

The NDU Gazette

A monthly publication covering decisions taken at the BOD meetings

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Issue Number ONE, February 2011

Stopping the Practice of Changing the Third Withdrawal “W” to “F”

Approved by the BOD on Dec. 15, 2010

Approved by the UC on Jan. 24, 2011

Rational: The present University practice on withdrawing from courses allows the student to drop a course twice. If a student withdraws from a course for the third time, the Registrar assigns the student an automatic “F” grade. Dr. Ghais proposed the termination of the practice of administratively transforming the third “W” to an “F.” based on the following facts:

- 1- this specific policy is not found in the catalog
- 2- “F” is a grade of academic failure and it should not be directly connected to any administrative procedures
- 3- the University definition of the “W” in the Catalog, page 84: “The grade “W” is not computed in the student’s grade-point average and may not be changed to any other grade under any circumstances.”

Following suggestions highlighting the role of advisors in advising students to change major in case of failing or withdrawing a course for many times. A motion that unanimously passed states

- a) To stop the practice of changing the third withdrawal “W” to “F”
- b) To delete the statement on page 97 of the catalog stating:”Students are allowed to withdraw from a course twice only.”
- c) To adopt the motion as of Spring 2011.

Supplementary Guidelines for the Promotion of Faculty Members in the FAAD

Approved by BOD on Jan. 5, & UC on Jan. 24, 2011

Refer to: FAAD Promotion Policy for Faculty Members, Published in the NDU Gazette, Issue Number One, December 2009

RATIONALE

Every Design/Art is a hypothesis but unlike scientific researches the design hypothesis are rarely expressed in projects. Instead, they remain imbedded in the designer/artist's mind. There are assumptions that Design/Art hypothesis can be made more explicit and for that there are at least two routes:

- 1- The Art : Creativity
- 2- The Science: Entrepreneurship

The Design/Art research project is a time consuming process. A Design/Art research project is measured in both quantitative and qualitative dimensions and not only in numbers and or in a timely manner. The best measuring unit for a Design/Art research project is as described in the Evaluation criteria for research/creativity output. Consequently:

- These guidelines open the door for individual and /or joint faculty collaboration, graduate and post graduate students on creative projects.
- The evaluation of the "Design/Art Research / Creativity Output" will be measured based on both quantitative and qualitative dimensions.
- The necessity to form a FAAD autonomous committee of Peer examiners or external examiners when needed.

CRITERIA FOR PROMOTION

The following criteria must be met with a cumulative number of Design/Art research project evaluation points (see table below) scored over 30 from a combination of at least two categories of the pool of criteria A / B / C / D. The evaluation points will be converted into academic points for promotion as per the table here below:

| FAAD Evaluation of Design/Art research project points | Conversion to Academic Points for promotion |
|---|---|
| 5 -7 | $\frac{1}{2}$ |
| 8 - 10 | 1 |
| 11 - 15 | $1\frac{1}{2}$ |
| 16 -20 | 2 |
| 21-25 | $2\frac{1}{2}$ |
| 26-30 | 3 |

N.B.

FAAD Equivalent System:

8-10 points = one paper in refereed journal

16-20 points = two papers in refereed journal

26-30 points = three papers in refereed journal

In order to be considered for evaluation any Design/Art Research Project should comply and respond to the following criteria:

A- Design/Art Research

(Graded over 6 points. A minimum requirement of 4 points to be secured)

- 1- Provide evidence of research- 3 points
- 2- The research provides the school of thought adopted on theoretical and / or conceptual and / or philosophical levels - 3 points

B- Creativity

(Graded over 6 points. A minimum requirement of 4 points to be secured)

- 1- Proof of Originality and authenticity of work- 2 points
- 2- Provide technical file that includes but not limited to: Drawings, sketches, comprehensive file, notes, models, design trials, scrolls, etc...)- 2 points
- 3- Provide the methodology and process adopted- 2 points

C- Overall Design Evaluation and Concept Development

(Graded over 14 points. A minimum requirement of 8 points to be secured)

