Minutes
The West Virginia University Faculty Senate
Monday, May 13, 2013

1. Michael Mays, Faculty Senate Chair, called the meeting to order at 3:15 p.m. in Assembly Rooms A&B, NRCCE.

Members Present:

Abate, M.	Connors, J.	Harris, T.	Meckstroth, R.	Sperow, M.
Abraham, R.	Cottrell, L.	Hartley, D.	Miltenberger, M.	Stack, S.
Ameri, S.	Cronin, A.	Hileman, S.	Munasinghe, R.	Stolzenberg, A.
Anderson, J.	Curtis, R.	Holmes, M.	Nutter, R.	Tuninetti, A.
Anderson, K.	Davis, S.	Hornsby, G.	Oberhauser, A.	Turton, R.
Atkins, C.	DiBartolomeo, L.	Hostuttler, L.	Peace, G.	Valenti, M.
Bastress, R.	Dino, G.	Huber, J.	Perna, N.	Veselicky, K.
Bergner, G.	Elmore, S.	Iskander, W.	Perone, M.	Vona-Davis, L.
Bilgesu, I.	Etzel, E.	Johnston, A.	Petronis, J.	Watson, J.
Blake, L.	Famouri, P.	Kershner, R.	Prudhomme, J.	Weihman, L.
Boone, D.	Finkel, M.	Kite, S.	Reymond, R.	Wenger, S.
Bowen, E.	Fint-Clark, R.	Kopriva, N.	Rockett, I.	Wilcox, G.
Brazaitis, M.	Funk, A.	Kromar, R.	Rose, T.	Woloshuk, J.
Brooks, R.	Graber, S.	Kuhlman, J.	Ruscello, D.	Wood, A.
Bryner, R.	Graves, C.	Mandich, M.	Ryan, K.	Yang, H.
Campbell, L.	Griffith, R.	Matak, K.	Scott, H.	
Cohen, S.	Harner, J.	Mays, M.	Sherwin, M	

Members Excused:

Barretto, G.	Kirby, B.	Lofaso, A.	Osborne, E.	Sand-Jecklin, K.
Britten, R.	Kleist, V.	Merrifield, J.	Paternostro, M.	Schreurs, B.
Cassels, A.	Knight, J.	Nichols, A.	Petty, T.	Sherlock, L.
Huffman, V.	Lastinger, V.	Orlikoff, J.	Reddy, R.	Tallaksen, R.
Kale, U.				

Members Absent:

Anfinson, J.	Ferrara, L.	Lieving, G.	Moritz, J.	Tower, L.
Baldwin, C.	Fisher, M.	Livengood, R.	Nelson, C.	Watson, D.
Brock, R.	Fuller, E.	Lorimer, L.	Polak, J.	Whiteman, C.
Carpenter, R.	Hashmi, M.	Miller, M.	Putman, H.	

Faculty Senate Officers Present:

Cottrell, L.	DiBartolomeo, L.	Lee, P.	Mays, M.

2. Chair Mays moved for approval of the minutes from the Monday, April 8, 2013 meeting. Motion carried.

3. President Clements reported on the following issues:

   - We have a reduction of $13.3 million in state appropriations for the fiscal year beginning July 1, which is about an 8.9% budget cut for the WVU system. This may require reallocation or repositioning of resources into the University's core mission. From a planning perspective, we are looking at a 2-year horizon, during which we must maintain

positive operating margins, maintain cash reserves, and preserve our very strong bond credit rating.

- We have crossed the $630 million mark towards the capital campaign goal.
- Our research numbers for July through April are running about $12 million ahead of last year.
- Dean Zito Sartarelli has been appointed by the Provost to coordinate global activities.
- The University College will launch July 1 thanks to the leadership of Elizabeth Dooley, and will serve nearly 8000 students.
- Our solar decathlon team broke ground last month. The students are among 20 teams selected internationally for a competition in the fall to construct a sustainable log home. The team consists of 50 students from the Statler College of Engineering and Mineral Resources, the College of Creative Arts, the Davis College of Agriculture, Natural Resources and Design, the Reed School of Journalism, and the College of Business and Economics.
- Three WVU online graduate programs have earned top five rankings in the inaugural *U.S. News & World Report's* Best Online Programs for Veterans: School of Nursing master's program (3), online business programs within the College of Business and Economics (5), and education programs within the College of Education and Human Services (5).
- The College of Business and Economics was recently ranked number 9 in the nation by *Businessweek* for top business schools based on return on investment for students.
- *Victorian Poetry*, which is WVU's oldest journal with an international readership, just marked its 50th anniversary with scholars from across North America and the United Kingdom. The editor of the journal is John Lamb, from our English department.
- Valerie Wayda, chair of the department of Coaching and Teaching Studies in the College of Physical Activity and Sport Sciences, was awarded the 2013 Fellow Award by the North American Society of Health, Physical Education, Recreation, Sport and Dance Professionals.
- Two student organizations, the Society of Women Engineers and the National Society of Black Engineers teamed up to honor John Zondlo, professor of chemical engineering, as their advisor.
- Four WVU students earned Fulbright Scholarships this year, bringing the campus total to 36. This is the sixth time that we have had multiple recipients since 1951. We are proud of the students for their hard work, and very appreciative of the work of our faculty and staff to support our students.
- Rachel James, from Crawford in Lewis County, is WVU's 36th Goldwater Scholar. She has participated in the NASA Space Grant program, the Summer Undergraduate Research Fellowship, and the McNair Scholars program. Her research interests involve seeking analytical ways to better predict travel delays from things such as changes in traffic flow, road work bottlenecks, and accidents.

4. Provost Michele Wheatly reported on the following issues:
    - We are close to meeting our enrollment target of 5000. So far, we have 4973 deposits.

- She just returned from the Big 12 Provosts' Meeting in Manhattan, Kansas. The group will meet here in the fall of 2014.
- Zito Sartarelli will be assuming his duties as chief global officer.
- The P&T process is complete; letters go out on Wednesday.
- The HLC self-study will be wrapping up by fall. The reaccreditation site visits occurs in April 2014.

5. Chancellor Chris Colenda provided a presentation on the Health Sciences Center.

6. Chair Mays reported on the following issues:
   - He thanked Anita Mayer and Betty Mei with the McNair Scholars program and Amy Cyphert and Cate Johnson from the ASPIRE program for their pre-session presentations.
   - June's Faculty Senate meeting will be held at the NRCCE. Beginning in the fall, meetings will take place at the Erickson Alumni Center.
   - The summer deferred payment plan is being replaced with a program through PNC Bank.
   - Jennifer Orlikoff was elected as Faculty Senate Chair-Elect for 2013-2014.
   - The trip to WVU Tech took place as planned on May 1, and included 4 Faculty Senate representatives, a Staff Council representative, and the new Student Government Association president.

7. Athletic Director Oliver Luck provided a report on the Athletic Department.

8. Dennis Ruscello, Chair, Senate Curriculum Committee, moved for approval of the following reports:

   Annex I, New Courses and Course Changes. Motion carried.
   Annex II, Immunology and Medical Microbiology BS Degree. Dr. Ruscello moved to table consideration until a discussion can take place between the Davis College and the Health Sciences Center. Motion carried.
   Annex III, Forensic Investigation BS Degree for WVU Tech. It was moved and duly seconded to table consideration of this proposal until the June meeting. Motion carried.
   Annex IV, Capstone Request for NSG 411. Motion carried.
   Annex V, Restructuring of the BS and BA Biochemistry Degrees. Motion carried.
   Annex VI, Monthly Alterations Report, was submitted for information.

9. Ilkin Bilgesu, Chair, General Education Committee, moved for approval of the following:

   Annex VII, GEC Actions. Motion carried.
   Annex VIII, GEC Audits, was submitted for information.

10. Marie Abate, Chair, Faculty Welfare Committee, presented the following:

    Annex IX, WVU Alternate Work Assignment Procedure, was submitted for information.

Annex X and Annex XI, Resolution Regarding PEIA. Dr. Abate moved to approve the letter and authorize it being sent to state legislators. Motion carried.

11. Roy Nutter, ACF representative. No report.

12. Robert Griffith, BOG representative, reported that the next Board of Governors meeting will be in June at WVU Tech. He presented the following:

    Annex XII, Proposed Changes to Faculty Constitution. It was moved and duly seconded to approve the amendment to the Faculty Constitution. Motion carried. The amendment will be brought forward at the next faculty assembly.

13. Appointment of Faculty Secretary

    - Chair Mays thanked Mary Strife for her service. She took office in 1999, and served with 14 faculty senate chairs and several presidents. He remarked that nobody in modern times has held the position so long or so well.
    - A motion was made and duly seconded to confirm Alan Stolzenberg's appointment as Faculty Secretary effective July 1. Motion carried.

14. Appointment of Faculty Senate Representative to State Government

    A motion was made and duly seconded to confirm Ray Nutter's reappointment as Faculty Senate Representative to State Government. Motion carried.

15. Appointment of Parliamentarian.

    Patricia Lee's reappointment as Parliamentarian was confirmed by acclamation.

16. New Business

    Amy Funk brought up the possibility of composing a statement to protect student-athletes involved in travel from failure. Chair Mays will refer the issue to the Student Instruction Committee.

17. Meeting adjourned at 5:24 p.m. to reconvene on Monday, June 10, 2013.

Judy Hamilton
Office Administrator

To: Faculty Senate Executive Committee
From: Dennis Ruscello, Chair, Faculty Senate Curriculum Committee
Date: April 22, 2013
Re: New Courses and Course Changes

Eberly College of Arts and Sciences
New Courses:

World Languages, Literatures, and Linguistics

FCLT 360. Latin American Cinema. 3-Hr. Examination of film from Latin America in socio-cultural context. (Effective Date: Fall 2013) (CIP 160101)

Rationale: This course provides an overview of one of the most accessible forms of Latin American cultural production: film. Through analyses of films in their socio-cultural contexts, students will gain knowledge of key themes in Latin American culture, in addition to an introduction to film analysis. In connection with the learning goals of the Latin American Studies curriculum, the films provide opportunities historicize and to think critically about challenges and possibilities that globalization presents to Latin America. Moreover, they present opportunities to identify and to comprehend the languages and cultures of the region, as well as to compare differences across different nations and sub-regions within Latin America.

FLIT 361. Lat.-Am. Lit. and Violence. 3-Hr. Examination of key works of Latin American cultural production in translation related to contexts of physical and structural violence. (Effective Date: Fall 2013) (CIP 160101)

Rationale: This course provides an in-depth study of literature produced around one of the most salient features of Latin American culture in the past half-century: physical violence (repression, authoritarianism), and structural violence (increasing socio-economic inequality along lines of race/ethnicity, gender, ideologicy and geopolitics). This course, an optional elective for the Spanish program and an optional "Literature and Culture" requirement for the Latin American Studies program, provides students with diverse cultural perspectives on the revolutionary and dictatorship period (roughly 1960s to 1980s) and the subsequent popular-democratic period (1990s to present) throughout Latin America. The course will provide crucial tools for understanding the recent past and its connection to the present cultural landscape. These more recent periods are often left out in survey courses such as FLIT 266, which covers canonical works mostly through the 1960s, at which point the canon is much more disputed.

College of Business and Economics
New Courses:

Business

BCOR 185. Building a Business Mindset. 3-Hr. This course helps students begin to develop a professional business mindset. For this course, a mindset is the set of assumptions, views, attitudes, and behaviors related to the subject. (Effective Term: Spring 2014) (CIP 521401)

Rationale: The objective of this course is to help freshman students begin to develop a professional business mindset. The emphasis is on altering behaviors that hinder academic progress. The course builds on the pedagogical research that indicates that engagement in the University community enhances student performance and retention.

Marketing

MKTG 713. Multivariate Data Analysis. 3-Hr. PR: MANG 712. This course discusses commonly used techniques (e.g., factor analysis, MANOVA, structural equation modeling) of analyzing multivariate data. The course will help students in choosing the appropriate methods for analyzing data in their own research. (Cross-listed with MANG 713 and BADM 713). (Effective Term: Fall 2013) (CIP 520201)

Rationale: This course is considered part of the core curriculum for the Ph.D. program in Marketing. Much research in marketing utilizes multivariate analysis and structural equation modeling to purify quantitative measures of marketing phenomena and to test theoretically grounded hypotheses. Therefore, this course is an integral research methods course in the Ph.D. program in Marketing.

College of Physical Activity and Sport Studies
Course Changes:

Athletic Coaching

From:

ACE 106. Intro to Athletic Coaching. 3-Hr. A general overview into the teaching/methodologies, etc., in a physical education/coaching education environment.

To:

ACE 106. Intro to Athletic Coaching. 3-Hr. Overview of athletic coaching profession including career opportunities, critical current issues/trends, professional standards and the professional organizations. (Effective Term: Fall 2013) (CIP 131314)

Rationale: This "Introduction" course is divided into two parts. In the first seven weeks, students from three different majors (athletic coaching education (ACE), physical education teacher

education (PETE), and sport management (SM)) meet together as one large group and learn about the field of physical education and sport as well as other disciplines within the field. For the last eight weeks of the course, the students are divided by their major (ACE, PETE, SM) and the content of the course then focuses specifically on that discipline. Specifically, students are introduced to current issues and trends, professional standards and professional organizations which guide that discipline. In this case, students will be exposed to pertinent issues within the field of Athletic Coaching.

Physical Education Teaching

From:

PET 167. Introduction to Physical Education. 3-Hr. Historical and philosophical bases, major issues, and professional practices in physical education teaching.

To:

PET 167. Introduction to Physical Education. 3-Hr. Overview of physical education teaching profession including career opportunities, critical current issues/trends, professional standards, and the professional organizations. (Effective Term: Fall 2013) (CIP 131314)

Rationale: This introduction course is divided into two parts. In the first seven weeks, students from three different majors (athletic coaching education (ACE), physical education teacher education (PETE), and sport management (SM)) meet together as one large group and learn about the field of physical education and sport as well as other disciplines within the field. For the last eight weeks of the course, the students are divided by their major (ACE, PETE, SM) and the content of the course then focuses specifically on that discipline. Specifically, students are introduced to current issues and trends, professional standards and professional organizations which guide that discipline. In this case, students will be exposed to pertinent issues within the field of Physical Education Teaching.

From:

PET 477. Special PE Practicum. 1-Hr. PR: Open to departmental majors only. A supervised practice teaching experience in special physical education.

To:

PET 477. Adapted PE Practicum. 3-Hr. PR: Open to departmental majors only. A supervised practice teaching experience in adapted physical education. (Effective Term: Fall 2013) (CIP 131314)

Rationale: The course involves a 2-credit hour increase and minor change in course description and title for PET 477. The increased credit hours will be used to cover the current course content in greater detail. The alterations to course description are minimal and reflect current education trend in language.

New Courses:

PET 244. Motor Learning & Performance. 2-Hr. Introduction to principles related to teaching, learning, and performance of motor skills. Emphasizes the application of knowledge to teaching and learning strategies for motor-skill acquisition. (Effective Term: Fall 2013) (CIP 131314)

Rationale: Some of the content that is included in this course was covered in another class (i.e. PET 175 Motor Development & Learning). However, after reviewing the latest National Standards for Beginning Physical Education Teachers (NASPE, 2010), the faculty believe that we need two separate courses – PET 175 Motor Development and PET 244 Motor Learning & Performance.

PET 455. Teaching Disc Games. 1-Hr. Basic concepts and instructional techniques for teaching disc games in public schools. (Effective Term: Fall 2013) (CIP 131314)

Rationale: This new course is intended to increase the scope of WVU's Physical Education Teacher Education program. Disc games would provide another class for our majors to develop their different Professional Content Knowledge.

Sport Management
Course Change:

From:

SM 167. Intro to Sport Studies. 3-Hr. Examines the historical and philosophical bases, major issues and professional practices in sport studies.

To:

SM 167. Intro to Sport Management. 3-Hr. Overview of the sport management profession including career opportunities, critical current issues/trends, professional standards and the professional organizations. (Effective Term: Fall 2013) (CIP 131314)

Rationale: Specifically, students are introduced to current issues and trends, professional standards and professional organizations which guide that discipline. In this case, students will be exposed to pertinent issues within the field of Sport Management.

New Course:
Physical Education

PE 206. Modified Indoor Tennis. 1-Hr. Introduce students to the basic skills and techniques involved in playing Modified Indoor Tennis (Pickle ball). (Effective Term: Fall 2013) (CIP 131314)

Rationale: This course is intended to increase the scope of activity classes offered in WVU's Basic Instruction Program. Pickle ball would offer students a viable racket sport option when weather is inclement.

Statler College of Engineering and Mineral Resources

New Course:

ENGR 140. Engineering in History. 3-Hr. Impact of engineering on society throughout history. Developments in warfare, architecture, agriculture, manufacturing, communication, transportation, and their impacts on society. (Effective Term: Summer 1, 2013) (CIP 140101)

Rationale: The proposed course will be an option for GEC credit for students from all colleges at WVU, but may be especially interesting to those in the Statler College. Engineering as a profession has had a significant impact on society throughout history, and this course plans to teach the major innovations that shaped cultures and societies and how they are tied to engineering. Current course offerings of WVU include the "History of Mathematics", and the "History of Philosophy", and it is thought that the addition of the "Engineering in History" course would provide additional GEC options to students. The course, if passed, will also become part of a future minor offered through the Statler College.

School of Nursing

New Courses:

NSG 411. Nsg/Complex Community Systems. 7-Hr. PR: NSG 276 and NSG 310 and NSG 312 and NSG 320 and NSG 360. Comprehensive theoretical introduction to community health nursing paired with clinical experience focused on promoting health and preventing disease in multiple populations. Culminates in a Capstone project that addresses an identified community health need. (Effective Date: Fall 2013) (CIP 511601)

Rationale: In the B.S. in Nursing (BSN) program, didactic and clinical courses are being combined into courses that have both didactic and clinical components. The combined didactic/clinical courses will provide a more integrated approach and will enhance the student's ability to think critically about patient care situations. Nursing in Complex Community Systems

will replace NSG 441, NSG 445, and NSG 455 (Capstone) in the basic BSN track. It will build on previous coursework in adult health, women's health, child and adolescent health, and ethics and health policy by expanding the focus to population based health in the community setting. The Capstone project requires synthesis of previous coursework to develop a project based on an identified need in the community.

