

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

November 9, 2010

MEMORANDUM

To: Members of the Board of Education  
From: Jerry D. Weast, 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 Policy IFA, *Curriculum*, approved February 13, 2001, and its accompanying Montgomery County Public Schools Regulation, IFA-RA, *Curriculum*. The policy requires that initial information regarding proposed curriculum development or significant revisions be presented to the Board for approval. The Office of Curriculum and Instructional Programs (OCIP) continues to implement a process for reviewing pilot courses and is proposing eight new pilot courses: five externally developed courses and three noncore high school courses. OCIP also recommends two courses to become active, and seven courses to become restricted to specific high schools. Twenty-six courses currently are being piloted. Attached is a summary of proposed pilot courses and the active and restricted pilot courses that have successfully completed the pilot process. These pilot courses are developed by staff members at local schools, central services staff members, or by external organizations. Based on recommendations of school staff members, one pilot course was discontinued in June 2010.

Separate from the pilot course process, OCIP continues to review secondary courses offered in Montgomery County Public Schools (MCPS). During the 2010–2011 scheduling seasons, 12 high school courses were removed from the district’s offerings.

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 members 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 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 J. Lang, associate superintendent, Office of Curriculum and Instructional Programs; Ms. Betsy Brown, director, Department of Curriculum and Instruction; and Mr. Martin M. Creel, director, Department of Enriched and Innovative Programs.

JDW:smw

Attachment

## **PROPOSED EXTERNALLY DEVELOPED PILOT COURSES**

*An externally developed curriculum or program* is developed by an outside organization. Its use in Montgomery County Public Schools (MCPS) may significantly alter, add to, or replace MCPS curriculum and may include Advanced Placement (AP), International Baccalaureate (IB), published programs, curriculum developed by private and/or nonprofit organizations, online courses, or distance learning. The following externally developed courses are proposed for pilot development and will return for Board approval if successful.

### **Advanced Technological Applications A/B**

**School Site:** All high schools

**Proposed by:** Science and Engineering

**Number of Credits and Course Duration:** 1 credit (2 semesters)

**Grade Level:** 10–12

**Instructional Level:** Advanced

**Prerequisites:** Successful completion of the basic technology education credit that is warranted in Foundations of Technology, Introduction to Engineering Design, or Principles of Engineering

**Purpose/Rationale:** This course meets the recently changed standards regarding Advanced Technology Education credits for graduation and is on the list of courses approved by the Maryland State Department of Education that merit the advanced technology education credit according to the Code of Maryland Administrative Regulations.

**Course Description:** This standards-based, technological design course provides students the opportunity to build upon their existing technological literacy through a deeper understanding of four of the eight human-designed world areas identified in national technology education standards. The four learning units are Information and Communication Technologies, Medical Technologies, Agriculture and Related Biotechnologies, and Entertainment and Recreation Technologies. Each unit is nine weeks in length. Students engage in individual and group activities, create ideas, develop innovations, design solutions, fabricate models, and engineer practical design results to a variety of technological problems.

### **Biomedical Innovation A/B**

**School Site:** Wheaton High School

**Proposed by:** Science and Engineering

**Number of Credits and Course Duration:** 1 credit (2 semesters)

**Grade Level:** 11–12

**Instructional Level:** Advanced

**Prerequisites:** Principles of Biomedical Sciences A/B, Human Body Systems A/B, and Medical Interventions A/B

**Purpose/Rationale:** This course is the fourth and final course of the Biomedical Sciences—Project Lead the Way (PLTW) Career Pathway Program that was previously approved by the Montgomery County Board of Education. The Biomedical Sciences—PLTW program provides students with an understanding of the role of the biomedical sciences in the modern world, as well as exposure to and preparation for many careers in the rapidly growing field of biomedical sciences. In this course, students apply their knowledge and skills to answer questions and solve problems related to the biomedical sciences. Students may consult with a mentor from a university, hospital, physician's office, or industry. Students are expected to present the results of their work to an adult audience, which may include representatives from the local healthcare or business community or the school's partnership team.

**Course Description:** In this capstone course, students apply their knowledge and skills to answer questions or to solve problems related to the biomedical sciences. Students design innovative solutions for the health challenges of the 21st century.

### **IB Business and Management A/B**

**Proposed by:** Seneca Valley High School

**Number of Credits and Course Duration:** 1 credit (2 semesters)

**Grade Level:** 11–12

**Instructional Level:** Advanced

**Prerequisite:** None

**Purpose/Rationale:** Business and management is a rigorous and dynamic discipline that examines business decision-making processes and how these decisions impact and are affected by internal and external environments. It is the study of both how individuals and groups interact in an organization and the transformation of resources. Emphasis is placed on strategic decision making and the day-to-day business functions of marketing, production, human resource management, and finance. The course links these topics, promoting a holistic overview of business activity. The IB Business and Management course contributes to the students' development as critical and effective participants in local and world affairs.

**Course Description:** The course develops an understanding of business theory, as well as an ability to apply business principles, practices, and skills. The application of tools and techniques of analysis facilitates an appreciation of the complexity of business. The course helps students understand the implications of business activity in a global market. It gives students an international perspective on business and promotes their appreciation of cultural diversity through the study of international marketing, human resource management, growth and business strategy. Students identify and analyze the forces and circumstances that drive and restrain change in an interdependent and multicultural world.