- 1- Who are the expected Beneficiaries from this Design/Art Research Project? - 1 point
- 2- What are the key performance indicators related to this Design/Art Research Project? - 1 point
- 3- What is the logical framework used in the planning and performance of this Design/Art Research Project? - 1 point
- 4- What are the Implications of this Design/Art Research Project in the following areas? - 6 points
 - 4.1 *Education* - 2 points
 - University
 - Faculty
 - Department
 - Teaching colleagues
 - Students
 - Other Universities
 - 4.2 *Societal & Professional implications* - 2 points
 - Community
 - Country
 - Region
 - Professional organizations
 - Focus groups
 - Individuals
 - Other designers
 - 4.3 *Market Implications* - 2 points
 - End Users at large
 - National market
 - Regional market
 - International market

5- What are the communication methods used in the Design/Art Research Project? - 1 point

Provide documents such as:

- Questionnaires.
- Interviews.
- Focus groups
- Other

6- What are the Qualitative vs. Quantitative techniques*? - 3 points

Qualitative techniques are based on methods used to assess subjective qualities of experience such as: Interviews and observations. Its outcome is a verbal analysis such as: identifications of themes, concepts and issues. While quantitative techniques* are based on methods directed to assign numbers to something being measured also meant to provide rating scales and categories. But, quantitative data can include both subjective and objective measures.*

7- What is the Project Implementation Methodology*? - 1 point

The design-built method is the means to address the issues of integrating a job from beginning to end. This approach was developed in an effort to reduce expenses and construction costs, while providing realistic budgets and continuity throughout the project. In any design-built situation, it is advisable that clients be considered as design team members or partners and may be provided with a list of recommendations and options so they could participate in the decision making process.*

D- Entrepreneurship

- I. This section will be accepted for evaluation under three conditions:
 1. If the project proves to be successful
 2. If the project proves to be useful to the community
 3. In case of consultancy, it has to be in compliance with the University Consultancy Policy

(Graded over 4 points. A minimum requirement of 2 points to be secured)

Project Development Criteria- 2 points

- Planning and Analysis
- Technical drawing phase
- Budget, estimates and specifications
- Marketing, sales and communication Techniques
- Contract implementation and coordination
- Quantitative data processing
- Scheduling: Use of Milestone Charts, Bar Charts, CCPM (Computerized Critical Path Method)
- Consultancy and construction techniques
- Project follow up and procedure

Professional Application Criteria: - 2 points

- Performance-based contracting
- Finishing and furnishing
- Purchasing and Procurement
- Full or partial Project implementation
- Project Construction Management
- Budget Control: Use of IBSM (Integrated budget and schedule monitoring)
- Successful Project Construction completion

FBAE - DHTM Curriculum review and adjustments

Approved by the BOD on Dec. 8, 2010

Approved by the UC on Jan. 24, 2011

Objectives of the amendments:

- Maintain a moderate total number of credits of 104 cr. instead of 103 cr.
- Maintain the quality of the teaching outcome.
- Maintain the effective lab hours needed.
- Abide by university rules and regulations.

The removal of the GER course from Group II, under Philosophy & Ethics (3cr.) was approved to adjust the number of credits in the major courses.

HSM 226 Housekeeping Operations and Management (1.3); (1 cr.) was approved to change into 2-credit course as **HSM 227** Housekeeping Operations and Management (0.4); (2cr.)

FBM 315 Food Production Lab (0.3); (1cr.) was approved to transform this course into six lab hours. This course will become **FBM 316** Food Production Lab (0.6); (3cr.)

HSM 319 Information Technology in the Hospitality Industry (3.0); (3cr.) was approved that the appropriate software application for hotels' front office be merged in the course.

HSM 326 Domestic Travel and Tourism (2.2) (3cr.) approved as course outings are essential learning experiences to HTM students

FBM 413 Advanced Food Production (1.3); (3cr.) approved to change the 3-credit course to

FBM 414 Advanced Food Production (2.4); (4cr.) for crucial extra practice.