NSG 489. Reproductive Issues in Women. 2-Hr. PR: Nursing Majors and NSG 310. This course reviews reproductive health issues and prepares students for careers in maternal/child care. Complications, diseases, genetics, and nursing care: pre/intra and postpartum will be addressed. (Effective Date: Fall 2013) (CIP 511601)

Rationale: Reproductive health has undergone myriad changes in the past 20 years. Most women are discharged within 24 hours of delivery making the need for optimal prenatal and postpartum care of utmost importance relative to knowledge, physical assessment, and educational delivery from nurse to patient. This course will provide participants with increased knowledge and skillset to share with their patients.

School of Medicine

Immunology and Medical Microbiology

New Courses:

IMMB 150. Microbiology Colloquium I. 2-Hr. Peer and faculty-led learning experiences to introduce students to the disciplines of immunology and medical microbiology. (Effective Date: Spring 2014) (CIP 260503)

Rationale: This is a required course for a new degree program. This early course is designed to introduce the student to the discipline of medical microbiology, including exposure to career paths, terminology and an overview of research.

IMMB 200. Immunology Colloquium I. 2-Hr. Peer and faculty-led learning experiences to introduce students to the discipline of immunology. (Effective Date: Fall 2014) (CIP 260507)

Rationale: This is a required course for a new degree program. This early course is designed to introduce the student to the discipline of immunology, including exposure to career paths, terminology and an overview of research.

IMMB 250. Microbiology Colloquium II. 2-Hr. Peer and faculty-led learning experiences to continue to introduce students to the discipline of medical microbiology. (Effective Date: Spring 2015) (CIP 260503)

Rationale: This is a required course for a new degree program. This early course is designed to introduce the student to the discipline of medical microbiology, including exposure to career paths, terminology and an overview of research.

IMMB 300. Immunology Colloquium II. 2-Hr. Peer and faculty-led learning experiences to continue to introduce students to the discipline of immunology. (Effective Date: Fall 2015) (CIP 260507)

Rationale: This is a required course for a new degree program. This early course is designed to introduce the student to the discipline of immunology, including exposure to career paths, terminology and an overview of research.

IMMB 301. Basic Medical Microbiology. 4-Hr. Combined lectures and laboratory exercises on the study of pathogenic microorganisms and clinical laboratory techniques. (Effective Date: Fall 2015) (CIP 260503)

Rationale: This is a required course for a new degree program. This early course is designed to provide the student with a foundation in basic medical microbiology on which they can build. This course provides an introduction to pathogenic microorganisms, their structures and metabolism, and their genetics and virulence factors. It will provide a basic understanding on how to grow the microorganisms, how to control their growth with the use of disinfectants and antimicrobials, and in how these organisms are transmitted. Students will become proficient in basic laboratory microbiological techniques. Didactic and practical knowledge from this course will serve as a basis on which other courses in this major will build.

IMMB 302. Principles of Immunobiology. 3-Hr. Study of the basic concepts underlying the mechanisms of innate and adaptive immunity. (Effective Date: Fall 2015) (CIP 260507)

Rationale: This is a required course for a new degree program. This early course is designed to provide the student with a foundation in immunology on which they can build. This course provides an introduction to the types of immune response and the cells, antibodies and growth factors involved in each response. Didactic and practical knowledge from this course will serve as a basis on which other courses in this major will build.

IMMB 310. Bacterial Pathogenesis. 4-Hr. Pathogenic bacteriology with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, motility, toxin production and mechanisms, and normal flora and disease. (Effective Date: Spring 2016) (CIP 260503)

Rationale: This is a required course for a new degree program. This course later in the degree curriculum focuses on the mechanisms by which bacteria cause disease. Since there are millions of species of bacteria that do not cause disease in humans and some species that are actually beneficial; it is important to understand the mechanism by which pathogenic bacteria cause disease when others would not. The purpose of this course is to explore and understand these

mechanisms. Understanding these mechanisms may prevent infection or enable us to develop better treatments against these bacteria.

IMMB 320. Cellular Immunobiology. 3-Hr. Emphasis on understanding the cellular elements that impact immune responses. This course builds on fundamental principles discussed in IMMB 302 to address areas of current research in immunobiology. (Effective Date: Spring 2016) (CIP 260507)

Rationale: This is a required course for a new degree program. This mid-level course is designed to teach students to apply fundamental principles in immunobiology to current research topics, using primary publications and review articles in top immunology journals.

IMMB 350. Microbiology Colloquium III. 2-Hr. Peer and faculty-led experiences to introduce students to the disciplines of medical microbiology. (Effective Date: Spring 2016) (CIP 260503)

Rationale: This is a required course for a new degree program. This early course is designed to introduce the student to the discipline of medical microbiology, including exposure to career paths, terminology and an overview of research.

IMMB 400. Senior Colloquium I. 1-Hr. Review and discussions on current immunology and medical microbiology literature. Seniors are required to lead one discussion session before graduation. (Effective Date: Fall 2016) (CIP 260503)

Rationale: This is a required course for a new degree program. This course is designed to introduce the student to the current literature of the disciplines of immunology and medical microbiology.

IMMB 405. Scientific Integrity. 1-Hr. Discussion and review of topics addressing fundamental issues in maintenance of scientific integrity in biomedical research. (Effective Date: Fall 2016) (CIP 260599)

Rationale: This is a required course for a new degree program. This upper-level course is designed to provide the student with practical guidance in considering pertinent issues for maintaining scientific integrity in conducting biomedical research. Areas to be addressed include data management, use of animals and humans in research, conflict of interest, research misconduct, mentoring and scientific publication.

IMMB 410. Microbial Genetics. 3-Hr. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models. (Effective Date: Spring 2016) (CIP 260503)

Rationale: This is a required course of a new degree program. This upper-level course is designed to familiarize students with fundamental genetic mechanisms utilized by microbial pathogens.

IMMB 420. Molecular Immunobiology. 5-Hr.Study of the structure and function of the families of molecules employed by the immune system to recognize and initiate the immune response and the signaling pathways within the cell involved in the immune system. (Effective Date: Fall 2016) (CIP 260507)

Rationale: This is a required course for a new degree program. This upper class course is designed to provide the student with a thorough understanding of molecular pathways important in stimulating the immune response.

IMMB 450. Senior Colloquium II. 1-Hr. Review and discussions on current immunology and medical microbiology literature. Seniors are required to lead one discussion session before graduation. (Effective Date: Spring 2017) (CIP 260507)

Rationale: This is a required course for a new degree program. This course is designed to introduce the student to the current literature of the disciplines of immunology and medical microbiology.

IMMB 460. Contemporary Issues for Majors. 3-Hr. Detailed coverage of major issues of contemporary research in immunobiology. (Effective Date: Spring 2017) (CIP 260507)

Rationale: This is a required course for a new degree program. The objectives of this course are to increase the depth of students' knowledge in immunology with an emphasis in understanding chronic inflammatory diseases, expand the students' knowledge of topics in immunology that were not covered in introductory immunology courses, improve the students' capacities to critically read primary research reports in the discipline of immunology, and improve the students' oral presentation skills.

IMMB 470. Medical Virology. 3-Hr. Molecular biology of viruses that are important both biologically and medically. Includes a basic introduction to replication and genetics as well as current topics in molecular virology. (Effective Date: Spring 2017) (CIP 260504)

Rationale: This is a required course for a new degree program. This upper class course is designed to provide the student with a thorough understanding of the field of medical virology.

PROPOSAL

TO ESTABLISH A BACHELOR OF SCIENCE DEGREE In

IMMUNOLOGY AND MEDICAL MICROBIOLOGY

to be offered by the

DEPARTMENT OF MICROBIOLOGY, IMMUNOLOGY AND CELL BIOLOGY

Contents:

WestVirginiaUniversity
Robert C. Byrd Health Sciences Center

Memo

Date: April 23, 2013

To: Elizabeth Dooley, Ph.D.
Associate Provost, Undergraduate Programs

From: John B. Barnett, Ph.D.
Chair, Microbiology, Immunology and Cell Biology

By the submission of these documents, I formally request the creation of a new undergraduate degree, Bachelor of Science in Immunology and Medical Microbiology. Included in this request are the documents indicated in the 'WVU Policy and Procedure for Creation and Approval of Degree Programs, Majors, Minors, Areas of Emphasis, Teaching Specializations and Undergraduate and Graduate Certificate Programs at WVU." Also attached is a letter of endorsement by Dr. Arthur Ross, Dean, School of Medicine.

The driver of this request is to provide an additional career option for West Virginians. The biotechnology industry is growing world-wide and West Virginia's ability to share in this growth economically will depend on the availability of qualified skilled personnel to attract the biotechnology industries to locate or relocate in WV. The curriculum will be designed to be modern, cutting edge and pertinent to available job opportunities. The graduates with this degree will be exceptionally well qualified to be employed in this industry. This program will also serve as a feeder of exceptional candidates to the professional and graduate programs at WVU. Data on job prospects as well as an example job opportunity in a federal laboratory is also included in the document.

INTRODUCTION

Every day of our lives, we are exposed to microbes such as bacteria, viruses, and parasites. For the most part we suffer no disease or symptoms from these organisms, and they often go un-noticed. The single system in the body that allows life to continue in the face of these assaults is the immune system. The immune system is the network of cells and their biological processes that enable the body to recognize diseased cells or the invasion by microorganisms (bacteria, viruses, parasites, and prions) and eliminate them. The scientific discipline called Immunology is the study of this system, and Medical Microbiology is the study of the disease states induced by the invasion of microorganisms. Collectively, these two disciplines address how humans and other mammals respond to infectious disease. These scientific disciplines have become the cornerstone for many industries - including the biotechnology, pharmaceutical and medical and public health industries. These are all areas of particular emphasis and are being targeted for further development in West Virginia.

EDUCATIONAL OBJECTIVES:

The Bachelor of Science degree in Immunology and Medical Microbiology will prepare students from diverse backgrounds to serve as professionals that are knowledgeable about the immune system of humans and other mammals, how the immune system functions, and the consequences of its malfunction on the health of the host. Knowledge of the immune system will be fully integrated with an excellent understanding of the diversity of microorganisms that cause disease in humans and other mammals and mechanisms of disease pathogenesis. Graduates will possess the laboratory skills and knowledge needed to assess the functional status of the immune system and to safely cultivate and identify microorganisms that cause disease in mammals. Graduates will be qualified to pursue several professional career paths in private industry, state and federal government, and academic institutions. The degree can also provide a strong foundation to progress to advanced studies leading to a Masters or professional degree.

RELATIONSHIP OF THE OBJECTIVES TO THE MISSION OF WVU:

The Bachelor of Science degree in Immunology and Medical Microbiology directly fulfills many of the stated objectives in the Strategic Plan for WVU, the WVU Health Sciences Center and the WVU School of Medicine. It will be a financially viable, new, innovative and dynamic educational program that provides a unique opportunity to earn a degree in Immunology and Medical Microbiology for both in-state and out-of-state undergraduate students. Its learner-centered curriculum will integrate both classroom and hands-on laboratory experiences. Graduates of the program will provide the state of West Virginia with a well-trained healthcare and research workforce who have the education and experience to work in a variety of occupations that require knowledge in immunology, medical microbiology and related disciplines.

DESCRIPTION OF THE PROGRAM:

The Bachelor of Science in Immunology and Medical Microbiology degree program is designed to provide a thorough understanding of the basis of the normal human and other mammalian immune systems and how it functions to protect the body from infectious agents, tumor insults and the consequences of a malfunctioning immune system. Immunology course work will include didactic courses that begin with the basic concepts of the immune system as it functions to protect the host against microbial infections and pathological insults and expands on these basic concepts through courses focused on cellular and molecular immunology. Portions of the didactic courses will examine mechanisms of abnormal or non-functional immune responses, including immunodeficiency diseases, allergy, transplant immunity and autoimmunity. Immunology laboratory courses will introduce students to current methods for measuring the functional status of the components of the immune system. Course work in medical microbiology will build on courses in basic biology and genetics of bacteria, viruses, fungi and parasites. Advanced courses will cover the mechanisms of how microbes cause disease in the mammalian host and host-pathogen interactions. Laboratory sessions will teach cultivation and identification of microorganisms together with the biosafety regulations

necessary for proper handling of microbes. In addition, students will learn assays used to assess virulence factors in bacteria that contribute to disease. Together, the didactic and laboratory coursework will provide the necessary skills for graduates to assist in the discovery of new knowledge about pathogenic mechanisms.

QUALITY ASSURANCE STANDARDS AND ASSESSMENT FOR CONTINUING QUALITY:

The assessment plan for the program will be formative and summative. Formative assessments will include: 1) student performance at the level of a 2.5 GPA in all coursework attempted and passing all courses for the major with a grade of "C" or better; 2) student evaluations of instruction (SEI) to be delivered to all courses, 3) peer evaluations of teaching, and 4) annual curriculum committee reviews, including input from students. The draft curriculum of the Baccalaureate of Science in Immunology and Medical Microbiology requires a minimum of 46 hours to a maximum of 49 hours in Immunology and Medical Microbiology required courses. A minimum of 128 total hours required for graduation, however, in some instances the total number of earned credit hours may exceed this total depending on the electives chosen.

Summative evaluations will be conducted as follows: 1) Exit interviews will be conducted with senior graduates of the Immunology and Medical Microbiology program to provide feedback from students on quality of program, employment opportunities, and job placement; 2) a database of graduate information will be kept to follow graduates of the program and on an annual basis, efforts will be made to contact graduates from the program to update their post-graduate information; 3) graduates will be surveyed at 1 and 3 years to determine how they felt the program met their needs for employment or graduate education; and 4) an Internal Advisory committee consisting of members from across WVU that will meet annually and an External Advisory committee from institutions in the region with comparable programs, e.g., University of Pittsburgh, that meet every 2 years is proposed. The External Advisory board will also include employers or prospective employers of the graduates. The program advisory boards will review assessment information and make recommendations as appropriate.

OTHER INSTITUTIONS IN WEST VIRGINIA OFFERING SIMILAR PROGRAM:

No university within the State of West Virginia (WV) offers either a BS or BA degree program in Immunology and Medical Microbiology. Of the ten major universities in surrounding states, four offer BS or BA degree programs in Microbiology or Microbiology and Immunology. None of these four programs, however, is housed in a School (College) of Medicine at a Health Sciences Center that can provide the level of emphasis and advanced understanding of the mammalian immune system that the program at WVU will offer. The Davis College of WVU offers a degree in 'environmental microbiology' but this program does not offer the immunology component or the emphasis on medical microbiology in mammalian systems that our proposed program will encompass. **See Appendix B for a list**

SOCIETAL, OCCUPATIONAL, RESEARCH AND PUBLIC SERVICES THAT WILL BE MET BY THIS PROGRAM: *(as well as anticipated student demand for the program)*

A detailed discussion of the potential employment opportunities is provided in Appendix B

Graduates of the Immunology and Medical Microbiology Bachelor of Science degree program, through their unique training, will be well-suited for various educational or career options. They will be qualified to work as immunologists or microbiologists in many diverse fields - including biotechnology research and industry, the pharmaceutical industry, the medical industry, the public health arena and various federal and state government agencies. In addition, successful graduates of this program will be well prepared for advanced graduate or professional school education and training.

The WVU Biomedical Sciences Graduate Program and other biological-oriented graduate programs will benefit from the cellular and molecular biology orientation of this undergraduate degree program. Graduate applicants who have completed this program will be well versed in knowledge of pathogenic microbes and how they can cause disease. They also will possess keen study skills that will allow them to succeed at the graduate level – many of whom will likely be interested in pursuing their graduate degree at WVU. In addition, this program will prepare

its graduates for various opportunities in a variety of professional degree programs – including public health, medicine, dentistry, and pharmacy.

A major impact will be to provide a much needed, yet presently lacking, educational resource to students and their families in the state of West Virginia as well as to out-of-state students in adjoining and nearby states. The anticipated student demand for such a program is likely to be significant, given the development of statewide emphasis on developing resources to enhance the health career and biomedical research training in West Virginia, particularly through the West Virginia Higher Education Policy Commission (WV HEPC). Also, the development of efforts to increase industries in the state are specially focused on targeting the biotechnology, medical and pharmaceutical industries. These efforts are being addressed in conjunction with enhanced education programs supporting training opportunities for these industries. These programs will provide an important outlet and opportunities for many West Virginia students to obtain the background needed to succeed in biomedical academic research and other professional health-related careers. This Bachelor of Science in Immunology and Medical Microbiology degree program will prove to be a critical mechanism to grow and sustain this statewide effort to support biotechnology, medical, pharmaceutical and public health educational and training resources – its graduates will contribute to the workforce and leadership for these statewide industries. As these industry-related infrastructures expand, they will serve as resources for increased employment opportunities and other economic resources influencing the state's workforce.

ADDITIONAL RESOURCES NEEDED TO OFFER PROGRAM:

In the first two years of the program, no additional resources will be required. However, as the program grows, additional faculty will be required to provide the breadth and depth that the curriculum will demand. Classroom space as well as teaching laboratory space has been determined to be adequate to handle any increase in enrollment at the WVU Health Science Center (HSC) campus.

PROPOSED IMMUNOLOGY & MEDICAL MICROBIOLOGY (IMMB) CURRICULUM

The four year curriculum is provided in outline form in Appendix D. The minimum number of credits required for the degree is 128 hours as shown in the following table. In some instances the total number of credit hours may exceed this depending on which elective is chosen in the senior year.

