

Office of the Superintendent of Schools  
MONTGOMERY COUNTY PUBLIC SCHOOLS  
Rockville, Maryland

November 8, 2011

MEMORANDUM

To: Members of the Board of Education

From: Joshua P. Starr, Superintendent of Schools

Subject: Approval of Pilot Courses

The purpose of this memorandum is to request approval to develop pilot courses and to designate as active or restricted those courses that have completed the pilot process successfully. Pilot courses are submitted to the Board of Education as required by Board of Education Policy IFA, *Curriculum*, approved February 13, 2001, and its accompanying regulation, IFA-RA, *Curriculum*. The policy requires that initial information regarding proposed curriculum development or significant revisions be presented to the Board of Education for approval. The Office of Curriculum and Instructional Programs (OCIP) continues to implement a process for pilot courses and is proposing five new high school pilot courses. OCIP also recommends four courses to become active, and 17 courses to become restricted to specific high schools. Attached is a summary of proposed pilot courses and the active and restricted pilot courses that have successfully completed the pilot process. Based on recommendations of school staff members, five pilot courses were discontinued in June 2011.

Proposed pilot courses and pilot courses that have successfully completed the pilot process and are recommended to be approved as active or restricted are submitted to the Board of Education for review and approval. These pilot courses are developed by local schools, central services staff members, or external organizations.

Separate from the pilot course process, OCIP continues to review secondary courses offered in Montgomery County Public Schools (MCPS). During the 2011–2012 scheduling season, 39 high school courses were removed from the district's offerings for a variety of reasons, such as low enrollment.

The courses recommended to be piloted reflect the dedication, professionalism, and responsiveness of committed teachers, administrators, and central services staff members to satisfy a wide range of student needs and interests. In many cases, teachers collaborated with colleagues from other MCPS schools and central services staff members. Writers demonstrated careful consideration of course outcomes, rigor, and relevance.

The following resolution is included for your consideration.

WHEREAS, On February 13, 2001, the Montgomery County Board of Education adopted Policy IFA, *Curriculum*, governing all curriculum development and implementation; and

WHEREAS, Montgomery County Public Schools established procedures under Regulation IFA-RA, *Curriculum*, to allow school staff to develop and pilot noncore curriculum courses through the Office of Curriculum and Instructional Programs; and

WHEREAS, Montgomery County Public Schools established procedures under Regulation IFA-RA, *Curriculum*, to allow externally developed curriculum and instructional programs to be used in place of Montgomery County Public Schools curriculum after review and approval, using the process for noncore curriculum development; and

WHEREAS, The proposed courses have met all of the requirements established in the procedures; and

WHEREAS, These proposed courses support and extend high school signature, academy, career and technology, and elective programs; now therefore be it

Resolved, That the Montgomery County Board of Education and the superintendent of schools approve the following courses as pilot courses, active courses, or restricted courses in accordance with the procedures established in Regulation IFA-RA, *Curriculum*.

At the table for today's discussion are Mr. Erick Lang, associate superintendent, Office of Curriculum and Instructional Programs; Ms. Elizabeth Brown, director, Department of Curriculum and Instruction; and Mr. Martin M. Creel, director, Department of Enriched and Innovative Programs.

JPS:smw

Attachment

**PROPOSED ELECTIVE HIGH SCHOOL PILOT COURSES**  
**November 8, 2011**

The following courses are proposed for pilot development and will return for Board approval, if successful.

**Arabic 4**

**Proposed by:** Walt Whitman High School

**Number of credits and course duration:** 1.0 credit (2 semesters)

**Grade level:** 9–12

**Instructional level:** Advanced

**Prerequisite:** Arabic 3

**Purpose/Rationale:** This course is designed for students who wish to expand their knowledge of the Arabic language beyond Arabic Level 3. It will enable students to take a longer course sequence of the language in order to attain a higher level of proficiency. This course will better prepare students who wish to continue their study of Arabic in college.