Hence, the number of required credit for graduation only in the Food and Beverage concentration will **increase from 103 credits to 104 credits.**

FBAE - A Composite Score for a New Admission System in the MBA

Approved by BOD on Oct. 20, 2010
Approved by the UC on Jan. 24, 2011

The current admission system in the MBA program at the FBAE is provoking some complaints. The GMAT exam remains a serious obstruction before certain student's graduation despite the limit of 18 credits before achieving the GMAT admission condition. Once a Master student is admitted, it becomes difficult upon practice to suspend his studies. For all these reasons, a new composite score system is proposed and consists of the following:

A set of criteria (standards) for evaluating graduate applicants allow to determine the eligibility for admission in the Master's program (MBA)

| | Points over hundred |
|---|----------------------|
| • GMAT score* | 20 |
| • Overall GPA * | 50 |
| • Cv-application –personality-interview | 15 |
| • Relevant work experience and/or University of origin | <u>15</u> R* =100 |

| | | | |
|---------------|--------------------|---|----------------|
| * GMAT score: | * GMAT > 550 | = | 20 pts |
| | * 500 < GMAT ≤ 550 | = | 15 pts |
| | * 450 < GMAT ≤ 500 | = | 10 pts |
| | * 400 ≤ GMAT ≤ 450 | = | 5 pts |
| | GMAT < 400 | = | 0 pt rejection |

| | | | |
|--------------|-----------------|--|-----------|
| * GPA (cum): | GPA > 3.5 | | 50pts |
| | 3 ≤ GPA ≤ 3.5 | | 45pts |
| | 2.7 ≤ GPA < 3 | | 40pts |
| | 2.3 ≤ GPA < 2.7 | | 30pts |
| | GPA < 2.3 | | rejection |

*R: R ≥ 80/100 applicant admitted

70 ≤ R < 80/100 applicant admitted on probation with remedial courses decided by the admission graduate committee.

R < 70 Rejection

If R > 70 with a GPA between 2.3 and 2.69 The student will be admitted as special.

N.B: an average B is required on each remedial course imposed to the applicant before being admitted in MBA.

To be eligible for admission to the MBA program, an applicant must submit the following file containing:

- The GMAT exam score
- Official transcript from his university of origin and the overall GPA
- The application form
- The CV showing work experience if any
- Two recent photographs
- Reference letters

NB: If we need to decrease the number of master students, we increase R, instead of 70 -75. This policy will have a retroactive effect and will be applicable to all on hold MBA students.

Examples:

- GMAT score* 20
- Overall GPA * 50
- Cv-application –personality-interview 15
- Relevant work experience and/or 15
- University of origin R* =100

GPA: 2.8 40
 GMAT: 470 10
 Application-personality, Good 10
 Work experience
 University of origin, very good 15
75 (Admitted on probation)

GPA: 3.6 50
 GMAT: 510 15
 Personality: Good 10
 Work experience: Good 15
90 (Admitted)

GPA: 2.5 30
 GMAT : 430 10
 Personality: Fair 10
 Work experience, 10
 University of origin **60 (Rejected)**

These numbers are not giving any edge to low GPA and still protect high GPA and are more fair for intermediate cases.

The FBAE suggestion proposes a smoother transition from the old to the new admission policy, while favoring good applicants with a GPA > 3, and giving chances to the more than average applicants with a GPA of 2.7 to 2.99 (B-) to at least be admitted on probation. Similarly, students with a GPA between 2.3 and 2.99 could be accepted as Special before moving to the MBA program rather than be rejected.

FNAS - Minor in Biology

Approved by the BOD on Dec. 8, 2010

Approved by the UC on Jan. 24, 2011

The minor in biology offers students a basic understanding of major concepts in biology through classroom and laboratory courses. Biology is a dynamic scientific field in view of the many discoveries and their impact on society, such as the human genome project and the development of the world's first "synthetic cell". By enrolling in the biology minor, students will have a well rounded education that will complement their major field of study and will improve their competitiveness in the job market. This minor will be most attractive to students in the medical and health sciences.

Admission requirements

General requirements for admission to this minor are those of the University policy on Undergraduate Academic Minors. No additional requirements are needed.

Curriculum requirements

Students enrolled in minor in biology must complete **17 credits** of Biology courses as follows:

The following two courses (8 credits)

BIO 211 General Biology I, 4 cr.

BIO 212 General Biology II, 4 cr.

Three courses (9 credits) selected from two pools of courses as follows:

Any **one** course (3 credits) from the following pool:

BIO 215 Human Physiology, 3 cr.

BIO 220 Genetics, 3cr.

Any **two** courses (6 credits) from the following pool:

BIO 322 Virology, 3 cr.

BIO 314 Ecology, 3 cr.

BIO 316 Economic Botany, 3 cr.