The course descriptions in the form suitable for the catalog follow the outline of the curriculum. These courses are listed with the prefix "IMMB" as a request to change the name of the department to "Immunology and Medical Microbiology" has been requested by the accompanying memo.

ANSWER TO DR. DOOLEY'S QUERY (IN HER MEMO OF JUNE 18, 2012) ABOUT THE NUMBER OF REQUIRED CREDIT HOURS

We have re-evaluated the curriculum and have now standardized the listing indicating that a minimum of 128 hours are required for the degree. The earlier listing of a range was based on our uncertainty of the number of hours for some of the electives. We solved this problem by listing the minimum number of hours that an elective may carry. The minimum of 128 hours is slightly higher than the WVU Faculty Senate approved minimum of 120 hours, but we feel that this curriculum requires the higher number to provide a comprehensive curriculum required to produce a quality graduate.

APPENDIX A

From: Elizabeth Dooley <Elizabeth.Dooley@mail.wvu.edu>
Sent: Monday, June 18, 2012 9:21 PM
To: Barnett, John
Cc: Ross, Arthur; Sheil, James; Worth, John; Mandich, MaryBeth; Schafer, Rosana; Miller, Tammy S.; Watson, Valerie; Shirley Robinson
Subject: RE: Request for approval, intent to plan

Dr. Barnett.

Thank you for preparing a detailed intent to plan document. Overall I support the request, and approve the intent to plan an undergraduate degree in immunology and medical microbiology.

When preparing the final proposal, I suggest you make clear career opportunities for those students who pursue this degree. While you state the agencies, you do not describe jobs and or fields. At a minimum, you should provide examples.

In addition to the above, provide a description of the curriculum, courses and the 4- year matriculation plan.

Based on the information provided, it appears students can meet all the major program requirements and the current General Education Curriculum requirements (55 - 63 + 42) and satisfy the 120 minimum credit hours, graduation requirement, recently approved by the WVU Faculty Senate. If I am correct, you should consider adopting the minimum requirement.

You should also explain, in the full proposal, or provide a justification for having a range - minimum of 55 hours to a maximum of 63 hours.

If you have additional questions, please let me know.

Elizabeth A. Dooley, Ed.D.
Associate Provost for
Undergraduate Academic Affairs

APPENDIX B: Universities in WV and surrounding states with similar degree programs & enrollment statistics

Within the State of WV

All known universities and colleges in the state of WV were surveyed (by accessing their websites), for a degree program identical or similar to the program proposed herein. No university or college in the State of WV offered a bachelor's (BS or BA) degree in immunology or medical microbiology. The WVU Davis College offers a BS degree in Environmental Microbiology. This degree does not provide any immunology and the emphasis of microbiology portion of this degree is environmental and agriculture. Thus, we can state that no identical or similar undergraduate degree program exists in the State.

Within Ohio, Kentucky, Pennsylvania, Maryland & Virginia

The following table lists similar, although not identical, programs in the major universities in the States listed above. The process of acquiring these data is in progress and the table is incomplete.

UNIVERSITIES IN SURROUNDING STATES	BS degree	Number Enrolled	grads/yr	trend
Pennsylvania State University, Dept Biochem & Molec Biology	YES	NA*		
Ohio State University, Dept Microbiology	YES	313 (total)		Increasing
University of Maryland, Dept Cell Biol & Molec Genetics (M&I Speciality)	YES	NA		
University of Pittsburgh, Dept Biol. Sc.	YES	NA		
Duquensne University, Pittsburgh	NO	NA		
University of Virginia	NO	NA		
Virginia Commonwealth	NO	NA		
University of Kentucky	NO	NA		
George Washington University	NO	NA		
Georgetown University	NO	NA		

None of these undergraduate degrees were housed in a School (College) of Medicine and had an immunology and medical microbiology emphasis.

*NA – data was requested but not provided by the program

Appendix C: Market demand survey

We believe that the following data from the US Department of Labor indicates that there will be a strong demand for graduates with this degree at the Bachelors of Science level. These data do not provide projections for graduates with advanced degrees, i.e., M.S., Ph.D., DDS or M.D. degrees. Graduates of the proposed program will have ample job opportunities with wages high enough to maintain a high standard of living.

Employment partners

Mylan Pharmaceuticals
WV Department of Public Health
Federal Laboratories, such as

- NIOSH (Morgantown & Cincinnati)
- Centers for Disease Control (Atlanta)
- National Institutes of Health (Bethesda & branches across the USA)
- US Department of Agriculture
- Food and Drug Administration

Note: Federal laboratories hire through "USAJobs" (www.usajobs.gov) – Appendix 1 provides an example job opportunity advertised on this website. Graduates of this degree program would qualify for this employment opportunity.

Employment Opportunities for West Virginians with this degree

research laboratories / institutions
pharmaceutical / industrial chemical
food processing companies
hospitals and other medical institutions
health maintenance organizations
water testing / treatment industries
geological and agricultural firms
beverage / brewing industries
microbiology consulting firms
environmental monitoring companies
biotechnology firms
technical supply companies
diagnostic laboratories
cosmetic industries
mining companies
veterinary institutions
bottled water companies
bioremediation companies
research laboratories
quality testing laboratories
blood transfusion and banking services
fish and wildlife industries

Net employment increase estimates

The following statistics are from the US Department of Labor and are for graduates with a BS degree (not graduate or professional degree).

Current employment (2008 data)

Biological technicians	79,500
Environmental science and protection technicians, including health	35,000
Forest and conservation technicians	34,000
Agricultural and food science technicians	21,900

These positions represent ~21% of all science technician employment

Job Outlook (2008 data) – (http://www.bls.gov/oco/ocos115.htm)

"Overall employment of science technicians is expected to grow by 12 percent during the 2008–18 decade, about as fast as the average for all occupations. The continued growth of scientific and medical research—particularly research related to biotechnology—will be the primary driver of employment growth, but the development and production of technical products should also stimulate demand for science technicians in many industries.

"Employment of biological technicians should increase by 18 percent, faster than average, as the growing number of agricultural and medicinal products developed from the results of biotechnology research boosts demand for these workers. Also, an aging population and continued competition among pharmaceutical companies are expected to contribute to the need for innovative and improved drugs, further spurring demand. Most growth in employment will be in professional, scientific, and technical services and in educational services."

Earnings

Occupational Employment and Wages, May 2010
(http://www.bls.gov/oes/current/oes194021.htm)

National estimates for this occupation:

Employment estimate and mean wage estimates for this occupation:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
72,940	2.5 %	$20.07	$41,740	0.6 %

Percentile wage estimates for this occupation:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	$11.99	$14.77	$18.76	$24.10	$30.24
Annual Wage (2)	$24,930	$30,730	$39,020	$50,120	$62,890

Industry profile for this occupation:

Industries with the highest published employment and wages for this occupation are provided.

Industries with the highest levels of employment in this occupation:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Colleges, Universities, and Professional Schools	19,950	0.70	$19.93	$41,450
Scientific Research and Development Services	19,940	3.25	$21.52	$44,760
Federal Executive Branch (OES Designation)	12,170	0.60	$17.47	$36,330
Pharmaceutical and Medicine Manufacturing	6,620	2.35	$22.59	$46,980
Architectural, Engineering, and Related Services	3,560	0.28	$18.13	$37,710

Industries with the highest concentration of employment in this occupation:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Scientific Research and Development Services	19,940	3.25	$21.52	$44,760
Pharmaceutical and Medicine Manufacturing	6,620	2.35	$22.59	$46,980
Colleges, Universities, and Professional Schools	19,950	0.70	$19.93	$41,450
Federal Executive Branch (OES Designation)	12,170	0.60	$17.47	$36,330
Medical and Diagnostic Laboratories	650	0.29	$18.39	$38,250

Top paying industries for this occupation:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Offices of Physicians	520	0.02	$28.41	$59,080
Pharmaceutical and Medicine Manufacturing	6,620	2.35	$22.59	$46,980
Drugs and Druggists' Sundries Merchant Wholesalers	90	0.04	$21.96	$45,680
Management of Companies and Enterprises	100	0.01	$21.60	$44,920
Scientific Research and Development Services	19,940	3.25	$21.52	$44,760

Typical job example (excerpt) from USAJOBS for the program graduates

Job Title: Medical Technologist (Microbiology/BSL3)
Department: Department of the Army
Agency: U.S. Army Medical Command
Job Announcement Number: NCMD13360326830318D

SALARY RANGE: $47,448.00 to $61,678.00 / Per Year
OPEN PERIOD: Friday, January 25, 2013 to Thursday, February 07, 2013
SERIES & GRADE: GS-0644-09
POSITION INFORMATION: Full Time - Permanent
WHO MAY APPLY: United States Citizens

JOB SUMMARY:

Civilian employees serve a vital role in supporting the Army mission. They provide the skills that are not readily available in the military, but crucial to support military operations. The Army integrates the talents and skills of its military and civilian members to form a Total Army.
About the Position: (redacted to save space)

DUTIES:

You will serve as a Medical Technologist in the Microbiology Section/BSL3 of a clinical laboratory with responsibility for performing a variety of procedures including complex analyses and infrequently requested tests in all subspecialties of Microbiology to include bacteriology, mycology, parasitology, mycobacteriology, immunology, molecular diagnostics, and/or virology; evaluating abnormal results; calibrating, standardizing, adjusting and maintaining instruments; and setting up and monitoring quality control. You will process specimens using equipment, instruments, or techniques that are necessary to prepare them for specific analysis; control physical conditions; and respond to time factors to insure that the physiologic state of the specimen is maintained. You will provide supervision and instruction for other medical technologists and military and civilian technicians when required.

QUALIFICATIONS REQUIRED:

Minimum Qualifications:

A. Degree: medical technology, chemistry, or biology that included or was supplemented by at least: 16 semester hours of biological science of which one course was in **microbiology** and one course was in **immunology**. (NOTE: If there is no mention of immunology or immunobiology in the course title, the requirement for a course in immunology may be met by any course that covers the following topic areas: (1) definition and relationships of antigens and antibodies; (2) host-antigen interactions; (3) bursal and thymic influences on lymphoid cells; and (4) humoral and cellular response mechanisms.) The remaining biology courses must have been in general biology, zoology, or any of the areas listed below under "Evaluation of Education and Experience;" AND 16 semester hours of chemistry of which one course was in organic or biochemistry. The remaining chemistry courses must have been in general chemistry, qualitative analysis, qualitative chemistry, quantitative chemistry, physical chemistry, analytical chemistry, or any of the areas listed below under "Evaluation of Education and Experience;" AND 3 semester hours of college mathematics.

IMMUNOLOGY & MEDICAL MICROBIOLOGY (IMMB) CURRICULUM

A suggested sequence of courses that includes courses required for the major and courses meeting the West Virginia University General Education Curriculum (GEC) follows. Please note that there are no required GEC classes; however, some of the courses required for the Immunology & Medical Microbiology degree may also satisfy GEC objectives. The actual program of study for each student will be determined by the student in consultation with the academic advisor.

IMMUNOLOGY & MEDICAL MICROBIOLOGY (IMMB) CURRICULUM

FRESHMAN YEAR - First Semester

ENGL 101: Composition and Rhetoric [GEC 1]	3
MATH 155: Calculus 1 [GEC 2A]*	4
CHEM 115/117: Fund of Chemistry [GEC 2B]*	4
GEC 2B Requirement	4
University 101	1
Semester Credits:	**16**

Cumulative credits:16

Freshman year - Second Semester

ENGL 102: Composition & Rhetoric [GEC 1]	3
MATH 156: Calculus 2 [GEC 2A]*	4
CHEM 116/118: Fund of Chemistry. [GEC 2B]*	4
GEC 2B Requirement	4
IMMB 150: Microbiology Colloquium I	2
Semester Credits	**17**

Cumulative credits: 33

SOPHOMORE YEAR - First Semester

CHEM 233: Organic Chemistry	3
CHEM 235: Organic Chemistry Laboratory	1
BIOL 219: The Living Cell	4
GEC 2B Requirement	4
GEC 3-9 elective	3
IMMB 200: Immunology Colloquium I	2
Semester Credits	**17**

Cumulative credits: 50

Sophomore Year - Second Semester

CHEM 234: Organic Chemistry.	3
CHEM 236: Organic Chemistry Laboratory	1
GEC 2B Requirement	4
IMMB 250: Microbiology Colloquium II	2
GEC 3-9 elective	3
GEC 3-9 elective	3
Semester Credits:	**16**

Cumulative Credits: 66

*May also count for GEC 2 requirements

JUNIOR YEAR - First Semester

BIOC 339: Introduction to Biochemistry	4
IMMB 300: Immunology Colloquium II	2
IMMB 301: Basic Medical Microbiology	4
IMMB 302: Principles of Immunobiology	3
GEC 3-9 elective	3
Semester Credits:	**16**

Cumulative Credits: 82

Junior Year - Second Semester

BIOL 324: Molecular Genetics	3
IMMB 310: Bacterial Pathogenesis	4
IMMB 320: Cellular Immunobiology	3
IMMB 350: Microbiology Colloquium III	2
GEC 3-9 elective	3
GEC 3-9 elective	3
Semester credits:	**18**

Cumulative credits: 100

SENIOR YEAR - First Semester

STAT 215: Intro to Probability & Statistics	3
IMMB 400: Senior Colloquium I	1
IMMB 405: Scientific Integrity	1
IMMB 410: Microbial Genetics	3
IMMB 420: Molecular Immunobiology	5
IMMB 494: Seminar	1
Semester Credits:	**14**

Cumulative credits: 114

Senior Year - Second Semester

IMMB 450: Senior Colloquium II	1
IMMB 496W: Senior Thesis	3
IMMB 460: Current Topics for Majors	3
IMMB 470: Medical Virology	3
IMMB elective	1
GEC 3-9 elective	3
Semester credits:	**14**

Cumulative credits: 128

IMMUNOLOGY & MEDICAL MICROBIOLOGY (IMMB) CURRICULUM (continued)

GEC course inventory	
GEC 1	6
GEC 2	14
GEC 3-9	21
Total	41

APPROVED GEC 2B COURSES (TO BE CHOSEN WITH THE APPROVAL OF THE STUDENT'S ADVISOR)

BIOL 115 Principles of Biology - 4
BIOL 117 Introductory Physiology – 4
PHYS 101 Introductory Physics I – 4
PHYS 103 Introductory Physics II – 4
PHYS 111 General Physics I – 4
PHYS 112 General Physics II - 4

COURSES APPROVED FOR ELECTIVES

AEM 445/449: Food Microbiology (3) Lab (1)
BIOL 310: Advanced Cellular/Molecular Biology (3)
IMMB 327: Medical Parasitology (2)
IMMB 491: Professional Field Experience (2)
PATH 310: Medical Mycology (1)

IMMUNOLOGY AND MEDICAL MICROBIOLOGY COURSE DESCRIPTIONS

IMMB 150. Microbiology Colloquium I. 2 Hr. II Faculty-led discussions and workshops to introduce students to the study of medical microbiology.

IMMB 200. Immunology Colloquium I. 2 Hr. I Faculty-led discussions and workshops to introduce students to the study of immunology.

IMMB 250. Microbiology Colloquium II 2 Hr. II Faculty-led discussions and workshops to introduce students to the study of medical microbiology.

IMMB 300. Immunology Colloquium II. 2 Hr. I Faculty-led discussions and workshops to introduce students to the study of immunology.

IMMB 301. Basic Medical Microbiology. 4 Hr. I. Combined lectures and laboratory exercises on immunology, pathogenic microorganisms, and clinical laboratory techniques.

IMMB 302. Principles of Immunobiology. 3 Hr. I. Study of the basic concepts underlying the mechanisms of innate and adaptive immunity.

IMMB 310. Bacterial Pathogenesis. 4 Hr. II Pathogenic bacteriology with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, motility, toxin production and mechanisms, and normal flora and disease.

IMMB 320. Cellular Immunobiology. 3 Hr. II Emphasis is on contemporary issues in understanding the cellular elements that impact immune responses.

IMMB 350. Microbiology Colloquium III. 2 Hr. II Faculty-led discussions and workshops to introduce students to the study of medical microbiology.

IMMB 400. Senior Colloquium I. 1 Hr. I and II Student-led discussions and workshops on advanced topics in immunology and microbial pathogenesis.

IMMB 405. Scientific Integrity. 1 Hr. I. Review and discussions on current immunology and medical microbiology literature. Seniors are required to lead one journal club discussion before graduation.

IMMB 410. Microbial Genetics. 3 Hr. I. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.

IMMB 420. Molecular Immunobiology. 5 Hr. I. Lectures and laboratory focused on the study of the structure and function of the families of molecules employed by the immune system to recognize and initiate the immune response.

IMMB 450. Senior Colloquium II. 1 Hr. II. Seminars presented by senior students covering contemporary topics in immunology and medical microbiology. Senior students are required to present one seminar before graduation.

IMMB 460. Comtemporary Issues for Majors. 3 Hr. II Detailed coverage of major issues of contemporary research in immunobiology

IMMB 470. Medical Virology. 3 Hr. II. Molecular biology of viruses that are important both biologically and medically. Includes a basic introduction to replication and genetics as well as current topics in molecular virology.

IMMB 491. Professional Field Experience. 2 Hr. I and II. Professional field experience to provide experience in the techniques used in academic or commercial-partner laboratories.

IMMB 494. Seminar. 1 Hr. I. Seminars covering contemporary topics in immunology and medical microbiology.

IMMB 496W. Senior Thesis. 3 Hr II Essays and oral presentations by senior students covering contemporary topics in immunology and medical microbiology. Senior students are required to present one seminar before graduation.