**Course description:** In this course, students will use the Arabic language to communicate orally and in writing in a culturally appropriate manner about a range of topics related to the Arabic-speaking world. These topics include storytelling and poetry, cultural and ethnic diversity, drama and film, and current scientific and societal issues. Students will read and hear authentic materials. Vocabulary and grammatical structures will be taught within the context of the topics studied. This course is aligned with the National Standards for Foreign Language Learning and the Maryland State Curriculum for World Languages.

**Entomology**

**Proposed by:** Montgomery Blair High School

**Number of credits and course duration:** 0.5 credit (1 semester)

**Grade level:** 11–12

**Instructional level:** Advanced

**Prerequisite:** Advanced Science 4: Biology or Honors Biology

**Purpose/Rationale:** Currently, the magnet program has no electives in zoology. Additionally, there are few courses that deal with whole organisms, their biology, life cycle, and impact on human life and the environment. This single semester elective will provide a more diverse selection of biology electives. Key to the course will be collaboration projects between the Entomology course and other electives offered at Montgomery Blair High School. Entomology and Advanced Placement Chemistry students will work together to monitor the health of various streams by analyzing the invertebrate population within the stream as well as the stream's chemistry. Entomology and Forensics will conduct a joint field study on forensic entomology.

**Course description:** Students will delve into the world of insects to gain understanding and appreciation for the ancient animals and insects. Students will discover how important insects are to the ecosystem and their impact, both beneficial and harmful, on humans. Students will study a variety of topics including arthropod relatives, general insect formation, classification and the impact of insects on agriculture, animal health, human health, ecology, products, and forensics. Students will identify and analyze the roles of insects in ecosystems. Students will investigate the reasons for insect success and the impact of insects on the production of food and

other products. Students will evaluate methods for the management of insect populations for benefit of humans.

### **Logic Math**

**Proposed by:** Montgomery Blair High School

**Number of credits and course duration:** 0.5 credit (1 semester)

**Grade level:** 11–12

**Instructional level:** Advanced

**Prerequisite:** Magnet Analysis 1B or AP BC Calculus B

**Purpose/Rationale:** This course is designed for Grade 11 and 12 students with a strong background in mathematics. Using principles of logic, systems with proof rules will be studied. These systems will be analyzed to see how intuitive, effective, and coherent they are in formalizing deduction. Students will analyze a variety of logical systems and examine their meta-logical properties.

**Course description:** This class will be about logic, the relationship between logic and mathematics, the advantages of formalization, and the limitations of what can be formalized. Students will study a variety of topics including syntax for propositional logic, natural deduction proof systems for propositional logic, historical perspectives, syntax for predicate logic, Peano Arithmetic, and Godel's Incompleteness Theorem.

### **Organic Chemistry**

**Proposed by:** Montgomery Blair High School

**Number of credits and course duration:** 0.5 credit (1 semester)

**Grade level:** 11–12

**Instructional level:** Advanced

**Prerequisite:** Advanced Science 2: Chemistry and Advanced Science 4: Biology or Honors Chemistry and Honors Biology

**Purpose/Rationale:** The goal of this course is to help prepare students for challenging science courses in college. Students will be introduced to organic chemical content and have the opportunity to apply concepts learned in chemistry and biology. This elective will serve as an additional elective for students interested in pursuing a career in chemistry, biology, environmental science, botany, and possible medical fields.

**Course description:** This course introduces the chemistry of organic compounds including saturated and unsaturated hydrocarbons and major functional groups as well as nomenclature, stereochemistry, and spectroscopic data. The focus will be understanding how reactions occur using mechanisms and applying this knowledge to problem solve how complex organic molecules are synthesized. Students will investigate and describe how a reaction occurs and problem solve how to utilize multiple reactions to theoretically synthesize more complex compounds. In this course, molecular models will reinforce concepts and labs will apply this information to the real world. Students will study a variety of topics including bonding, molecular shapes, hybridization, polarity, alkanes and cycloalkanes, acids and bases, and reaction intermediates.