BIO 420 Neurobiology and Behavior, 3 cr.

Graduation requirements

The overall GPA should be a minimum of 2.0.

FNAS Curricula Changes

Approved by the BOD on Jan. 12, & UC on Jan. 24, 2011

- To reduce the GER credits to **27** in the attached programs, according to the following distribution:
 - **GER A-** Communication Skills in English and Arabic **9 cr.**
 - **GER B-** Philosophy & Religion: **6 cr.**
 - **GER C-**Cultural Studies and Social Sciences: **3 cr.**
 - **GER D-**Citizenship: **3 cr.**
 - **GER E-**Science and Technology: **6 cr.**
- To re-install the old title and course description of MAT 411 (currently Group theory) to become “Abstract Algebra I”, and the title and course description of MAT 421 (currently Rings and Fields) to become “Abstract Algebra II”, as they appear in the catalogue 2006-07. **These courses were never offered under their current titles.**
- To approve the change of the prerequisites for CHM 372 (Advanced Synthesis Laboratory) to the following: CHM 326, CHM 222, and CHM 272.
Correction: To change the prerequisites for CHM 372 (Advanced Synthesis Laboratory) from CHM 325 (Inorganic Chemistry) and CHM 331 (Organic Identifications and Structures) to the following: CHM 326 (Inorganic Chemistry I), CHM 222 (Organic Chemistry II), and CHM 272 (Organic Chemistry Laboratory).
- To change the prerequisites for MAT 339 from MAT 224 and a computer language to MAT 213, MAT 215, and a computer language.
Correction: To change the prerequisites for MAT 339 (Numerical Analysis) from MAT 224 (Calculus IV) and a computer language to MAT 213 (Calculus III), MAT 215 (Linear Algebra I), and a computer language.
- To create a new math course **MAT 227 - 3 cr.**
Corrections: To create a new Math course **MAT 227** Mathematics for Computer Games and Animation (3.0); 3 cr. (This course will replace MAT 213 and MAT 224 in the new CGA program).
- To approve the modified versions of the attached programs of:
 - BS in Mathematics (103 cr. → 90 cr.)
 - BS in Actuarial Science (112 cr. → 94 cr.)
 - BS in Biology (102 cr. → 92 cr.)
 - BS in Chemistry (98 cr. → 92 cr.)
 - BS in Environmental Science (102 cr. → 92 cr.) Corrected to (104 cr. → 92 cr.)
 - BS in Computer Science (104 cr. → 94 cr.)
- To get separate BS licenses for Computer Graphics and Animation (CGA) and Information Technology (IT). Currently, these majors are concentrations in the Computer Science program.
 - BS in Computer Graphics and Animation (108 cr. → 94 cr.)
 - BS in Information Technology (102 cr. → 94 cr.)
- To delete the concentrations computational mathematics and mathematics education from the current Math program.

FNHS - MS in Human Nutrition

Rationale for a Graduate Program (M.S.) in Human Nutrition

A graduate program (MS) in Human Nutrition at NDU-Louaize contributes to the University mission in providing “quality education” and preparing “future leaders” in Lebanon. It helps reach all the six NDU vision’s items and considerably contribute to the advancement of the University’s visibility in the local and international scientific communities. It also caters for many of NDU’s values since “Excellence” and “Scholarship” in education are significantly supported by graduate studies, and research in nutrition is a “Service” to the society.

The BS in Nutrition program is in continuous progress and currently hosts the majority of FNHS’s students with a 25% applicant growth in Fall 2010 compared to Fall 2009. In addition, despite their capability of running their own clinic following their BS, almost all our graduates seek graduate studies in Lebanon and abroad. In Lebanon, AUB is the only English speaking university with a MS program in Human Nutrition making it the target of our students who, many of them, repeatedly showed preference to join our program if it existed. In addition students from other institutions contacted the department inquiring about the starting date of the MS program. The success rate in the National Colloquium Exam is similar to other reputable universities, and the standard of the undergraduate senior projects conducted at the main campus resulting in their publication in refereed journals represent two strong indicators in support of the potential of a nutrition graduate program at NDU.

The establishment of a graduate program supports the recruitment of competent researchers/instructors and contributes to lowering the high ratio of part to full time members. In addition, such program should improve the collaboration of NDU with other universities in Lebanon and abroad on joint research projects as is the case currently with the project with American and Canadian Universities.