Proposal for a

New Degree Program

at

WVU Tech

B.S. in Forensic Investigation

College of Business, Humanities and Social Sciences

West Virginia University Institute of Technology

Part I. Program Description and Objectives

A. Program Background and Objectives

The Department of Social Sciences and Public Administration in the College of Business, Humanities and Social Sciences at West Virginia University Institute of Technology requests permission to offer a Bachelor of Science degree in Forensic Investigation.

The Forensic Investigation curriculum explores the application of scientific methods and philosophy to legal investigations both civil and criminal. Students explore the role that science plays in recognizing, documenting, and harvesting evidence at crime scenes, and how this evidence is evaluated in a courtroom setting. The program recognizes that field investigators require a breadth of knowledge. Students are encouraged to explore minors in psychology, political science, sociology, criminal justice or the natural sciences.

The educational objective is to graduate majors who have an understanding of the language, history and traditions of criminal and civil investigation; possess the social and scientific skills necessary for interpersonal inquiry; and have leveraged a broad liberal-arts foundation for continuing academic and professional advancement. Graduates of this program will be qualified for entry-level field investigation positions and for pursuit of advanced degrees in graduate or professional schools.

As part of the process for developing this program, a faculty member from WVU Tech met with the forensic science director at WVU and the associate dean of the Eberly College of Arts and Sciences. The distinctions between the WVU Tech Forensic Investigation (FRNX) program and the Forensic Science (FIS) program at WVU were discussed. Specifically how the forensic investigation mission of educating field investigators differs from the laboratory preparation of the WVU forensic science program. As a result of those discussions, distinct courses were created for the WVU Tech program to ensure the selective enrollment and pre-requisite requirements in the WVU program were respected. In addition course names were chosen to differentiate them from similar FIS courses.

B. Program Identification

It is recommended that the CIP code of 43.0106 be applied to the Forensic Investigation, B.S. program.

C. Program Features and Curriculum

The curriculum of the program emphasizes breadth of knowledge and the development of analytical skills. Familiarity with fundamental theories and practices within the social and natural sciences, enhanced communication skills, and an understanding of the limits and uses of forensic techniques form a base from which the student develops either a plan for entry into a graduate program or a career path. The program emphasizes the historical evolution of investigative techniques and terminology and the

use of scientific methods to reconstruct the recent past. The program is appropriate for those planning a career as investigators as well as current practitioners. The curriculum combines classroom instruction, hands-on laboratory and practical field applications, and practicum experience. Students have the flexibility to select courses tailored for future graduate school admissions. Among the notable program's features are a course in research methods, a senior thesis, and a capstone practicum externship that places the student in a supervised setting for professional competence development. A sample matriculation sequence is provided in Appendix I.

- The major will require 120 credit hours. Course syllabi may be found in Appendix IV. The following components make up the curriculum:

- Satisfaction of the university GEC requirements.

- Completion of the Forensic Investigation Core curriculum, which consists of foundational knowledge for investigators, documentation skills, crime scene and evidence analysis, legal parameters of investigation, interviewing and court room testimony. Specifically this entails the following non-elective courses:

    - 34 hours of Forensic Investigation specific courses
        - FRNX 101 (Intro to Forensic Investigation)
        - FRNX 201 (Fingerprint Evidence w/ lab)
        - FRNX 202 (Advanced Fingerprint Evidence)
        - FRNX 301 (Investigative Photography)
        - FRNX 311 (Trace and Blood Spatter Evidence)
        - FRNX 312 (Firearms and Tool-marks)
        - FRNX 315 (Interviewing Theory and practice)
        - FRNX 314 (Crime Scenes)
        - FRNX 316 (Medicolegal Death Investigation)
        - FRNX 484 (Sr Seminar in Forensic Investigation)
        - FRNX 487 (Senior Thesis)
    - 6 credit-hour-minimum (240 contact hours) practicum
        - HUMS 489 (Practicum)
    - 9 hours of Criminal Justice courses
        - CMJS 120 (Survey of Criminal Justice)
        - CMJS 245 (Criminal Law)
        - CMJS 320 (Courts and Judicial Systems)
    - 8 hours of Chemistry
        - CHEM 111 (Survey of Chemistry I)

        - CHEM 112 (Survey of Chemistry II)

            or

        - CHEM 115 (Fundamentals of Chemistry)
        - CHEM 116 (Fundamentals of Chemistry)
    - 3 hours of Physical Science
        - PHSC 101 (Introductory Physical Science)
    - 6 hours of Political Science
        - POLS 102 (Introduction to American Government) or POLS 220 (State and Local Government)
        - POLS 313 (American Constitutional Law)
    - 3 hours of Psychology
        - PSYC 101 (Introduction to Psychology)
    - 3 hours of Sociology
        - SOCA 101 (Introduction to Sociology)
    - 3 hours of Research Methods
        - SOCA 311 (Social Research Methods or PSYC 202 (Research Methods in Psychology)
    - 3 hours of Statistics
        - STAT 211 (Elementary Statistical Inference) or ECON 225 (Elementary Business & Economic Statistics)
- Completion of fifteen (15) hours of restricted electives. These electives are selected with advice from the student's advisor. They allow the student to tailor an undergraduate program for graduate school admissions or for greater exposure to investigative courses.

ACCT 420 Fraud Examination
BIOL 111 Gen. Biology
BIOL 112 Gen. Biology
BIOL 303 Genetics
CMJS 133 Juvenile Justice
CMJS 134 Substance Abuse Policy
CMJS 410 Criminal Investigations
CHEM 233 Organic Chemistry
CHEM 234 Organic Chemistry II
CHEM 235 Org. Chem. Lab
CHEM 236 Org. Chem. Lab
CHEM 310 Instrumental Analysis
CHEM 313 Inst. Analysis Lab
COMM 100 Principles of Human Communication
FRNX 224 AFIS
FRNX 323 Digital Evidence,
FRNX 324 Forensic Anthropology
FRNX 325 Questioned Documents
FRNX 326 Investigative Intelligence
FRNX 327 Sexual Assault Investigations
FRNX 422 Cold Case Investigations
SOCA 232 Criminology
SOCA 302 Deviant Behavior
POLS 400 Terrorism and National Security
HUMS 489 additional practicum hours up to a total of 12.

- Maintenance of a minimum of 2.0 GPA in each Forensic Investigation Course attempted.
- Maintenance of a minimum 2.0 GPA overall.
- Completion of 15 clock hours of department approved community service.

D. Program Outcomes

Program objectives:

Upon graduation, students of the Forensic Investigation Program will be prepared to:

1. Enter the workforce in a broad range of investigative agencies at the federal, state, county, and local levels.
2. Gain acceptance into graduate programs in the area of Forensic Investigation, law, sociology, and related fields.

Learning Outcomes

Upon graduation, students of the Forensic Investigation Program will understand forensic and investigation culture, be proficient in analytical and scientific reasoning, communicate effectively, conduct themselves in an ethical manner, and possess technical skills vital to the profession. More information on each outcome follows, and Appendix II contains a rubric mapping outcomes to courses.

1. Forensic and Investigative Culture

Graduates will have an understanding of the language, history, and traditions of the forensic discipline and the investigative professions.

a. Identify and define “key” terms utilized within the forensic and investigation discipline.

b. Describe the applicable historical development of forensic science in the context of major theories involved in the forensic discipline.

c. Analyze the operations, policies, and procedures within the forensics and the judicial system.

d. Effectively research issues, trends, and history of the forensics field/discipline.

2. Analytical and Scientific Reasoning

Graduates will be able to think critically and solve problems in an investigative situation.

a. Apply the principles of chemistry, physics, and mathematics in the solution of forensics problems.

b. Demonstrate creativity and synthesis skills in the solution of open-ended problems.

c. Devise experiments, to use principles of experimental design, collect data effectively, evaluate data using appropriate statistical tools, and draw sound conclusions from the analysis.

3. Communication

Graduates will be able to communicate in an interviewing, investigative and legal setting orally and in writing.

a. Effectively communicate ideas, plans, and research in verbal and written form.

b. Defend opinions in an adversarial environment.

c. Gain new knowledge and/or enhance skills through independent learning.

d. Develop strategies for assessing the credibility of legal statements.

e. Develop strategies for increasing the quantity and quality of information obtained during a forensic interview.

f. Work effectively as an individual and as a team member.

g. Develop cultural literacy to better understand how culture shapes belief and behavior.

4. Ethics

Graduates will have an appreciation of the ethical, legal and regulatory issues impacting the decision-making process.

a. Apply professional codes of conduct to resolve ethical dilemmas.

b. Recognize ethical dilemmas within the forensics system and interpret the proper course(s) of action.

5. Technical Skills

Graduates will have the skills necessary to conduct investigative work.

a. Students will be able to recognize evidence.

b. Students will be able to process a scene utilizing current protocols.

c. Students will be able to document and preserve evidence.
d. Students will be able to collect information from human sources.
e. Students will understand the limits and scope of information that can be obtained from scientific processing.

Assessment plan

Among the components of the program's assessment plan are student exit and employer surveys, which appear in Appendices VIII and XI. The narrative below offers more information on assessing program objectives

1. **Assessment of program objectives:**

Objective 1: Enter the workforce in a broad range of investigative agencies at the federal, state, county, and local levels.

Direct method: Contact students to determine their employment status.

Indirect methods:

1. Exit interviews with seniors regarding their plans after graduation.
2. Informal contacts with investigation agencies and alumni.

Objective 2: Gain acceptance into graduate programs in the area of Forensic Investigation, law, sociology, and related fields.

Direct method: Contact students to determine their acceptance into a graduate program.

Indirect methods:

1. Exit interviews with seniors regarding their plans after graduation.
2. Informal contacts with alumni.

2. **Assessment of program learning outcomes:**

Learning outcome 1: Graduates will have an understanding of the language, history, and traditions of the forensic discipline and the investigative professions.

Direct method:

Examination

1. The examination will be developed by the program faculty.
2. The examination will be administered in the Senior Seminar each spring semester.

Indirect method:

1. Assignments in classes (such as papers) that relate to the "investigative culture" and require the student to communicate in those terms.

Learning outcome 2: Graduates will be able to think critically and solve problems in an investigative situation.

Direct method:

Completion of mock exercises that immerse students in investigative scenarios.

Learning outcome 3**:** Graduates will be able to communicate in an interviewing, investigative and legal setting orally and in writing.

Direct methods:

1. A Capstone portfolio (required for FRNX 484 – Senior Seminar) will demonstrate the student's writing ability. Files of student portfolios will be maintained in the department's archives.
2. Completion of a research proposal in SOC 311(Social Research Methods), PSYC 202 (Research Methods in Psychology), and FRNX 487 (Senior Thesis) will demonstrate the student's writing ability. Files will be maintained in the department's archives.
3. Students must complete FRNX 315 Investigative interviewing with a C or better.

Indirect methods:

1. Academic papers are required in several courses in the Forensic Investigation Program and students are provided with feedback on their papers.
2. In some classes, students have the opportunity to receive feedback on their paper prior to final submission.
3. Students who need to improve their writing skills are encouraged to utilize the services of the WVU Tech Writing Lab.

Learning outcome 4**:** Graduates will have an appreciation of the ethical, legal and regulatory issues impacting the decision-making process.

Direct methods:

1. Research Methodology presented as part of the FRNX 487 Senior Thesis will demonstrate ethical considerations.

2. Writing assignments in FRNX 315 Investigative Interviewing and other courses will demonstrate the students ethical thought processes.

Indirect Methods:

1. Mock scenarios embedded throughout the curriculum will provide opportunities for the student to demonstrate this outcome.

Learning outcome 5**:** Graduates will have the skills necessary to conduct investigative work.

Direct methods:

A. Self-evaluation from the student through exit surveys (See Appendix IX for a draft exit survey).

B. Surveys with the graduate's place of employment or practicum site. (See sample survey Appendix VII modeled after WVU's Chemical Engineering Survey.)

C. Review of the senior portfolio created in FRNX 484 Senior Seminar.

Indirect methods:

Faculty performance will be evaluated by students, peers, and department chair. Student's evaluations will be conducted in each course every semester with quantitative and qualitative feedback. Department chairs will visit each classroom and evaluate each faculty member in the area of teaching. All faculty members undergo a peer evaluation yearly at the end of the calendar year.

A map of learning outcomes to core courses is provided in Appendix II.

E. Program Delivery

Forensic Investigation is designed as a traditional on-campus program delivered at the WVU Tech campus in Montgomery. The introductory course, FRNX 101, may be developed for an on-line delivery modality following the introduction of the program.

Part II. Program Need and Justification

A. Relationship to Institutional Goals/Objectives

The program fits well within the mission of the West Virginia University Institute of Technology “to prepare students for careers (in engineering and science; and in business, humanities, and social sciences) and to enrich the socioeconomic and cultural lives of its students and members of the communities of Southern West Virginia. “ Beyond the career-oriented skills that the students learn, the program attracts students of diverse backgrounds and interests, which will enrich the culture of the Montgomery campus.

B. Existing Programs

Few institutions offer a baccalaureate in-seat Forensic Investigation program, and none in West Virginia currently offer a baccalaureate program like that proposed in this document. Most universities offer laboratory and technician programs that differ sharply from the focus of the proposed WVU Tech program. In addition to the WVU main campus, examples include Marshall University (Forensic Chemistry) and Fairmont State University (Forensic Science). Glenville State University and WVU at Parkersburg offer criminal justice majors with an emphasis in investigative science and technology. Appendix V contains information on out-of -state colleges and universities.

C. Program Planning and Development

Upon completing an analysis of existing programs, employment opportunities, and student interest, the faculty in the WVU Tech Department of Social Sciences and Public Administration developed the curriculum and proposal for the proposed Forensic Investigation Program. The department chair met with the Dean of the College of Business, Humanities, and Sciences and the campus Associate Provost on several occasions for the purpose of reviewing resources and infrastructure requirements. The curriculum was approved by the College Curriculum Committee, the WVU Tech Academic Affairs Committee, and Campus CEO.

In preparation for this program, a WVU Tech faculty member met with the director of the WVU Forensic Science program in Morgantown and discussed the goals, objectives, and curriculum of a new program on the Montgomery campus. The Forensic Investigation program (FRNX) to be offered at WVU Tech differs from the Forensic and Investigative Science (FIS) program on the main Morgantown Campus in that the focus of the Tech program is field and scene work, whereas the FIS program is primarily laboratory focused. To minimize confusion between the two programs and to honor the restricted enrollment requirements for the FIS program, unique courses were created for the FRNX program, and course names were chosen that distinguish between them.

The program fits well within WVU Tech’s existing curricula and draws from the established Criminal Justice curriculum. By selecting the appropriate courses from the restricted electives pool, students are able to complete a minor in Criminal Justice within the 120 hours required for the Forensic Investigation Major.

D. Clientele and Need

A Forensic Investigation program will generate high enrollment, compliment the Criminal Justice program, and require minimal new resources for implementation. WVU Tech has seen enrollment declines in recent years, and a niche program that is attractive to out-of-state students adds to the cultural diversity of the campus and contributes to the institution's sustainability. As evidenced by WVU's Forensic Science program and MSU's Forensic Investigation program, forensic oriented studies draw from an international pool of students.

Interest from prospective students is significant based in part on feedback from admissions counselors attending recruiting fairs and inquiries from students desiring to enter the program on the Tech campus. In the 2012 fall semester, WVU Tech accepted a request from the West Virginia Higher Education Policy Commission and subsequently approved by the Higher Learning Commission to offer a teach-out plan for Mountain State University (MSU) students allowing them to complete their degrees. Twenty students transferred to WVU Tech from MSU in the fall 2012 semester. In addition, MSU donated equipment and supplies in support of the Tech program. The publicity from the teach-out plan resulted in thirty-one new (first time) students seeking admission to WVU Tech in fall 2013 (as of January 2013) for the purpose of pursing a degree in Forensic Investigation.

Employment Opportunities

The Bureau of Labor Statistics estimates the need for 2400 new crime scene technicians ($52k median pay), 58,700 Police/Detectives ($55k median pay) and 7000 new investigators ($42k median pay) between 2010 and 2020 (www.bls.gov).The National Academy of Sciences and the U.S. Department of Justice have issued reports criticizing the current educational state of forensic practitioners and calling for a more professionalized service by moving away from the current apprenticeship model.(1,2) "Certain forensic disciplines appear to have important manpower shortfalls, including crime scene processing, digital evidence analysis, latent fingerprint examination, firearms examination, document analysis, and toxicology. " - National Institute of Justice. (2006). *Status and Needs of Forensic Science Service Providers: A Report to Congress*. Retrieved from https://www.ncjrs.gov/pdffiles1/nij/213420.pdf on 10/1/2012.

Program Impact

The main impact that the Forensic Investigation B.S. program will have on other programs at WVU Tech is to increase enrollment in such support courses as the sciences, mathematics, statistics, English, criminal justice, history, and social science classes. While it is difficult to predict how many new students may be added, it is anticipated that the program will help to increase the overall enrollment and improve the division's finances. With a faculty-student ratio of 11:1, nearly every department has excess capacity and will be able to accommodate additional students without the necessity of hiring more faculty.

E. Cooperative Agreements

WVU Tech will be able to establish articulation agreements with several community colleges allowing a seamless transfer of credits into the Forensic Investigation program. Some examples include Central Ohio Technical College and Columbus State Community College. The Department of Social Sciences and Public Administration maintains agreements with numerous local and regional employers, which may provide internship/externship opportunities for students enrolled in the program.

F. Alternatives to Program Development

No alternatives were considered.

Part III. Program Implementation and Projected Resource Requirements

A. Program Administration

The Forensic Investigation program will reside in the Department of Social Sciences and Public Administration, which is part of the WVU Tech College of Business, Humanities and Sciences (BHSS). The Department offers majors in Criminal Justice, Health Services Administration, and Public Service Administration. The academic administrative structure includes the department chair, college dean, campus associate provost, and campus CEO. Academic and curriculum issues will be addressed on the WVU Tech campus by the department faculty, BHSS College Curriculum Committee, and WVU Tech Academic Affairs Committee. The dean, the associate provost, and the CEO must endorse changes prior to final approval, especially in cases with resource implications. The dean and the associate provost manage the academic decision making processes.