**World Military History****Proposed by:** Watkins Mill High School**Number of credits and course duration:** 0.5 credit (1 semester)**Grade level:** 11–12**Instructional level:** On level**Prerequisite:** None

**Purpose/Rationale:** This course provides students an opportunity to delve deeply into a historical topic that spans culture and time, the history and nature of warfare, and its impacts on society. Although wars are often addressed in other history courses, World Military History will provide a more in-depth and analytic approach to studying war's impact on society. Students will consider lessons of the past as they examine current conflicts and their influence in the world today and how they may shape the future. Students also will learn about military and civilian career opportunities.

**Course description:** World Military History is a study of the cultures, technologies, and strategies of warfare from early civilizations to today. Students will learn how warrior classes reflected the culture around them, impacting those cultures in both positive and negative ways. Students will learn how innovations in warfare were often adapted by civilians and put to new uses. Students will analyze how various military principles, theories, and strategies have been applied in conflicts and evaluate their effectiveness. Students also will explore career opportunities in defense, homeland security, intelligence, and related areas. The course culminates with a focus on contemporary challenges, allowing students to apply what they have learned to current military conflicts and concerns.

**RECOMMENDED COURSES FOR APPROVAL IN HIGH SCHOOLS**

The following courses successfully completed the pilot process after earlier Board of Education approval to pilot and are proposed for final approval.

**Courses Available at All High Schools**

Advanced Design Applications A/B (Course Codes 2808/2809)

Advanced Technological Applications A/B (Course Codes 2810/2811)

Designing Technology Solutions A/B (Course Codes 2812/2813)

Digital Photography (Course Codes 6343/6444)

**Courses Offered Only at Authorized High Schools with Specialized Programs**

Biomedical Innovation A/B (Course Codes 3885/3886)—Wheaton High School

Contemporary Issues in Justice, Law, and Society A/B (Course Codes 5144/5145)—Montgomery Blair, Northwood, Seneca Valley, and Springbrook high schools

Electronic Audio Field Production A/B (Course Codes 5171/5172)—James Hubert Blake, Gaithersburg, John F. Kennedy, Col. Zadok Magruder, Northwood, Paint Branch, Rockville, Seneca Valley, and Sherwood high schools

Foundations of Arts, Humanities, Media, and Communication A/B (Course Codes 5195/5196)—James Hubert Blake, Quince Orchard, and Sherwood high schools

Foundation of Design A/B (Course Codes 2814/2815)—Thomas Edison High School of Technology

IB Arabic 3 A/B (Course Codes 1797/1798)—Bethesda-Chevy Chase, Albert Einstein, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Arabic 4 A/B (Course Codes 1799/1800)—Bethesda-Chevy Chase, Albert Einstein, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Business and Management A/B (Course Codes 4139/4140)—Albert Einstein, Bethesda-Chevy Chase, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Italian 5 A/B (Course Codes 1788/1789)—Albert Einstein, Bethesda-Chevy Chase, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Italian 6 A/B (Course Codes 1790/1791)—Albert Einstein, Bethesda-Chevy Chase, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Italian 7 A/B (Course Codes 1563/1564)—Albert Einstein, Bethesda-Chevy Chase, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Math Standard Level A/B (Course Codes 3454/3455)—Albert Einstein, Bethesda-Chevy Chase, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Philosophy A/B (Course Codes 2237/2238)—Albert Einstein, Bethesda-Chevy Chase, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

IB Social Anthropology A/B (Course Codes 2242/2243)—Albert Einstein, Bethesda-Chevy Chase, John F. Kennedy, Richard Montgomery, Rockville, Seneca Valley, Springbrook, and Watkins Mill high schools

Media Management and Operations A/B (Course Codes 5177/5178) (piloted as Television Station Management/Operations A/B)—James Hubert Blake, Gaithersburg, John F. Kennedy, Col. Zadok Magruder, Northwood, Richard Montgomery, Paint Branch, Rockville, Seneca Valley, and Sherwood high schools

Radio Station Management Operations A/B (Course Codes 5166/5167)—James Hubert Blake, Gaithersburg, John F. Kennedy, Col. Zadok Magruder, Northwood, Paint Branch, Rockville, Seneca Valley, and Sherwood high schools

Teaching as a Profession A/B (Course Codes 4878/4879)—Paint Branch, Sherwood, Springbrook, and Watkins Mill high schools