Support Facilities

- 1- Biology lab facilities
 - 2- Chemistry lab facilities (including food analyses instrumentation)
 - 3- Nutrition lab including indirect calorimetric instrument and a research grade bioelectrical impedance for estimation of complete body composition parameters
 - 4- A fully equipped gym
 - 5- Library resources including a rich collection of print and electronic resources in the Sciences, including books, journals, online databases, DVDs etc.
-

The Degree of Master of Science in Human Nutrition

Admission Requirements

In addition to the university graduate admission requirements, candidates are expected to have a sufficient background in Human Nutrition or closely related fields. Those who do not meet these requirements may be given provisional admission pending satisfactory completion of a maximum of four undergraduate courses. The credits earned for these courses will not be counted towards the 35 credits required for the M.S. in Human Nutrition.

The Faculty of Nursing & Health Sciences (FNHS) offers a graduate program leading to MS degree in Human Nutrition. Candidates may pursue either a thesis (MS with research) or a non-thesis (Applied MS with considerable course work) program of study. Candidates can do research in the areas of nutrition and psychology, biochemistry, clinical nutrition, sports nutrition or public health nutrition.

Graduation Requirements

To satisfy the requirements for the degree of MS in Human Nutrition, the student must complete a total of 35 credits with an overall average of at least 3.0/4.0. The distribution of credits per option is as follows:

- 1. Non-thesis option (Applied MS or Course-work option):**

- a. Required courses: 23 credits
 - b. Elective courses: 12 credits
- 2. Thesis option:**
- a. Required courses: 17 credits
 - b. Elective courses: 9 credits
 - c. Thesis: 9-credit

The Thesis option provides the necessary background and research experience; this option is more appropriate for students planning to pursue a Ph.D. The course-work option is designed to provide a broader background in Nutrition and is more appropriate for students planning to join the market place. Additional courses may be taken in biology, education, and biostatistics.

**Degree Requirements (*Non-Thesis Option*)
(35 Credits)**

- | | # of credits |
|---|---------------------|
| 1- Complete the following nine required courses | 23 cr. |
| NTR 633, NTR 650, NTR 651, NTR 652, NTR 655, NTR 681, NTR 682, NTR 665, NTR 690. | |
| 2- Complete 12 credits from the following list of courses | 12 cr. |
| NTR 620, NTR 630, NTR 635, NTR 641, NTR 642, NTR 653, NTR 660, NTR 670, HEA 601, HEA 610. | |
| 3-Pass one written comprehensive examination. The examination shall be conducted after having completed required courses (other than NTR 665 and NTR 690), with an overall average of 3.0/4.0. | |

**Master of Science in Human Nutrition (*Non-Thesis Option*)
Suggested Program (35 Credits)**

Fall Semester I (9 Credits)

| | | | |
|-----|-----|--|-------|
| NTR | 651 | Advanced Macronutrients Nutrition & Metabolism | 3 cr. |
| NTR | 633 | Community and Public Health Nutrition | 3 cr. |
| NTR | --- | Elective | 3 cr. |

Spring Semester I (10 Credits)

| | | | |
|-----|-----|--|-------|
| NTR | 652 | Advanced Micronutrients Nutrition & Metabolism | 3 cr. |
| NTR | 650 | Research Methods in Human Nutrition | 3 cr. |
| NTR | 681 | Human Nutrition Seminar I | 1 cr. |
| NTR | --- | Elective | 3 cr. |

Fall Semester II (9 Credits)

| | | | |
|-----|-----|------------------------------------|-------|
| NTR | 690 | Research Project | 3 cr. |
| NTR | 655 | Advanced Medical Nutrition Therapy | 3 cr. |
| NTR | --- | Elective | 3 cr. |

Spring Semester II (7 Credits)

| | | | |
|-----|-----|----------------------------|-------|
| NTR | 682 | Human Nutrition Seminar II | 1 cr. |
| NTR | --- | Elective | 3 cr. |
| NTR | 665 | Applied MS Practicum | 3 cr. |