B. Program Projections

Students may be admitted into the program as freshman or by transfer from accredited institutions of higher education by meeting WVU Tech's admission requirements for entry into a baccalaureate program. See Appendix VII for admission standards. An estimate of the size of the Forensic Investigation program is approximately 125 full-time students (all paying full tuition and fees) within five years. The estimate is based in part on interest expressed by numerous students attending Tech and by the popularity of similar programs at institutions offering similar forensic programs. Projected enrollment in the first year is anticipated at 25 students, second year 55, and by the fifth year 125. Appendix VI provides information on anticipated enrollment and student credit hour productivity.

C. Faculty Instructional Requirements

WVU Tech's current teaching load for full-time faculty is 24 credit hours per year in addition to scholarly and service activities. Adjunct faculty may be expected to teach without the additional service and scholarship expectations. It is within these expectations that the following requirements are estimated.

WVU Tech currently has one full-time forensic investigation faculty member and one adjunct (.50 FTE). In order to implement a baccalaureate program, one additional full-time, tenure-track position in Forensic Investigation and two or three adjuncts (1.00 FTE) will be necessary. Faculty requirements may be met according to the following timeline:

Year 1:	Existing full-time faculty member and 1 adjunct
Year 2:	Existing full-time faculty member and 1 adjunct
Year 3 and after:	Two full-time faculty members and 2-3 adjuncts (1.00 FTE)

Eighty-seven hours of the one-hundred-twenty hour curriculum will be supported by existing courses and faculty. WVU Tech's current student to faculty ratio of 11:1 allows the institution to absorb the additional students. Within three or four years following the introduction of the program and as enrollment projections have been met, however, additional faculty in criminal justice and in English may be required to support the program.

D. Library Resources and Instructional Materials

Forensic Journals and other selected database resources currently in the WVU (Morgantown) Library will meet the needs of the WVU Tech program. Additional subscription fees are expected. Among them are the Journal of Forensic Science ($550 per year) and the CRC Textbook database–ForensicNetBase ($2850 per year for two concurrent users). The Journal of Forensic Identification is currently held within a Criminal Justice Proquest subscription. The WVU Tech Vining Library and the main campus library will work out arrangements making resources available to Tech faculty and students. These costs are reflected in Appendix VI.

E. Support Service Requirements

Current classroom facilities provide adequate space and equipment for collateral support of the proposed Forensic Investigation B.S. program. The program requires a dedicated laboratory/studio of approximately 2,500 square feet and outdoor field site for crime scene simulation. Both types of facilities are currently available. Two classrooms, COBE G17 and COBE G18 are currently dedicated. A 4000 square foot residence on campus has been approved for use as a crime-scene house. 10 digital cameras at a total cost of $3500 will be necessary for full implementation of the program. The cost of these cameras is reflected in Appendix VI. Mountain State University donated equipment (cameras, crime-scene equipment, etc.) and supplies that presently supports the teach-out plan and may support a permanent WVU Tech program.

Since the Forensic Investigation program will be included in the Department of Social Sciences and Public Administration, no additional administrative or secretarial personnel are required. It should also be noted that the department discontinued the Industrial Relations and Human Resources (IR/HR) B.S. program effective fall 2013, which will allow the administrative support, secretarial services, and funding for adjuncts to be reallocated in support of Forensic Investigation. Appendix VI offers details on the plan.

F. Operating Resource Requirements

Operation of the Forensic Investigation B.S. program will rely, to a large extent, on existing WVU Tech resources, service, and personnel. New resources required to support the program include 2.0 FTE faculty (one full time, tenure track position and 2-3 adjuncts) and current expense dollars (department operating budget). The details regarding these needs are shown above in Heading C (Faculty Instructional Requirements) and Appendix VI.

Most new costs associated with personnel will be incurred in the last three years of the program. In year 1 and year 2, the current faculty member and adjunct will continue to provide courses for the program. In AY 2015-2016 as enrollment targets are met, one full-time new forensic faculty position and two or three adjuncts will be added to offer specialized courses. Through aggressive marketing, it is anticipated that the growth in student enrollment will more than offset the costs associated with the addition of one new position and adjunct faculty.

G. Source of Operating Resources

Operating resources will be derived from the WVU Tech central budget, re-allocation of resources from the discontinued IR/HR program, and, in the case of on-going laboratory expenses, from a proposed special fee of $100 per student enrolled in forensic laboratory courses. While it is difficult to estimate the incremental enrollment increase, it is anticipated that as the program attains its enrollment targets it will not only offset the additional operating costs, but also will add to the financial assets of the institution. See Appendix VI for more details. In addition, an expectation for tenure-track faculty will include procurement of external funding sources.

H. Anticipated Enrollment

As stated under Heading B above, the program is expected to attract 125 new students within five years. It is anticipated that approximately 22 students should graduate beginning in year 4. WVU Tech expects to enroll 30 students in the fall of 2013. As a reference, a similar program at Mountain State University had 200 traditional in-seat students in 2007.

I. Admissions Criteria

The criteria for admission into the Forensic Investigation major are admission into the College of Business, Humanities and Social Sciences at WVU Tech. Any student enrolled in the College of Business, Humanities and Social Sciences may enroll in the Forensic Investigation Major.

Course Prefix and Number: NSG 411
Course Title: Nsg/Complex Community Systems

Capstone Course Application

Courses approved for the Capstone experience must be at the 400 level. The capstone experience may be cross-disciplinary as well as focused on a specific discipline. The capstone experience is not limited to, but may include

- a senior thesis
- a music recital
- an art exhibit
- a service-learning experience
- an undergraduate research project
- a study-abroad experience
- a teaching internship experience

Definition of the Capstone Experience

The capstone experience is defined as an academic experience in which students demonstrate, in a significant, relevant project that has both an oral and a written component, their abilities:

(i) to gather material independently, as needed
(ii) to think critically about and to integrate the theoretical and/or practical knowledge that they acquired throughout their undergraduate careers
(iii) to reflect on the ethical issues that are implicit in their projects and/or their project's design

The complete Capstone application should include:

- the College/School Sign-Off sheet
- the Capstone Experience form (please do not exceed two pages)
- the Capstone course syllabus

Course Prefix and Number : NSG 411

Capstone Experience Form

A. Please provide a statement that illustrates how a student in the Capstone course would demonstrate each of the following abilities:

1. Gather material independently, as needed:

- Students are required to locate statistics that support the health problem they target for intervention.
- Students are required to search the nursing and allied health literature to identify six peer-reviewed articles and develop an annotated bibliography.

2. Think critically about and to integrate the theoretical and/or practical knowledge that they have acquired throughout their undergraduate careers:

- Prior to the Capstone course, students receive content about theories explaining health behavior change, age/developmentally appropriate health promotion interventions, and health education. The Capstone project requires them to apply this information in the design, implementation, and evaluation of a community-based health promotion project.

3. Reflect on the ethical (or societal) issues that are implicit in their project and/or their project's design:

- Since the concept of social justice is critical in public health, students are required to discuss both ethical and social issues that shaped their project. This includes a reflection on the major ethical concepts plus family and social issues that they considered when designing their project or discovered when implementing it.

B. Capstone Components

1. Please describe briefly how the written component of the Capstone Experience in the course is completed:

- Students complete 3 written components for their Capstone – a problem statement which justifies their selection of topic with health statistics, an annotated bibliography and synthesis of the results of the research articles that support their proposal, and an implementation plan that details the actions that they will take during their project (including a discussion of ethical and societal issues).

1. Please describe briefly how the oral component of the Capstone Experience in the course(s) listed above is completed.

- The Capstone experience requires students to create and deliver a presentation to a community group. In addition, students create a professional poster that describes the work that they have done and present a five minute synopsis of their work to course faculty and other faculty and staff who view their posters.

- For additional details, please see "Guidelines for Capstone Presentations".

Name of Institution:	West Virginia University
Date:	April 12, 2013
Category of Action Required:	Restructuring of the BS and BA Biochemistry Degrees Offered at West Virginia University
Title of Degree:	Bachelors of Science Major: Biochemistry
Location:	Morgantown, WV
Effective Date of Proposed Action:	Fall 2013

Prologue: The format of this proposal is intended, to the extent possible, to follow 133CSR11. This rule is for the creation of new academic programs and the discontinuance of existing programs. However, the focus of this proposal is to combine programs across two colleges into 1 degree program. Given that the rule does not exactly address the aim of this proposal, much of the requested information is not applicable to the proposal or has already been established in the previous proposals creating the undergraduate programs at West Virginia University. Moreover, there is some added information that is crucial to understanding how the programs will be combined.

Brief Summary Statement: We propose to merge the current BS and BA degrees in Biochemistry to create a single BS in Biochemistry administered by two colleges.

Summary

The Davis College of Agriculture, Natural Resources, and Design, and the Eberly College of Arts and Sciences propose a series of improvements to existing bachelor degrees in biochemistry that will:

(1) Increase the quality of the existing degree programs
(2) Increase the number of high-caliber students recruited to WVU
(3) Use existing faculty resources more efficiently through extensive cooperation between the two colleges

Three existing degrees (two Bachelor of Arts in Eberly and one Bachelor of Science in Davis) will be collapsed into one Intercollegiate BS program (coded as separate virtual majors, one for each college, university level reporting) with a revamped curriculum that

meets the latest standards set by the American Chemical Society (ACS) and the American Society for Biochemistry and Molecular Biology (ASBMB). The new curricula are shown in Appendix I. There are two curricula because of the slightly different requirements for ACS and ASBMB. The new arrangement of majors is shown in Appendix II.

A single web site will be maintained for all Biochemistry majors. Majors will be assigned to faculty advisors residing in both colleges by the curriculum committee which is composed of faculty members as described below. Each college will be responsible for clearing degrees and college level advising for all of the students assigned to the faculty in that college. All graduates will be invited to both college commencements, and counted as alumni of both colleges. A common "college tuition" will be used for all majors, and the funds will be shared by the two colleges under the terms of this proposal.

Two standing committees will be created to guide and nurture the program:

(1) An intercollegiate faculty curriculum committee composed of faculty members in Davis and Eberly as described below will ensure that curriculum structure and standards remain contemporary and united such that there is only one degree program between the two colleges.
(2) A stakeholder committee consisting of administrators and faculty from both colleges who will ensure that the costs of administering the degree are met, and that both colleges remain cooperative and focused on the success of the entire program.

Background

Biochemistry is a discipline that is highly relevant to the new "Century of Biology", and typically attracts high-caliber students, many seeking careers in research or medical professions. Most Land Grant Universities have strong and vibrant biochemistry degree programs, usually housed within biochemistry departments. WVU, however, does not have an undergraduate biochemistry department, and total enrollment in its biochemistry degrees is small relative to those in peer institutions. A variety of structural challenges stand in the way of greater success for WVU. Chief among these are:

(1) There are currently too many biochemistry degree programs at WVU, they are poorly aligned with each other resulting in confusion for students and faculty, and because we have multiple degrees and majors, some of the programs (particularly the BA degrees) have poor alignment with the latest recommended curricula from ACS and ASBMB.
(2) Faculty expertise needed to teach biochemistry core courses (i.e., biology, biochemistry and chemistry, each comprising about the same proportion of the curriculum) is highly dispersed across multiple departments within the two colleges making coordination of effort very difficult.
(3) Currently, none of WVU's biochemistry degrees/majors have the correct nationally recognized biochemistry Classification of Instructional Program (CIP)

codes. Consequently, for many national level purposes, WVU is not recognized for training biochemistry students.

To solve these structural challenges and create a program that is well-aligned with ACS, ASBMB and national CIP standards, we propose an inter-collegiate program in which all undergraduate biochemistry degrees are collapsed to one (BS only, eliminating the BA), the number of majors is collapsed to two (one per college, but tracked internally without students being aware that they are technically within just one college portfolio), and two intercollegiate committees, a curriculum and stakeholder, are formed to coordinate efforts.

Program Objectives:

The purpose of this request is to:

(1) Increase the quality and reputation of the undergraduate biochemistry program at WVU by engaging more of WVU's advanced biochemistry analytical facilities and the University's tenure track biochemistry faculty with the undergraduate biochemistry curriculum

(2) Attract more STEM oriented students to WVU in accordance with WVU strategic plans

(3)Increase the quality of WVU's undergraduate student application pool by attracting students who typically have high-quality credentials

(4) Better align the curricula (Appendix I) with contemporary, recommended curricula published by the American Chemical Society and American Society of Biochemistry and Molecular Biology

Program Identification: *Proposed Modifications to Degrees and Majors*

The attached curriculum matrix (Appendix II) shows how the current degree structure can be greatly simplified with correct CIP codes applied. The following model, adapted from Virginia Tech (see http://www.biochem.vt.edu/undergraduate.php) is proposed to manage and nurture the new single degree (BS) with two major codes (Biochemistry), one major code per college.

Program Features: The catalog description of the program has been developed (Appendix III).

Program Outcomes: *Measures of Program Success*. Program success will be defined as a large number of majors (200+) with high retention and completion rates, and high rates of placement in graduate and professional degree programs, relative to university averages. Additional formative assessment will include the student evaluation of instruction and student assessment of programs at program completion. Alumni surveys will likewise be completed. Collectively, these data will be shared during meetings of the stakeholder committee, described below, to improve the quality

and productivity of the program. Specifically, the collected data will be used to document continued need of the program. Program assessment will also occur by five year trend data on enrollment and degrees awarded and job placement data.

Program Delivery: Traditional lectures and laboratories will comprise the bulk of the program.

Relationship to Institutional Goals: *Alignment with WVU mission.* This proposal fits very clearly within WVU's new Vision 2020 strategic plan by providing a challenging learning environment for undergraduate students (Goal #1). The Biochemistry curriculum is rich in problem solving and laboratory experiences, and employs interdisciplinary approaches spanning physics, mathematics, computational science, biology and chemistry. It is anticipated that this curriculum will draw a greater number of applicants to WVU who have excellent credentials and ambitions for advanced degrees in research or the medical fields.

Existing Programs: *Simplifying structure and improving reporting*. Currently, the two colleges offer different degrees (B.A. in Eberly and B.S. in Davis), tended by different faculty curriculum committees, and none of the degrees have the correct Classification of Instructional Programs (CIP) code designation (see Appendix II), which means that according to the U.S. Department of Education's National Center for Education Statistics (NCES), WVU officially has no graduates in biochemistry.

Program Planning and Development: The work for this joint proposal began over 5 years ago. In that time frame, Animal and Nutritional Sciences (A&NS) has hired another faculty member to work with the growing number of students in the biochemistry program. Also, A&NS has created a laboratory (AGBI 412) for the Introduction to Biochemistry lecture (AGBI 410). Biology has hired an additional faculty member to work in the biochemistry area (Dr. Shuo Wei) who will teach the third biochemistry class in the three semester series. Dr. Wei will also develop an associated laboratory. In Chemistry, Dr. Jonathan Boyd has developed an Intermediate Biochemistry class (CHEM 462) and associated laboratory (CHEM 464). Biology, Chemistry and A&NS have already devoted resources to the laboratories for the majors. All three of the aforementioned entities have hired faculty who can participate in the Intercollegiate Undergraduate Program in Biochemistry. Both colleges have strong support from their respective Deans to assure success of the program. A letter of intent was sent to the Associate Provost office in December 2011.

Clientele and Need: *Rationale/Need***.** In the most recent Board of Governors review of the biochemistry programs in the Eberly college, the faculty were advised to change the degree from a Bachelor of Arts to a Bachelor of Science degree, to make the revised degree conform with curricula recommendations for biochemistry published by the American Chemical Society and the American Society for Biochemistry and Molecular Biology,and to coordinate the programs with the BS degree offered by the Davis College. Several arguments support the logic of these recommendations, including:

Leveraging resources to improve quality and capacity: Better coordination and uniformity of approach are needed to capture the full capability of WVU's faculty and facilities, and insure that the curriculum remains contemporary and aligned with standards set by professional societies. Biochemistry degrees typically require relatively equal shares of biology, chemistry, and specialized biochemistry courses. At WVU, the biology courses are split between the Davis and Eberly Colleges, chemistry courses are entirely housed in Eberly, and undergraduate biochemistry courses are housed entirely in Davis. A single curriculum tended by strong coordination across all relevant academic units is necessary to keep the program relevant in today's highly dynamic biochemistry profession. Strong coordination around a single curriculum can leverage and apply more resources (equipment, faculty, and laboratory space) to the program, insuring high quality and attracting high quality student prospects to WVU.

Staying current in a time of rapid change and development in the fields of biology and chemistry: Biochemistry is by its nature highly interdisciplinary, and it is becoming more so. Furthermore, the pace of change and advancement at the cutting edge in chemistry and biology are accelerating. Now more than ever, expert faculty in both chemistry and biology are needed to keep up with advances in biochemistry and maintain relevant and vibrant biochemistry curricula. Unifying the curriculum and sharing the teaching of the program across two colleges will ensure the necessary expertise to keep the major relevant and challenging.

Employment Opportunities: The overwhelming majority of students who complete the Biochemistry curriculum continue their education. Most frequently, they attend medical or other professional school (~60) or graduate school (~25%) with the remainder taking jobs directly after graduating. This data is based on the most recent BOG report of the BS Biochemistry program. The US Bureau of Labor Statistics notes that the field of biological science has grown and is projected to grow faster than average. Moreover, preparing these young people for medical, other professional programs and graduate programs puts them into position to garner high-paying jobs.

Program Impact: The biochemistry curriculum is rigorous and will attract high-achieving students to the university. We would expect increases in the number of high-achieving students in biology and chemistry classes in the curriculum.

Cooperative Arrangements: The whole basis of this proposal is to increase cooperation between two colleges, their students and their faculty.

