0-24) P: NUR 976 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.
NEW  Guided instruction in the clinical management of medically complex patients undergoing surgical and diagnostic procedures.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2018
NUR 978  Clinical Anesthesia Practicum IV  
Fall of every year. 4(0-32) P: NUR 977 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.  
NEW  Guided instruction in the perioperative clinical site. Experiences include development of advance skills with an emphasis on specialty areas such as cardiovascular, neurosurgical, trauma, obstetrics and pediatrics.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

NUR 979  Clinical Anesthesia Practicum V  
Spring of every year. 4(0-32) P: NUR 978 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.  
NEW  Supervised clinical practicum with a high level of autonomy and critical thinking. Focus is on the entire spectrum of anesthesia practice for patients undergoing complex surgical procedures.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

NUR 980  Clinical Anesthesia Practicum VI  
Summer of every year. 4(0-32) P: NUR 979 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.  
NEW  Supervised clinical practicum with a high level of autonomy. Focus is on professional aspects of nurse anesthesia and team leadership.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

NUR 981  Anesthesia Seminar I  
Spring of every year. 3(3-0) P: NUR 979 or concurrently R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.  
NEW  Professional aspects related nurse anesthesia practice. Focus on historical perspectives, professional role, anesthesia business practices and professional wellness.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

NUR 982  Anesthesia Seminar II  
Summer of every year. 3(3-0) P: NUR 981 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.  
NEW  A comprehensive review and synthesis of anatomy, chemistry, physics, pharmacology, physiology and pathophysiology and principles of anesthesia in preparation for the national certification exam.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

NUR 995  Doctor of Nursing Practice Project I  
Summer of every year. 4(2-4) P: (NUR 902 and NUR 903 and NUR 905 and EPI 810) and (NUR 916 or NUR 926 or NUR 934 or NUR 976) R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.  
NEW  Introduction of the scholarly practice inquiry project for the advanced practice registered nurse.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

NUR 996  Doctor of Nursing Practice Project II  
Fall of every year. 3(0-6) P: NUR 904 and NUR 906 and NUR 995 R: Open to doctoral students in the College of Nursing or in the Nursing Practice Major.  
NEW  Implementation of the scholarly practice inquiry project for the advanced practice nurse.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018
NUR 997  Doctor of Nursing Practice Project III  
Spring of every year. 3(0-6) P: NUR 996 R: Open to graduate students in the College of Nursing or in the Master of Science in Nursing or in the Nursing Practice Major.  
NEW  Evaluation and dissemination of the scholarly practice inquiry project for the advanced practice nurse  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

**COLLEGE OF OSTEOPATHIC MEDICINE**

FCM 640  Principles of Family Medicine  
Fall of every year. Spring of every year. Summer of every year. 1(0-4) 1 credit. P: OST 553 or concurrently RB: Successful completion of Semesters 1, 2, 3 and 4 of the graduate-professional program in the College of Osteopathic Medicine R: Open to graduate-professional students in the College of Osteopathic Medicine.  
Preceptorship experience in family medicine taught by faculty and clinical preceptors at multiple sites through discussion and hands-on experience.  
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

FCM 650  Principles of Family Medicine - Intensive  
Principles of Family Medicine  
Fall of every year. Spring of every year. Summer of every year. 1(0-40) 1(2-40) A student may earn a maximum of 2 credits in all enrollments for this course. P: OST 553 or concurrently R: Open to graduate-professional students in the College of Osteopathic Medicine.  
One-week intensive preceptorship in family medicine taught by faculty and clinical preceptors at multiple sites through lecture and hands-on experience.  
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 2015  Effective Summer 2018

OST 556  Pediatrics I  
Spring of every year. 1(1-0) R: Open to graduate-professional students in the College of Osteopathic Medicine.  
NEW  This semester offering of the pediatrics course will introduce the students to the field of pediatrics. The first portion of PEDS I will focus on the normal growth and development of children from birth to 18 years. The second portion of this semester will focus on conditions of the nervous, musculoskeletal, endocrine and genitourinary systems that affect children.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Spring 2018

OST 557  Pediatrics II  
Summer of every year. 1(1-0) R: Open to graduate-professional students in the College of Osteopathic Medicine.  
NEW  This semester of the pediatrics curriculum focuses on the normal structure, function and pathologies of the integumentary, reproductive, and gastrointestinal systems as they relate to children.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Summer 2018
OST 558  Pediatrics III  
Fall of every year. 1(1-0) R: Open to graduate students in the College of Osteopathic Medicine.  
NEW PEDS III focuses on the normal structure, function and pathologies of the behavioral, cardiovascular, hematopoietic and respiratory systems as they relate to the pediatric population. Ethical considerations in pediatrics will also be highlighted.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Fall 2018

OST 583  Geriatrics  
Spring of every year. 1(1-0) R: Open to graduate students in the College of Osteopathic Medicine.  
NEW Focus on normal aging, structure, function and pathologies of older persons greater than 65.  
Request the use of the Pass-No Grade (P-N) system.  
Effective Spring 2019

COLLEGE OF VETERINARY MEDICINE

LCS 628  Techniques in Equine Anesthesia and Surgery  
Fall of every year. Spring of every year. Summer of every year. 3 credits. P: ((LCS 616 or concurrently) and LCS 640) and (LCS 622 or LCS 615) P: (LCS 616 and LCS 622) or LCS 615  
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.  
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 2013 Effective Summer 2017