**Degree Requirements (*Thesis Option*)
(35 Credits)**

| | # of credits |
|--|---------------------|
| 1- Complete the following seven required courses | 17 cr. |
| NTR 633, NTR 650, NTR 651, NTR 652, NTR 670, NTR 681, NTR 682. | |
| 2- Complete 9 credits from the following list of elective courses | 9 cr. |
| NTR 620, NTR 630, NTR 633, NTR 635, NTR 641, NTR 642, NTR 653, NTR 655, NTR 660, HEA 601, HEA 610. | |
| 3- Complete the MS thesis requirements | 9 cr. |
| NTR 691, NTR 692, NTR 693 | |

**Master of Science in Human Nutrition (*Thesis Option*)
Suggested Program (35 Credits)**

Fall Semester I (9 Credits)

| | | | |
|-----|-----|--|-------|
| NTR | 651 | Advanced Macronutrients Nutrition & Metabolism | 3 cr. |
| NTR | 670 | Techniques in Nutrition Research | 3 cr. |
| NTR | 633 | Community and Public Health Nutrition | 3 cr. |

Spring Semester I (10 Credits)

| | | | |
|-----|-----|--|-------|
| NTR | 652 | Advanced Micronutrients Nutrition & Metabolism | 3 cr. |
| NTR | 650 | Research Methods in Human Nutrition | 3 cr. |
| NTR | 691 | Human Nutrition MS Thesis I | 3 cr, |
| NTR | 681 | Human Nutrition Seminar I | 1 cr. |

Fall Semester II (9 Credits)

| | | | |
|-----|-----|------------------------------|-------|
| NTR | --- | Elective | 3 cr. |
| NTR | 692 | Human Nutrition MS Thesis II | 3 cr. |
| NTR | --- | Elective | 3 cr. |

Spring Semester II (7 Credits)

| | | | |
|-----|-----|--------------------------------------|-------|
| NTR | 682 | Human Nutrition Seminar II | 1 cr. |
| NTR | --- | Elective | 3 cr. |
| NTR | 693 | Human Nutrition MS Thesis III | 3 cr. |

**Regulations concerning the “thesis option” of the Master of Science in Human Nutrition
Jury for the Oral Defense**

After receiving a written note of completion along with three copies of the master thesis from the master thesis advisor, the department chairperson shall appoint the jury for the oral defense and its chairperson, and shall distribute to each member one copy of the master thesis. The jury shall consist of the master thesis advisor and two other members, one of whom is from outside the department.

Schedule for the Oral Defense

The oral defense for the master thesis shall be scheduled by the jury chairperson one month from the date of the appointment of the jury at the latest.

Evaluation and Grade

The jury shall evaluate the work for the master thesis and assign the appropriate grade by a majority vote. In case of a tie, the committee chairperson shall have the casting vote.

Final Copy of the Master Thesis

The student shall submit seven copies of the approved final copy of the master thesis to the jury chairperson who, in turn, shall distribute them to the Library (2 unbound copies), Faculty, Department, and to each member of the jury.

Graduate Courses: Nutrition

NTR 620: Nutrition Psychology (3.0); 3 cr. The course explores the relationship between nutrition and psychology, and the characteristics of human behavior that affects people dietary patterns. It covers the biological, emotional, cognitive and environmental functions in dietary adherence. Proficient methods of counseling patients and encouraging changes will be emphasized.

NTR 630: Integrated Metabolic Regulation (3.0); 3 cr. The course provides recent knowledge in metabolic regulation in cells and tissues. Emphasis will be placed on relevant endocrine organs and hormones, mechanisms involved in metabolic regulation, integration of macronutrients metabolism, the nervous system involvement in metabolism, diabetes mellitus, lipoproteins metabolism, and energy balance and body weight regulation.

NTR 633: Community and Public Health Nutrition (3.0); 3 cr. This course covers the broad range of community nutrition research, programs and policies in the world and Lebanon. It addresses the nutrition and health issues facing today's communities in all the different categories of settings. Students will become familiar with nutrition-related community-based research and programs.

NTR 635: Nutrition in Sports (3.0); 3 cr. The physiology of exercise, macronutrient and micronutrient requirements, and fluid needs of athletes engaged in all forms of sports will be presented. The course also covers gender specific requirements, appropriate dietary habits pre/post exercise, and the recent knowledge on the role of potential ergogenic aids.