Alternatives to Program Development:

Program Administration: *Management*: One web page managed by the Davis College, one inter-collegiate stakeholders committee and one intercollegiate curriculum committee meet annually to guide the program. In each college, a home department, or

a consortium of departments, will be chosen to tend the degree following guidance provided by the inter-collegiate committees. The initial committee structure will be:

Curriculum	Kenneth Blemings (Chair)	Professor, Division of Animal & Nutritional Sciences
	Kimberly Barnes	Assistant Professor, Division of Animal & Nutritional Sciences
	Jonathan Boyd	Assistant Professor, Department of Chemistry
	Clifton Bishop	Associate Professor, Department of Biology
Stakeholder	Daniel Robison	Dean, Davis College
	Kung Wang	Chair, Department of Chemistry
	Robert Jones	Dean, Eberly College
	Denny Smith	Associate Dean, Davis College
	Michael Schaller	Chair, Department of Biochemistry, School of Medicine
	Richard Thomas	Chair, Department of Biology
	Matthew Wilson	Chair, Division of Animal & Nutritional Sciences

Commencement and alumni status: Each student will be invited to both commencement ceremonies. For official head counts and certain data reports that are reported to parties external to WVU, the majors will be binned separately. However, for many venues (e.g., newsletters or other public relations outlets), the colleges can choose to share credit for total program successes. Diplomas will include signature lines from both college deans.

Advising and enrollment: Students are directly admitted to the major and the admissions of all students will initially be in the Davis College. The curriculum committee will work with admissions to ensure there is only one biochemistry option for students to select when applying to West Virginia University. The curriculum committee will then meet to assign students to each college. Each college will be responsible for advising its own majors. The single biochemistry web page will provide an advising tool that advisors in both colleges can use. The curriculum committee will yearly report the number of majors to the stakeholder group. Enrollments will be carefully monitored by the Stakeholder Committee, which will actively pursue an ideal distribution of incoming freshman and transfer students initially assigned to each college. Balancing the majors will be achieved through inter-collegiate cooperation in advising and recruiting.

Curricula: Both majors will have a common core curriculum that includes a single 199 course (currently taught in Davis college), and the rest of the courses in line with ACS and ASBMB recommendations. Degree Works exceptions will be agreed upon by the curriculum committee.

Program Projections: *Anticipated Enrollment.*

The number of undergraduate students enrolled in comparative universities in WVU's region (see table below) indicate that WVU has capacity to grow its current combined enrollments (BA + BS, fall 2010 data) from ~160 to 300 or more.

Institution	Total Main Campus Enrollment Fall 2010	Number of Biochemistry Majors Fall 2010	Degree	Program Home
WVU	29,000	96	BS Biochemistry	Division of Animal and Nutritional Sciences, Davis College
		64	BA Biochemistry	Departments of Biology and Chemistry, Eberly College
Virginia Tech	28,000	325	BS Biochemistry	Department of Biochemistry in College of Agriculture, and College of Science
University of Kentucky	28,000	44 (very new program and increasing rapidly)	BS Chemistry, Biochemistry Emphasis	Department of Chemistry, College of Arts and Sciences
NC State University	34,000	400	BS Biochemistry	Department of Molecular and Structural Biochemistry, housed jointly by the College of Agriculture and Life Sciences and College of Physical and Mathematical Sciences
Ohio State University	64,000	361	BS Biochemistry	Department of Biochemistry, College of Arts and Sciences
Penn State University	45,000		BS Biochemistry and Molecular Biology, Biochemistry Option	Department of Biochemistry and Molecular Biology, Eberly College of Science
University of Maryland	37,000	250	BS Biochemistry	Department of Chemistry and Biochemistry, College of Computer, Mathematical, and Natural Sciences
University of Tennessee	27,500	336	BS in Biology, Concentration in Biochemistry and Cellular and Molecular biology	Department of Biochemistry and Cellular and Molecular Biology, College of Arts and Sciences

Faculty Instructional Requirements: The proposed major would be implemented with the current faculty.

Davis College of Agriculture, Natural Resources and Design
- Animal and Nutritional Sciences
  - Kimberly Barnes, PhD (Assistant Professor)
  - Kenneth P. Blemings, PhD (Professor)
  - K. Marie Krause, PhD (Associate Professor)
  - Joseph McFadden, PhD (Assistant Professor)
  - Janet C. Tou, PhD (Associate Professor)
  - Matthew E. Wilson, PhD (Associate Professor)
  - Jianbo Yao, Phd (Associate Professor)

Eberly College of Arts and Sciences
- Biology
  - Ashok Bidwai, PhD (Professor)
  - Clifton Bishop, PhD (Associate Professor)
  - Kevin Lee, PhD (Teaching Assistant Professor)
  - Shuo Wei, PhD (Assistant Professor)
- Chemistry
  - Jonathon Boyd, PhD (Assistant Professor)
  - Lisa Holland, PhD (Associate Professor)
  - Jeffrey Petersen, PhD (Professor)
  - Brian Popp, PhD (Assistant Professor)

Library Resources and Instructional Materials: N/A

Support Service Requirements: *Resource Requirements:* To meet the proposed, unified curriculum and manage the program, new resources will be needed to develop a recruiting strategy and web page, and teach a small number of new courses. The Davis and Eberly Colleges have committed to provide the necessary resources, including faculty time and finances for recruiting and advising students. Some classroom space may still need to be identified to accommodate demands for new biochemistry laboratory courses; existing spaces will suffice until the new spaces are ready.

Facilities Requirements: N/A

Operating Resource Requirements: N/A

Source of Operating Resources: *Finances*: Assuming that fee simplification will lead to college-specific tuition charges, the Eberly and Davis Colleges will set a

common college tuition for Biochemistry majors. Each year, the Stakeholders Committee will estimate the costs of coordinating the degree program (e.g., creating and maintaining the web page, implementation of a common recruitment plan if one is developed, etc.). The committee will determine if and to what extent some cost sharing will be needed to ensure that both colleges are fully and fairly supporting the program. As a starting point, an enrollment of 200 students paying a college tuition of $600 would generate $120,000 to operate the program. The college tuition will be sent to the advisor's college.

Note on the curricula: Appendix I shows two different curricula leading to the BS degree in Biochemistry. The Non-ACS option is modeled after the curriculum recommendations of the American Society of Biochemistry and Molecular Biology (ASBMB). The ASBMB does not currently accredit programs. The ACS option meets the requirements of the American Chemical Society. The ACS does accredit degrees. The differences in the curricula are that the ACS program includes CHEM 310, 401, 403, 422 and 497 as well as the requirement for calculus based physics (PHYS 111 and 112) while these are not required in the Non-ACS option. The ACS option does not include a third semester of Biochemisty with lab (BIOL 4AA/4BB) or AGBI 494 both of which are required in the Non-ACS option. The ACS option requires 9 credits of biochemistry elective classes while the Non-ACS option requires 16 credits.

The proposed curricula for the NON-ACS and ACS options along with suggested sequences of courses, which include courses required for the major and courses meeting the West Virginia University General Education Curriculum (GEC) follows. Note that there are no required GEC classes; however, some of the courses required for the Biochemistry degree may also satisfy GEC objectives. The actual program of study for each student will be determined by the student in consultation with the academic advisor.

APPENDIX I: DRAFT BACHELOR OF SCIENCE (B.S.), CURRICULUM IN BIOCHEMISTRY [NON-ACS Option]
INTERCOLLEGIATE UNDERGRADUATE PROGRAM IN BIOCHEMISTRY

Name_____ **Advisor**_____

General Education Curriculum*	**28/29**	
GEC-1 Communication	**6**	
English 101	3	
English 102	3	
GEC-2 Basic Math/ Sci Inquiry	*	
GEC-3 The Past and Its Traditions	3	
GEC-4 Issues Contemp. Soc. (Stat 211)	3	
GEC-5 Artistic Expression	3	
GEC-6 The Individual in Society	3	
(First-Year Experience Class)	1/2	
GEC-7 American Culture	3	
GEC-8 Western Culture	3	
GEC-9 Non-western Culture	3	
Biological & Physical Science	**72**	
Ag. Biochem. 199 (Orient. to Biochem)	1	
Biology 115 (Principles of Biology)	4	
Biology 117 **(** Intro. Physiol.)	4	
Biology 219 (Living Cell)	4	
Biology 310 (Adv. Cell & Molec. Biol)	3	
Biology 313 or 410 (Cell Growth or Methods)	3	
Biol 4AA/4BB (Biochemistry III)	3/1	
Chemistry 115 (Fundamentals I)	4	
Chemistry 116 (Fundamentals II)	4	
Chemistry 215 (Analytical)	4	
Chemistry 233 / 235 (Organic I)	3 / 1	
Chemistry 234 / 236 (Organic II)	3 / 1	
Chemistry 341 / 342 (Physical Chem)	3 / 1	
Chemistry 462/464 (Biochemistry II)	3 / 1	
Physics 101 or 111 (Intro or General I)	4	
Physics 102 or 112 (Intro or General II)	4	
Mathematics 155 (Calc I)	4	
Mathematics 156 (Calc II)	4	
AGBI 494 (Seminar)	1	
AGBI 410 / 412 (Intro. Biochem)	3 / 1	

Biochemistry Elective Credits from the following:**	**≥16**	
Animal area		
AGBI 512 / 513 (Nutr. Biochem &lab)	3/1	
ANPH 301 (Anim. Physiol)	3	
ANPH 400 (Growth and Lactation)	3	
ANPH 405 (Physiol lab)	2	
ANPH 424 (Repro Physiol)	3	
VETS 302 (Animal Pathology)	4	
VETS 401 (Veterinary Anatomy)	3	
VETS 405 (Parasitology)	3	
BIOL 348 (Neurobiology)	3	
BIOL 436 (General Animal Physiology)	3	
BIOL 441 (Vertebrate Microanatomy)	5	
ENTO 404 (Principles of Ento)	4	
ENTO 412 (Pest management)	4	
HNF 460 (Advanced Nutrition)	3	
HNF 474 (Nutrition in Disease)	3	
Cell and Molecular Biology		
AGBI 514 (Anim. Biotechnology)	4	
BIOL 312 (Virology) "W"	3	
BIOL 313 (Molec Basis of Cell Growth) or BIOL 410 (Cell and Molec. Biol Methods)	3	
BIOL 315(Developmental Biology)	3	
BIOL 413/414 (Molec. Endo / lab)	3/1	
BIOL 335 (Cell Physiology)	3	
BIOL 432 (Forensic Biology)	4	
Chemistry		
CHEM 310 (Instrumental Analysis)	3	
CHEM 312 (Environmental Chem)	3	
CHEM 422 (Int. Inorg. Chem.)	3	
CHEM 460 (Forensic Chemistry)	3	
CHEM 514 (Mass Spec. Princ & Prac.)	3	
CHEM 516 (Bioanalytical Chem)	3	
CHEM 522 (Biochemical Toxicology)	3	

Period of Attendance:
Previous College:
Minor:
First post-Graduate position/school:
Revised 02/12 (kpb) Date Of Graduation_____

***GEC 2 not included since completion of degree requirements assures completion of this area**

**** Students will work with their advisor to complete the university's writing and capstone requirements**

Genetics		
BIOL 324/325 (Molec. Genetics/lab)	3/1	
BIOL 411 (Intro to Recombinant DNA)	4	
BIOL 425 (Developmental Genetics)	3	
GEN 371 (Principles of Genetics)	4	
Microbiology area		
AEM 341 **(GEC 2c or GEC 4)**(Gen Microbiology with lab)	4	
AEM 401 (Environmental Microbiology)	4	
AEM 408 (Applied Water Microbiology)	3	
AEM 420 (Soil Microbiology)	3	
FDST 445/449 (Food Micro. / lab)	3/1	
Plant		
BIOL 350 (Plant Physiology)	4	
HORT 420 (Plant Propagation)	4	
PPTH 401 (General Plant Pathology)	3	
Other		
AVS 402 (Values & Ethics) "W"	3	
AVS 451 (Current Literature) "W"	3	
AVS/BIOL/CHEM 496 (Thesis) capstone		
AVS/BIOL/CHEM 497 (Res.) capstone		
BIOL 301 (Biometry)	3	
BIOL 424 (Protein Struct & Function)	4	
Free electives	**≥12**	
Total Credit Hours Earned		
Credits Required	**128**	

Proposed BS Biochemistry Curriculum for NON-ACS approved option

Fall Year 1		Spring Year 1	
Chem 115[a]	4 hrs	Chem 116[a]	4 hrs
Biol 115	4 hrs	Biol 117	4 hrs
Math 155	4 hrs	Math 156	4 hrs
GEC Elective	3 hrs	English 101	3 hrs
WVU e191	1 hr		
AGBI 199	1 hr		
Total	17 hrs		15 hrs

Fall Year 2		Spring Year 2	
Chem 233/235	4 hrs	Chem 234/236	4 hrs
Biol 219	4 hrs	Biol 310	3 hrs
Physics 101/111	4 hrs	Physics 102/112	4 hrs
Chem 215[a]	4 hrs	GEC Elective	3 hrs
		English 102	3 hrs
Total	16 hrs		17 hrs

Fall Year 3		Spring Year 3	
AGBI 410	3 hrs	Chem 462	3 hrs
AGBI 412	1 hr	Chem 464	1 hrs
Biochem elective	3 hrs	Biochem elective	3 hrs
Gen. Elective	3 hrs	Chem 341/342	4 hrs
Stat 211	3 hrs	GEC Elective	3 hrs
GEC Elective	3 hrs	Biol 313 or 410	3 hrs
Total	16 hrs		17 hrs

Fall Year 4		Spring Year 4	
Biol 4AA[b]	3 hrs	Gen. Electives	3 hrs
Biol 4BB[c]	1 hr	Biochem Elective	4 hrs
GEC Elective	6 hrs	GEC Electives	3 hrs
Biochem Elective	3 hrs	Biochem. Elective	3 hrs
Gen. Electives	3 hrs	AGBI 494	1 hr
Total	16 hrs		14 hrs

Total hours: 128

[a] **Chem 117 and 118 may be substituted for Chemistry 115, Chemistry 116, and Chemistry 215.**

[b] **Advanced Biochemistry (needs a number)**

[c] **Advanced Biochemistry lab (needs a number)**

APPENDIX I: DRAFT BACHELOR OF SCIENCE (B.S.), CURRICULUM IN BIOCHEMISTRY [ACS Option]
INTERCOLLEGIATE UNDERGRADUATE PROGRAM IN BIOCHEMISTRY

Name_____ **Advisor**_____

General Education Curriculum*	**28/29**	
GEC-1 Communication	**6**	
English 101	3	
English 102	3	
GEC-2 Basic Math/ Sci Inquiry	*	
GEC-3 The Past and Its Traditions	3	
GEC-4 Issues Contemp. Soc. (Stat 211)	3	
GEC-5 Artistic Expression	3	
GEC-6 The Individual in Society	3	
(First-Year Experience Class)	1/2	
GEC-7 American Culture	3	
GEC-8 Western Culture	3	
GEC-9 Non-western Culture	3	
Biological & Physical Science	**77**	
Ag. Biochem. 199	1	
Biology 115 (Principles of Biology)	4	
Biology 117 (Intro. Physiol)	4	
Biology 219 (Living Cell)	4	
Biology 310 (Cell Growth or Methods)	3	
Chemistry 115 (Fundamentals I)	4	
Chemistry 116 (Fundamentals II)	4	
Chemistry 215 (Analytical)	4	
Chemistry 233 / 235 (Organic I)	3 / 1	
Chemistry 234 / 236 (Organic II)	3 / 1	
Chemistry 310 (Instrument. Analysis)	3	
Chemistry 341 / 342 (Physical Chem)	3 / 1	
Chemistry 401/403 (Chem Lit/ Sem.)	1 / 1	
Chemistry 422 (Int. Inorg. Chem.)	3	
Chemistry 462/464 (Biochem II)	3 / 1	
Chemistry 497 (Research)	3	
Physics 111 (General Physics I)	4	
Physics 112 (General Physics II)	4	
Mathematics 155 (Calc I)	4	
Mathematics 156 (Calc II)	4	
AGBI 410 / 412 (Intro. Biochem)	3 / 1	

Biochemistry Elective Credits from the following:**	**<u>≥ 9</u>**	
Chemistry area		
CHEM 312 (Environmental Chem)	3	
CHEM 460 (Forensic Chemistry)	3	
CHEM 514 (Mass Spec.Princ & Prac.)	3	
CHEM 516 (Bioanalytical Chem)	3	
CHEM 522 (Biochemical Toxicology)	3	
Animal area		
AGBI 512 / 513 (Nutr. Biochem &lab)	3/1	
AGBI 514 (Anim. Biotechnology)	4	
ANPH 301 (Anim. Physiol)	3	
ANPH 400 (Growth and Lactation)	3	
ANPH 405 (Physiol lab)	2	
ANPH 424 (Repro Physiol)	3	
VETS 302 (Animal Pathology)	4	
VETS 401 (Veterinary Anatomy)	3	
VETS 405 (Parasitology)	3	
BIOL 348 (Neurobiology)	3	
BIOL 436 (General Animal Physiology)	3	
BIOL 441 (Vertebrate Microanatomy)	5	
ENTO 404 (Principles of Ento)	4	
ENTO 412 (Pest management)	4	
HNF 460 (Advanced Nutrition)	3	
HNF 474 (Nutrition in Disease)	3	
Cell and Molecular Biology		
BIOL 312 (Virology) "W"	3	
BIOL 313 (Molec Basis of Cell Growth) or BIOL 410 (Cell and Molec. Biol Methods)	3	
BIOL 315(Developmental Biology)	3	
BIOL 413/414 (Molec. Endo / lab)	3/1	
BIOL 335 (Cell Physiology)	3	
BIOL 432 (Forensic Biology)	4	