NTR 641: Herbs, Foods and Phytochemicals (3.0); 3 cr. This course covers the health risks and benefits of herbal medicines and food phytochemicals use. The active ingredients of the different herbs and their mode of action along with the clinical applications will be presented.

NTR 642: Food and Nutritional Toxicology (3.0); 3 cr. This course examines potential chemicals in food known to produce adverse effects on human health. It covers the impact of food containing environmental contaminants or natural toxicants, food additives, chemicals in food packaging and nutrient excesses and malnutrition on nutrient metabolism.

NTR 650: Research Methods in Human Nutrition (2.1); 3 cr. The course details the research techniques adopted in nutrition research with human population groups. Research designs used in animal experimental stations will be covered. Emphasis will be placed on criticism of research designs, sampling techniques, measurement and analysis issues, and validity of results.

NTR 651: Advanced Macronutrients Nutrition and Metabolism (3.0); 3 cr. Advanced discussion of carbohydrates and dietary fibers, lipids, protein, and alcohol nutrition and metabolism.

NTR 652: Advanced Micronutrients Nutrition and Metabolism (3.0); 3 cr. Advanced discussion of the nutritional, biochemical, and physiological aspects of vitamins and minerals in humans.

NTR 653: Advanced Nutrition throughout the Lifecycle (3.0); 3 cr. In-depth discussion of the recent scientific developments in nutrient requirements and related disorders during the different stages of the human life along with the controversial issues present in the literature. *Prerequisite:* NTR 651, NTR 652.

NTR 655: Advanced Medical Nutrition Therapy (3.0); 3 cr. This course provides an in-depth study of the nutrition-related diseases which affect physiological function and the pathological disorders which result in nutritional disease. The emphasis will be on the following areas: endocrinology, metabolism, gastroenterology and hepatobiliary, cardiovascular, and nephrology. *Prerequisite:* NTR 651, NTR 652.

NTR 660: Special Topics (3.0); 3 cr. The course covers directed readings by the instructor of present nutritional knowledge provided by the most recent refereed journal publications.

NTR 665: Applied MS Practicum (0.3) 3 cr. The student will be placed in a clinical, community or foodservice practicum setting following which a comprehensive written report shall be submitted.

NTR 670: Techniques in Nutrition Research (1.2); 3 cr. A series of laboratory modules emphasizing quantitative and qualitative methods and experimental analysis used in nutrition research and sensory evaluation of food. The modules entail lab preparations or method applications in field settings, data collection and analysis, and interpretation in a comprehensive written report. Instrumentation and relevant software utilization will be emphasized.

NTR 681: Human Nutrition Seminar I (0.1); 1 cr. A recent topic in nutrition will be presented by MS students with critical analysis of the methods and data reported in refereed original articles following the approval of the instructor.

NTR 682: Human Nutrition Seminar II (0.1); 1 cr. A recent topic in nutrition will be presented by MS students with critical analysis of the methods and data reported in refereed original articles following the approval of the instructor. *Prerequisite:* NTR 681.

NTR 690: Research Project (0.3); 3 cr. The student prepares a review paper of the literature on a recent topic in nutrition following the approval and continuous supervision of the instructor.

NTR 691: Human Nutrition MS Thesis I (0.3); 3 cr. Independent research guided by a supervisor toward completing the requirements of the MS thesis; Research Proposal.

NTR 692: Human Nutrition MS Thesis II (0.3); 3 cr. Independent research guided by a supervisor toward completing the requirements of the MS thesis; Thesis Research. *Prerequisite:* NTR 691.

NTR 693: Human Nutrition MS Thesis III (0.3); 3 cr. Independent research guided by a supervisor toward completing the requirements of the MS thesis; Thesis writing up. *Prerequisite:* NTR 692.

Graduate courses: Health Sciences

HEA 601 Introduction to Public Health (3.0); 3 cr. This course provides an introduction to public health. Topics include: scope and core disciplines of public health, core functions and essential services of public health, determinants of health, approaches to health intervention, values and ethics of public health, and current issues in public health.

HEA 610 Essentials of Epidemiology and Biostatistics (3.0); 3 cr. This course provides basic principles of epidemiology and biostatistics. It covers definition of epidemiology, types and sources of epidemiological data, epidemiological study designs, data analysis and methods of statistical inference.