Period of Attendance:
Previous College:
Minor:
First post-Graduate position/school:
Revised 02/12 (kpb) Date Of Graduation_____

***GEC 2 not included since completion of degree requirements assures completion of this area**

**** Students will work with their advisor to complete the university's writing and capstone requirements**

Genetics		
BIOL 324/325 (Molec. Genetics/lab)	3/1	
BIOL 411 (Intro to Recombinant DNA)	4	
BIOL 425 (Developmental Genetics)	3	
GEN 371 (Principles of Genetics)	4	
Microbiology area		
AEM 341 (Gen Microbiology with lab)	4	
AEM 401 (Environmental Microbiology)	4	
AEM 408 (Applied Water Microbiology)	3	
AEM 420 (Soil Microbiology)	3	
FDST 445/449 (Food Micro. / lab)	3/1	
Plant		
BIOL 350 (Plant Physiology)	4	
HORT 420 (Plant Propagation)	4	
PPTH 401 (General Plant Pathology)	3	
Other		
AVS 402 (Values & Ethics) "W"	3	
AVS 451 (Current Literature) "W"	3	
AVS/BIOL/CHEM 496 (Thesis) capstone		
AVS/BIOL/CHEM 497 (Res.) capstone		
BIOL 301 (Biometry)	3	
BIOL 424 (Protein Struct & Function)	4	
Free electives	**> 14**	
Total Credit Hours Earned		
Credits Required	**128**	

Proposed BS Biochemistry Curriculum for ACS approved option (2/3/12)

Fall Year 1		Spring Year 1	
Chem 115[a]	4 hrs	Chem 116[a]	4 hrs
Biol 115	4 hrs	Biol 117	4 hrs
Math 155	4 hrs	Math 156	4 hrs
GEC Elective	3 hrs	English 101	3 hrs
WVUe 191	1 hr		
AGBI 199	1 hr		
Total	17 hrs		15 hrs

Fall Year 2		Spring Year 2	
Chem 233/235	4 hrs	Chem 234/236	4 hrs
Biol 219	4 hrs	Biol 310	3 hrs
Physics 111	4 hrs	Physics 112	4 hrs
Chem 215[a]	4 hrs	GEC Elective	3 hrs
		English 102	3 hrs
Total	16 hrs		17 hrs

Fall Year 3		Spring Year 3	
AGBI 410	3 hrs	Chem 462	3 hrs
AGBI 412	1 hr	Chem 464	1 hrs
Biochem elective[c]	3 hrs	Chem 310	3 hrs
Writing course	3 hrs	Chem 341/342	4 hrs
Stat 211	3 hrs	GEC Elective	3 hrs
GEC Elective	3 hrs	Gen. Elective	3 hr
Total	16 hrs		17 hrs

Fall Year 4		Spring Year 4	
Chem 422	3 hrs	Gen. Electives	6 hrs
Chem 497	1 hr	Chem 497	2 hrs
GEC Elective	3 hrs	GEC Electives	3 hrs
Biochem. Elective	3 hrs	Biochem. Elective	3 hrs
Chem 401[b]	1 hr	Chem 403[b]	1 hr
Gen. Electives	4 hrs		
Total	15 hrs		15 hrs

Total hours: 128

[a] **Chem 117 and 118 may be substituted for Chemistry 115, Chemistry 116, and Chemistry 215.**

[b] **The Biochemistry capstone will consist of separate sections of Chem 401 and 403 with a biochemistry orientation.**

[c] **Students could take Biology 313 – Molecular Basis of Cellular Growth, Biology 410 – Cell and Molecular Biology Methods, or another upper level biology class as a biology elective or general elective.**

APPENDIX II Curriculum Matrix showing additions (green) and deletions (purple):

Eberly College

Degree Program Title	Designation	CIP Code	Major Title	Major Code	Area of Emphasis	AoE Code	AoE Comments	Major Comments	Degree Comments
Biology	B.A./B.S.	26.0101	Biology	1436					
Biochemistry	B.S.	26.0202	Biochemistry	14XX				New CIP & Major Code	New Interdisciplinary Program with Davis College
Chemistry	B.A./B.S.	40.0501	Chemistry	1439					
Interdepartmental Studies	B.A.	24.0101	Biochemistry/Biology	1440					
			Biochemistry/Chemistry	1441					
			Biochemistry	1435	Chemistry	A117			
					Molecular Biology	A118			

Davis College

Animal & Nutritional Sciences	B.S./B.S.Agr.	01.0901	Animal & Nutritional Sciences	0724	Animal & Vet Science	F004		Effective, Spring 2007	Effective, Spring 2007
					Pre-Vet Medicine	F005			
					Pre-Health Sciences	F006			
	B.S.		Human Nutrition & Food	0728	Dietetics	F017		Effective, Spring 2007	
			Biochemistry	0717				Remove Major 0717 from 01.0901 CIP	
Biochemistry	B.S.	26.0202	Biochemistry	0717				New CIP	New Interdisciplinary Program with EberlyCollege

Appendix III – Catalog Description
Biochemistry – Intercollegiate Undergraduate Program in Biochemistry*

Matthew E. Wilson, Animal and Nutritional Sciences Interim Director
Richard B. Thomas, Biology Chair
Kung Wang, Chemistry Chair

Degree Offered

Bachelor of Science

Nature or Program

The biochemistry curriculum prepares students for careers requiring a strong background in basic principles of the physical and life sciences. The program is a collaborative effort between the Division of Animal and Nutritional Sciences in the Davis College of Agriculture, Natural Resources and Design and the Departments of Biology and Chemistry in the Eberly College of Arts and Sciences.

Students completing a biochemistry major are prepared for professional employment in the expanding fields of agricultural and environmental sciences, chemical industry, health-related industries and biotechnology-based industries. The curriculum provides students with the interdisciplinary background in biochemistry, biology, chemistry, mathematics, physics and molecular biology necessary as preparation for professional schools of human and veterinary medicine, dentistry, optometry and pharmacy. It also provides strong preparation for graduate study in fields such as animal and plant agriculture, biochemistry, biology, molecular biology, genetics, biotechnology, chemistry, food science, nutrition and physiology. The curriculum is modeled after the American Society of Biochemistry and Molecular Biologists guidelines. The degree requirements for a American Chemical Society certified degree can be met within the framework of the program.

Performance Requirements

To maintain biochemistry major status and to graduate, students must maintain at least a 2.0 overall GPA and a 2.0 cumulative GPA in coursework in biology, chemistry and biochemistry.

Degree Requirements

A total of 128 credit hours are required for graduation. The biochemistry core curriculum includes the following required courses (75 hours): AGBI 199, 410, 412 and 494; MATH 155 (or MATH 153 and 154) and 156; PHYS 101 and 102 or PHYS 111 and 112; BIOL 115, 117, 219, 313 or 410 and an upper level class with laboratory; CHEM 115, 116, 215, 233, 234, 235, 236, 341, 342 and an upper level class with laboratory; STAT 211. Students then work with their advisors to select classes (19-21 credit hours) from among a large number of biochemistry electives that most appropriately fits the students career goals and interests. CHEM 117 and 118 may be substituted for CHEM 115, 116, and 215. A C or better grade in all prerequisite courses for biochemistry, biology and chemistry courses is required; the courses involved are Biol 115, 117 and 219; CHEM 115, 116, 215, 233, 234, 235 and 236; MATH 155 and 156; PHYS 101 or 111 and 102 or 112, AGBI 410/412 and CHEM 462/464. For students seeking a degree certified by the American Chemical Society, a grade of C or better is also required in CHEM 341 and CHEM 401.

Biochemistry Program Honors

The option of graduating with biochemistry program honors if available to students with a 3.5 or higher overall grade point average and the approval of the faculty of the intercollegiate program. Graduation with biochemistry program honors includes a senior thesis based upon an approved research project conducted under the supervision of a faculty mentor. For further information, and to apply for admission, qualified students should consult their advisors.

Ken, I strongly endorse the development of a single integrated undergraduate program in Biochemistry. This is an important and timely development. It not only ensure uniformity and excellence in training students in this discipline but also eliminates the confusion of multiple programs across colleges and departments. I am sure you will an increase in the rate of acceptance of students as well as the quality of the applicants. I am impressed with the rigor of the curriculum and the adherence to the recommendations from the American Society of Biochemists and Molecular Biologists. It is a very well structured program. As always I am happy to help by providing research opportunities for the students and by talking in the first year orientations.

Best wishes,

Lisa

Lisa Salati, Ph.D.
Professor and Vice Chair
Department of Biochemistry - 9142
One Medical Center Drive
WVU Health Sciences Center
Morgantown, WV 26506-9142

304-293-7759

To: Faculty Senate Executive Committee

From: Nicholas Perna, Chair-Elect
Senate Curriculum Committee

Date: 04/04/13

RE: Monthly Alterations Report

Action: Re-name Department. The following departmental re-naming has received administrative approval:

Old: Department of Technology Learning and Culture

New: Department of Learning Sciences and Human Development

Rationale: Previously the department included Social and Cultural Foundations faculty, but SCFD was recently moved to C&I/LS. Child Development and Family Studies joined this department six years ago. This change better reflects current programs and trends in the field.

Action: Re-name Department. The following departmental re-naming has received administrative approval:

Old: Department of Speech Pathology and Audiology

New: Department of Communication Sciences and Disorders

Rationale: The change of name to Department of Communication Sciences and Disorders reflects trends in the field and accreditation standards established by the American Speech-Language-Hearing-Association (ASHA). ASHA has advanced the idea of "two professions, one discipline," to represent both Speech Pathology and Audiology under one professional umbrella.

Action: New Subject Code. The following subject code creation has received administrative approval:

Sub Code	CIP	Action	Rationale	Effect Date
FRNX	430106	Add subject code.	FRNX will serve as the new subject code for Forensic Science and Technology. This is a proposed program that focuses on the application of the physical, biomedical, and social sciences to the analysis and evaluation of physical evidence, human testimony and criminal suspects.	201308
HIED	130406	Change subject code.	The change of subject code for the Higher Education Administration program from EDLS to HIED better identifies the program. Nationally, EDLS reflects leadership programs in K-12 education, whereas, HIED is the accepted descriptor for college and university administration programs.	201401
IMMB	260508	Add subject code.	IMMB will serve as the new subject code for the proposed BS in Immunology and Medical Microbiology.	201308

Action: Alterations (Minor Changes)

Sub Code	Course Number	CIP	Action	Old	New	Rationale	Effect Date
BUSA	202	520301	Change catalog description.	BUSA 202. Survey of Accounting. 3 Hr. Overview of the accounting discipline. Utilization of accounting information for purposes of financial reporting, management control and decision making, and	BUSA 202. Survey of Accounting. 3 Hr. Overview of the accounting discipline. Utilization of accounting information for purposes of financial reporting, management control and decision making, and individual income tax reporting. (Students may not	Change of catalog description to prevent students from taking this course if they have successfully passed ACCT 201. Students have taken ACCT 201 and this course which have very	201305

				individual income tax reporting.	receive credit for ACCT 201 and BUSA 202.)	similar material.	
CCB	702	260911	Change course title, PR, and catalog description.	CCB 702. Cancer Pathology/Therapeutics. 3 Hr. PR: BMS 730 or consent. This course is designed for upper level graduate students. Course will focus on the pathologic basis of cancer diagnosis and treatment together with therapeutic strategies, drug resistance, drug design and clinical trails.	CCB 702. Cancer Pharmacol/Therapeutics. PR: BMS 730, PCOL 761, or consent. This course is designed for upper level graduate students. Course will focus on the pharmacologic, diagnostic and therapeutic basis of cancer care including therapeutic strategies, drug resistance/design and clinical trials.	Change of course title and catalog description more accurately reflect course content.	201401
MIST	351	520201	Remove PR.	MIST 351. Database Management Systems. 3 Hr. PR: BCOR 330. Introduction to database theory, design, implementation, management, and models; development of database applications for management systems.	MIST 351. Database Management Systems. 3 Hr. Introduction to database theory, design, implementation, management, and models; development of database applications for management systems.	Removal of BCOR 330 as PR. Students can take MIST 351 prior to taking BCOR 330. Reflects change of B&E to a four-year college.	201308
MIST	352	520201	Change PR.	MIST 352. Business Application Progrmmng. 3 Hr. PR: BCOR 330. Provides an understanding of fundamental programming concepts required to develop end-user business applications in an object-oriented, event-driven environment. These skills will be utilized in the systems design and development course.	MIST 352. Business Application Progrmmng. 3 Hr. CONC: BCOR 330. Provides an understanding of fundamental programming concepts required to develop end-user business applications in an object-oriented, event-driven environment. These skills will be utilized in the systems design and development course.	Change PR of BCOR 330 to be concurrent enrollment. Students will have more flexibility of scheduling if they are able to take BCOR 330 concurrently with or before MIST 352.	201308

MIST	353	520201	Change PR.	MIST 353. Advanced Information Technolgy. 3 Hr. PR: BCOR 330 and MANG 420. Presents students with a fundamental knowledge of hardware and software technologies, including emerging technologies, focusing on the functionality and management of the technology in a business organization.	MIST 353. Advanced Information Technolgy. 3 Hr. PR: BCOR 330 and MIST 351, CONC: MIST 352. Presents students with a fundamental knowledge of hardware and software technologies, including emerging technologies, focusing on the functionality and management of the technology in a business organization.	Change of PR ensures students will have the necessary background to succeed in the course.	201308
MIST	357	520201	Add PR.	MIST 357. Information Ethics. 3 Hr. This course introduces the student to the field of information ethics, including such topics as privacy, accessibility, censorship, intellectual property, accuracy, virtual reality and artificial intelligence.	MIST 357. Information Ethics. 3 Hr. PR: BCOR 330. This course introduces the student to the field of information ethics, including such topics as privacy, accessibility, censorship, intellectual property, accuracy, virtual reality and artificial intelligence.	Change of PR ensures students will have the necessary background to succeed in the course.	201308
MIST	452	520201	Change PR.	MIST 452. Systems Design/Development. 3 Hr. PR: MIST 351 and MIST 352 and MIST 450. Follows the systems analysis course with the second half of the system development cycle; user interface design, data design, process design, system specifications, use of software development tools, documentation, testing, conversion and maintenance.	MIST 452. Systems Design/Development. 3 Hr. PR: MIST 353 and MIST 450. Follows the systems analysis course with the second half of the system development cycle; user interface design, data design, process design, system specifications, use of software development tools, documentation, testing, conversion and maintenance.	Change of PR ensures students will have the necessary background to succeed in the course.	201308

NSG	276	511601	Change PR.	NSG 276. Intro-Evidence Basd Prac/Rsrch. 3 Hr. PR: NSG 211 and STAT 211. Theory, concepts, and methods of the research process intended to provide a basic understanding that is necessary for the translation of current evidence into nursing practice.	NSG 276. Intro-Evidence Basd Prac/Rsrch. 3 Hr. PR: NSG 211; STAT 201 or STAT 211. Theory, concepts, and methods of the research process intended to provide a basic understanding that is necessary for the translation of current evidence into nursing practice.	Change of PR reflects new STAT 201 course as an option to satisfy PR.	201308
PHAR	751		Change course title.	PHAR 751. Geriatrics and Gerontology. 2 Hr. PR: Second or third year pharmacy students. A review of common pharmacotherapeutic and social issues of importance to older adult patients.	PHAR 751. Geriatrics. 2 Hr. PR: Second or third year pharmacy students. A review of common pharmacotherapeutic and social issues of importance to older adult patients.	Change course title because there is another gerontology course that pharmacy students now take.	201401
SPA	611	510204	Change credit hours.	SPA 611. Advanced Practice/Audiology 1. 2 Hr. PR: Consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with hearing disorders.	SPA 611. Advanced Practice/Audiology 1. 1-2 Hr. PR: Consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with hearing disorders.	Change credit hours to variable to meet accreditation standards and allow students flexibility to receive a variety of experiences on and off campus.	201308
SPA	612	510204	Change credit hours.	SPA 612. Advanced Practice/SLP 2. 3 Hr. PR: SPA 610 or consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with speech language disorders.	SPA 612. Advanced Practice/SLP 2. 1-3 Hr. PR: SPA 610 or consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with speech language disorders.	Change credit hours to variable to meet accreditation standards and allow students flexibility to receive a variety of experiences on and off campus.	201308

SPA	614	510204	Change credit hours.	SPA 614. Advanced Practice/SLP 3. 4 Hr. PR: SPA 612 or consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with speech language disorders.	SPA 614. Advanced Practice/SLP 3. 1-4 Hr. PR: SPA 612 or consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with speech language disorders.	Change credit hours to variable to meet accreditation standards and allow students flexibility to receive a variety of experiences on and off campus.	201308
SPA	616	510204	Change credit hours.	SPA 616. Advanced Practice/SLP 4. 4 Hr. PR: SPA 614 or consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with speech-language disorders.	SPA 616. Advanced Practice/SLP 4. 1-4 Hr. PR: SPA 614 or consent. Supervised clinical practicum that concerns the evaluation and treatment of children and adults with speech-language disorders.	Change credit hours to variable to meet accreditation standards and allow students flexibility to receive a variety of experiences on and off campus.	201308
SPA	636	510204	Change credit hours.	SPA 636. Augmentative/Alternative Comm. 2 Hr. Discussion of augmentative/alternative communication options for persons who are unable to meet their daily needs through natural modes of verbal, manual, or written communication. Demographics, assessment, and treatment of candidates for AAC interventions.	SPA 636. Augmentative/Alternative Comm. 3 Hr. Discussion of augmentative/alternative communication options for persons who are unable to meet their daily needs through natural modes of verbal, manual, or written communication. Demographics, assessment, and treatment of candidates for AAC interventions.	Change of credit hours from 2 to 3 reflects a change in accreditation standards, which required expansion of topics required in this course.	201308

Course Drops

SPA 638. Professional Issues.

Memorandum

Date: April 22, 2013

To: Faculty Senate Executive Committee

From: Ilkin Bilgesu, Chair
General Education Curriculum Oversight Committee

Re: GEC Actions

The General Education Curriculum Oversight Committee met on April 1st and April 15th and recommends the following courses for Faculty Senate approval:

Approved New GEC Course:
WMAN 175, Introduction to Wildlife and Fisheries Resources (Obj. 2C & 4)

Approved New GEC Writing Course:
PHIL 480, Capstone Seminar

GEC Objectives (for information only)

1. Communication (ENGL 101 & 102, or ENGL 103 only; W courses evaluated separately)
2. Basic Math & Scientific Inquiry (Total: 13+ hr, including 1 Lab) [Note 2A = Math & Stats (3+ hr required); 2B = Natural & Physical Sciences (7+ hr required); 2C = Natural Resources & Environment (may be used toward Total)]
3. The Past and Its Traditions (3+ hr)
4. Contemporary Society (UNIV 101 & 3+ hr)
5. Artistic Expression (3+ hr)
6. The Individual in Society (3+ hr)
7. American Culture (3+ hr)
8. Western Culture (3+ hr)
9. Non-Western Culture (3+ hr)

W. Writing (1 course, audit/application requires separate "W" form)

Memorandum

Date: April 22, 2013

To: Faculty Senate Executive Committee

From: Ilkin Bilgesu, Chair
General Education Curriculum Oversight Committee

Re: GEC Audits – For Information Only

The GEC Oversight Committee met on April 1st and April 15th and passed the following courses for GEC Audit:

GEC Successful Audits:

CLAS 232, Greek and Roman Myths (Obj. 3 & 5)
ECON 201, Principles of Microeconomics (Obj. 4 & 8)
ENGL 241, American Literature I (Obj. 5 & 7)
ENGL 262, British Literature II (Obj. 3 & 5)
PHIL 308, Philosophy of Religion (Obj. 4 & 8)
POLS 355, Governments of Latin America (Obj. 4 & 9)

GEC Objectives:
1. Communication (ENGL 101 & 102, or ENGL 103 only; W courses evaluated separately)
2. Basic Math & Scientific Inquiry (Total: 13+ hr, including 1 Lab) [Note 2A = Math & Stats (3+ hr required); 2B = Natural & Physical Sciences (7+ hr required); 2C = Natural Resources & Environment (may be used toward Total)]
3. The Past and Its Traditions (3+ hr)
4. Contemporary Society (UNIV 101 & 3+ hr)
5. Artistic Expression (3+ hr)
6. The Individual in Society (3+ hr)
7. American Culture (3+ hr)
8. Western Culture (3+ hr)
9. Non-Western Culture (3+ hr)
W. Writing (1 course, audit/application requires separate "W" form)

WVU Alternate Work Assignment Procedure

Approved by the Faculty Welfare Committee, 04/10/13
Endorsed by the Faculty Senate Executive Committee, 04/22/13
Accepted by the Provost, 05/01/13

West Virginia University is committed to helping its employees achieve an appropriate work-life balance. The often conflicting demands between, on the one hand, illness of the faculty member or a member of the immediate family; care of an elderly parent; or some other serious but unforeseen circumstance; and, on the other, one's professional responsibilities, is recognized as a challenge. It is the intent of this recommendation to provide consistency throughout the University community in addressing this matter, by granting workload options to address certain personal needs. This procedure is complemented by the Parental Work Assignment Procedure, which addresses matters related to experiencing and recovering from childbirth and caring for and bonding with a newly born child, an adopted child, or a child placed in guardianship.

It is important to note that the work-life balance we seek for all members of the university community is principally found in, and inextricably linked to, the historically cherished and vibrant concept of collegiality: free thinking, hard working, and intellectually keen people existing in the academic environment together in a holistic and cooperative spirit. Collegiality is fundamentally irreplaceable, particularly in the faculty ranks. Successful implementation of this recommendation will always lie squarely upon the shoulders of those members of the faculty, staff, and administration who honor and work within the notions of collegiality.

SCOPE

For purposes of this document, it is recognized that within the university community there are distinct constituency groups which may require specific attention to address the issue at hand. These include full-time faculty with contracts of less than twelve months, who accrue neither medical leave nor annual leave and faculty at the WVU Tech and Potomac State campuses, who have different expectations than faculty on the WVU Morgantown campus. The focus of the present recommendation is to provide Alternate Work Assignments for full-time faculty who do not accrue medical or annual leave (at this time, specifically those faculty who are tenured or tenure-track and term faculty on nine-month contracts). Adoption of the recommendation can provide release from teaching and other responsibilities for such faculty members under the circumstances identified above.

DEFINITIONS

"Work Assignment" is defined as the period of time, normally within the basic contract period, during which an employee's traditional assignment may be changed to accommodate serious unforeseen circumstances without salary modification. Similar to the Parental Work Assignment Procedure (PWAP) already in operation, the Alternate Work Assignment Procedure (AWAP) will often result in a release from or modification of traditional teaching duties. An Alternate Work Assignment, if requested, will be granted upon the occurrence of a situation referenced above.

A faculty member with an Alternate Work Assignment will be expected to complete her/his assignment during the contract period.

DURATION OF AN ALTERNATE WORK ASSIGNMENT

The duration of an Alternate Work Assignment available to faculty members who do not accrue leave may be dependent upon a variety of factors, many of which are referenced below. This document identifies the normal length of the Alternate Work Assignment available to the faculty member upon the occurrence of a serious illness of the faculty member or other qualifying individual, the need to care for an elderly parent, or other serious and unforeseen circumstances in order to support the family needs of the faculty member. It is understood that a faculty member may wish to request an Alternate Work Assignment less than the minimum for which she or he is eligible.

Alternate Work Assignment

Upon request, an Alternate Work Assignment shall be granted in recognition of the occurrence of an event described above. During such part of the contract period, adjustment of one's assignment shall include release from traditional teaching responsibilities:

- Normally, the release from the faculty member's traditional teaching duties will extend for the semester in which the event occurs. In special circumstances, including but not limited to the timing of the event, the semester in which the release is provided might follow the one in which the actual event occurs.

- Situations that require extended release are to be handled in the current collegial manner, by discussion and arrangement with the faculty member's supervisor. The faculty member might also consider the traditional leave of absence without pay and the option of temporarily converting to a part-time assignment at reduced pay.

Expectations

Full-time faculty members who receive an Alternate Work Assignment are normally expected to pursue scholarly work, student advising, research and other professional service, including departmental and University service, as appropriate and in keeping with reasonable expectations for flexibility, for the period in which they were given a release from traditional teaching. Addressing the teaching needs of the department is the responsibility of the department chair or equivalent academic administrator.

The University and its colleges and schools expect that faculty members eligible for an Alternate Work Assignment will routinely use this benefit. Such use shall not adversely affect the faculty member's standing or salary in any manner. A reduction in one's teaching assignment is not meant to be made up at a later date. Likewise, a faculty member is not expected to engage in more research or service than is assigned during the contract period. The funding for the teaching coverage is provided by the college or school.

PROCEDURE

Any Alternate Work Assignment must allow for flexibility in its implementation. Department chairs or the equivalent should be mindful of this when working out individual arrangements and should consult with their deans as appropriate. They must be familiar with the policies and options for faculty requesting an Alternate Work Assignment and need to ensure that this information is provided to all faculty members in the department.

The faculty member should make her or his request for an Alternate Work Assignment as soon as possible after the date of the event.

Arrangements for an Alternate Work Assignment are to be made between a faculty member and her or his unit supervisor and reported simultaneously to the Dean. If the faculty member and the administrative head cannot reach a mutually satisfactory agreement regarding an Alternate Work Assignment, the advice and guidance of the Dean, and subsequently the approval of the Provost, Chancellor or his/her designee should be sought.

The supervisor of the unit involved should consult with members of the unit as soon as possible about coverage of duties during the period of an Alternate Work Assignment if such duties are to be distributed among others in the unit. While an Alternate Work Assignment for faculty is not identical to sabbatical leave, the manner in which coverage of duties is distributed can be drawn from sabbatical leave examples. Creative solutions may be called for in small departments or when a very specialized course needs to be taught.

A faculty member in the tenure track period may apply for an extension of the critical year as described in West Virginia University Board of Governors Policy 51, "Extension of the Tenure Clock." Such an application is not in any way connected to these Alternate Work Assignment guidelines. Further useful information may be found in "Family Friendly Practices for Faculty Members," available at http://provost.wvu.edu/r/download/35947.

SOME GUIDING PRINCIPLES

Each individual situation will be unique, and each department will face specific challenges placed on it by a faculty member's absence; therefore flexibility is needed in order to exercise appropriate professional judgment. A number of guiding principles can expedite the process and assist the faculty member and the department in addressing the conditions of the Alternate Work Assignment. These might include, but are not limited to, the following assumptions:

1. The faculty member will agree to a modified assignment in which she/he continues to help the department with certain duties that are feasible, given the particular needs of the assignment.

2. Department chairs will treat the events covered in this document as they might treat a short-term reassignment for other purposes.

3. Faculty members, when possible, should address likely arrangements for an Alternate Work Assignment well in advance of the assignment, to the extent that they can, in order to arrive at generally accepted practices to help address the assignment.

4. An Alternate Work Assignment should be fair to the faculty member and to the department without undue pressure being placed on either party (e.g., the faculty member should not have to "pay back" the assignment with extra teaching; on the other hand, depending on the circumstances, the faculty member normally should not expect a full semester release without an assignment or other departmental duty of some kind).

RESPONSIBILITY FOR IMPLEMENTATION

The Office of the Provost or the Chancellor of Health Sciences will provide guidance about faculty assignments, including those in which traditional teaching is not present.

RESPONSIBILITY FOR INTERPRETATION

The responsibility for interpretation of this document rests with the Provost or the Chancellor of Health Sciences at West Virginia University.

Provost's Office, May 2013

May XX, 2013

Name
Street Address
City, State, Zip Code

Dear;

West Virginia University (WVU) and other state and public employers are currently required to purchase health and prescription drug coverage through the West Virginia Public Employees Insurance Agency (PEIA). WVU is the 2nd largest employer in the PEIA plan with approximately 6,000 covered employees.

The WVU faculty has grave concerns about the equity, effectiveness, and competitiveness of our benefits program. WVU's questions to PEIA as well as its requests to PEIA to acquire WVU-specific usage data have been continually ignored. Therefore, we implore you to propose legislation that will enable WVU and other state and public employers to fully compare PEIA with private market benefits plans and to then select the plan that best meets individual needs.

In 2011 WVU commissioned an independent Health & Benefits Benchmarking study to compare WVU's benefits program to 16 peer colleges and universities. Results of this study validated our belief that WVU's benefits program through PEIA is not competitive with our peers. Key findings include:

- WVU is 1 of 2 universities in the 16 member peer group to have a salary-based employee health insurance premium structure. WVU is the only university to have deductibles and out-of pocket maximums that increase as the employee's salary increases. WVU is also the only institution where the more an employee pays in premiums, the less benefit he/she receives. See attached fact sheet for more information.
- Due to the salary-based contribution structure, faculty members are paying substantially more than comparable faculty in our peer group.
- Since July 1, 2010, WVU has paid over $4.3 million into the Retiree Health Benefit Trust (RHBT) for more than 1,932 new employees who will not be eligible for subsidized retiree insurance premiums. This money goes to PEIA with no benefit to be received.

It is crucial that WVU has access to its aggregate claims data to better understand employee cost drivers and our unique healthcare needs. This information will allow WVU to more effectively manage healthcare costs by identifying the key factors responsible for medical cost increases and to then create targeted programs that meet our employees' needs. WVU has repeatedly asked for access to its own aggregate data; however, PEIA has refused to provide this critical information. WVU has attempted to obtain this information by filing a Freedom of Information Act (FOIA) request. PEIA's response was that sharing aggregate data would be a violation of the Health Insurance Portability and Accountability Act (HIPAA). This response is inaccurate. Private and public entities are permitted to have access to their own population data as long as the information is in aggregate form and not individually identifiable.

In addition to concerns about competitiveness in faculty recruitment and retention, the structure and design of PEIA's benefits program result in gross inequities that require WVU employees to pay a disproportionate share of PEIA's costs statewide. Many of our employees already have a difficult time paying for medical and prescription care without additional out-of-pocket costs shifting to them from PEIA.

In summary, the WVU faculty has major problems with PEIA as a benefits provider for our institution. These concerns include: (1) no authority related to the benefit design of its employee health insurance and drug plans, (2) no input in the employee premium structure, (3) no ability of our institution to access its own aggregate claims data that would allow WVU to develop and evaluate the cost/benefit of targeted health and wellness programs, and (4) the requirement that WVU pay the RHBT for new employees not eligible for subsidized health insurance premiums, resulting in the loss of millions of dollars.

Thank you for your consideration in addressing this very serious issue on behalf of the more than 6,000 benefits eligible employees enrolled in the PEIA health insurance program at WVU.

Respectfully,

The Faculty Senate
West Virginia University

Attachment

WestVirginiaUniversity.

WVU's Concerns Regarding PEIA

THE FACTS

An Independent Benchmarking Study in 2011 Compared WVU Benefits Offered Through PEIA to 16 Other HEPC Peer Universities

- North Carolina State University – Raleigh
- SUNY at Buffalo
- Texas A&M University
- University of Connecticut
- University of Florida
- University of Georgia
- University of Kentucky
- University of Louisville
- University of Maryland – College Park
- University of Massachusetts – Amherst
- University of Missouri – Columbia
- University of Nevada – Reno
- University of Tennessee
- University of Vermont
- Virginia Commonwealth University
- Virginia Tech

Key Findings from the Benchmarking Study

- Of the 16-member peer group, WVU is one of two universities to have a salary-based employee health insurance premium structure.
- WVU is the only university to have deductibles and out-of-pocket maximums that increase with salary and the only institution where the more an employee pays, the less benefit received.
- WVU is one of only three universities NOT utilizing a large, national health insurance carrier.
- Peers with university-affiliated hospitals and dental schools are able to develop and customize plans for these providers under their health plans, this helps to control costs for the members and creates the potential for increased revenue for the universities. WVU does not have this opportunity currently with PEIA.

WVU's Benefits Are Not Competitive Compared to Our Peers

- Beginning this year, 7/1/2013, some faculty members will now pay over $9,084 annually for premiums, which is up to two to three times more than WVU's peers.
- An illustration of the potential financial burden of health care costs for a faculty member is shown below:
  - **Faculty Member Salary**: $55,000
  - **PEIA Plan Selection**: Plan B - Family
  - **Annual Employee Contribution**: $2,900
  - **Deductible**: $1,500
  - **Out of Pocket Costs**: $4,000
  - **Potential Total Annual Cost to Faculty Member**: **$8,400** (15% of gross salary)
  - Most faculty members, especially those in the lower salary classes, cannot absorb this amount of risk without seriously jeopardizing their financial security. In addition, employer contribution costs (including Retiree Health Benefits Trust Fund contributions) for this coverage would be over $7,700 a year. **The total health expenditure to WVU and the member in this scenario is over $16,000**.

Note: PEIA health insurance coverage is "self-funded," meaning benefits are provided and paid based on actual claims, rather than paid by a health insurance carrier in exchange for negotiated monthly premiums. In order to compare the monthly contributions paid by WVU and its employees to the peer universities, the "premium rate equivalent," a budgeted rate based on estimated claims, administrative fees, and other expenses, was utilized. This premium rate equivalent is provided in the PEIA Shoppers Guide via the COBRA rates charged to members for continuation of coverage after employment ends, less a 2% COBRA administrative rate.

The Structure and Design of PEIA's Benefit Program Results in WVU Employees Likely Paying More Than Their Fair Share of PEIA's Costs

- Despite numerous attempts to obtain WVU's own aggregated claims and utilization data, PEIA has refused to provide complete, up-to-date information. The limited data that have been provided, derived from PEIA's D2 Hawkeye database, indicate that the data WVU is seeking are in fact available, but PEIA continues to deny access to requested reports.
- WVU offers wellness and fitness programs that are likely resulting in healthier employees, yet PEIA provides no incentives or potential cost savings to WVU for providing such programs.

- Approximately 63% of the peer universities offer some aspect of domestic partner coverage either through the university or through state law. WVU employees are not provided this coverage option through PEIA, putting WVU at a disadvantage in recruitment and retention efforts.

Proposed Changes to Faculty Constitution relative to election of representative to Board from extension or health sciences.

Changes are in lines 544, 547, 550, and 551.

Article VII

Representation on the West Virginia University Governing Board

1. Composition

In recognition that governance of higher education institutions is a responsibility shared by faculty, administrators, and trustees, West Virginia code states that the governing board of the University shall include two faculty representatives. Each representative represents the entire faculty of the whole University.

2. Election

a. One governing board member shall be the Faculty Senate Chair serving a term that begins in an odd-numbered year. Election to this position is described in Article IV, Section 4.

b. A second governing board member shall be elected by the entire Faculty Senate, selected from full-time faculty with the rank of instructor or above, drawn from either the extension service or the health sciences.

c. Declared candidates for the governing board member from extension service or health sciences will be introduced at the ~~October~~ ***April*** Faculty Senate meeting in each ~~odd~~ *even* calendar year. Nominations from the floor may be made by any member of the University Assembly at that meeting, or through submission of a nomination to the Faculty Senate Office no later than seven calendar days

prior to the next meeting of the Faculty Senate in ~~November~~ ***May***. At the ~~November~~ ***May*** meeting, the governing board member candidates will be given an opportunity to present a brief statement to the Senate. The Faculty Senate Office will transmit ballots to all Senators immediately following the ~~November~~ ***May*** meeting. Ballots, in order to be counted, must be submitted to the Faculty Senate Office by ~~November 30th~~ ***May31***. The results of the election will be announced at the ~~December~~ ***June*** Senate meeting.