### **Landscape Design and Management A/B**

**School Sites:** Clarksburg, Damascus, and Sherwood high schools

**Proposed by:** Science and Engineering

**Number of Credits and Course Duration:** 1 credit (2 semesters)

**Grade Level:** 10–12

**Instructional Level:** On level

**Prerequisite:** Foundations of Horticulture A/B

**Purpose/Rationale:** This is the third course in the Horticulture and Landscape Design Career Pathway Program. This pathway prepares students for professional horticulturist certification and postsecondary coursework. Students experience an integrated curriculum that includes earth and environmental science, leadership development, economics, and business management. Upon completion of this pathway, students will be eligible to take the Certified Professional Horticulture exam administered by the Maryland Department of Agriculture.

**Course Description:** Students have the opportunity to prepare and implement landscape designs based on a broad range of settings. Students prepare designs including site analysis, collecting and using various field measurements, preliminary and final plans, and preparing cost estimates. Students apply the principles of design, use drafting tools and techniques, and prepare various types of design views to present finished landscape designs. Students select proper plants and planting techniques, and install hardscapes and softscapes within the landscape design. Students install and maintain lawns, and identify harmful weeds, insects, and diseases. Students maintain a landscape by applying techniques for mulching, watering, pruning, and controlling pests. Finally, students evaluate all aspects of the design process, including costs, and incorporate sound horticultural and business practices required for entry-level employment.

**Plant Production A/B****School Sites:** Clarksburg, Damascus, and Sherwood high schools**Proposed by:** Science and Engineering**Number of Credits and Course Duration:** 1 credit (2 semesters)**Grade Level:** 10–12**Instructional Level:** On- level**Prerequisite:** Foundations of Horticulture A/B**Purpose/Rationale:** This is the second course in the Horticulture and Landscape Design Career Pathway Program. This pathway prepares students for professional horticulturist certification and postsecondary coursework. Students experience an integrated curriculum that includes earth and environmental science, leadership development, economics, and business management. Upon completion of this pathway, students are eligible to take the Certified Professional Horticulture exam administered by the Maryland Department of Agriculture.**Course Description:** Students build on prior knowledge of basic plant science acquired in Foundations of Horticulture. By incorporating market research and product development, students successfully plan, produce, and sell greenhouse and nursery crops. Students expand their knowledge of plant nomenclature and plant needs. Students learn how to monitor and maintain proper growing conditions, and to use Integrated Pest Management (IPM) strategies and environmentally sound practices necessary for producing healthy crops. Students complete a business plan including product production cost, pricing, marketing, display, and sale of plants.**PROPOSED ELECTIVE HIGH SCHOOL PILOT COURSES**

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

**Advanced Statistical Methods A/B****Proposed by:** Bethesda-Chevy Chase High School**Number of Credits and Course Duration:** 1 credit (2 semesters)**Grade Level:** 11–12**Instructional Level:** Advanced**Prerequisite:** None**Purpose/Rationale:** Advanced Statistical Methods (ASM) is a rigorous, open-ended study of statistical methods, designed for students who want to continue their study of statistics after taking the Advanced Placement Statistics course. The course prepares students for college-level economics, psychology, social work, public policy, medicine, biology, and statistics**Course Description:** ASM is a study of intermediate statistical concepts with a focus on communicating statistical processes to others and applying methods learned in the course to understand and interpret data from real community and world sources. Students learn to write in LaTeX, perform statistical tests in Excel, show data in Fathom, and perform data cleaning and full analysis in R, SAS, and STATA.

**Introduction to Forensic Science A/B****Proposed by:** Walt Whitman High School**Number of Credits and Course Duration:** 1 credit (2 semesters)**Grade Level:** 11–12**Instructional Level:** On level**Prerequisite:** None

**Purpose/Rationale:** Introduction to Forensic Science is an interdisciplinary survey course introducing students to the collection and use of scientific evidence in the criminal justice and legal systems. The two-semester course is intended for students in Grades 11 or 12 who have completed Biology A/B and one other science course, and are interested in learning about forensic science.

**Course Description:** Introduction to Forensic Science A includes selected topics in these areas: structure and function of the human body, toxicology, drug and alcohol abuse, serology, terrorist and disaster response, and emergency medical procedures. Introduction to Forensic Science B includes selected topics in these areas: ballistics, DNA analysis, fingerprint interpretation, and explosive incident and arson investigation. Either semester may precede the other. A variety of instructional practices will be used to help students master the content of the course including inquiry in hands-on lab investigations and simulations, direct instruction, group and individual projects, case studies, and multimedia presentations. Students are exposed to analysis involving human remains, glass and soils, trace evidence, firearms and tool marks, documents, and entomological specimens. Cutting-edge biotechnological techniques also are explored. Writing and verbal communication skills are essential tools with which students both analyze and present their findings. With the scientific knowledge, and critical thinking skills acquired through forensic science, students are poised to pursue further studies in biology, chemistry, physics, anatomy, anthropology, law, and medicine.

**Production and Performance A/B****Proposed by:** Richard Montgomery High School**Number of Credits and Course Duration:** 1 credit (2 semesters)**Grade Level:** 9–10**Instructional Level:** On level**Prerequisite:** None

**Purpose/Rationale:** This course prepares students to undertake performance-based productions in theater, film, radio, and television. Students learn practical and artistic performance concepts that must be considered in the production of art forms involving actors, such as auditioning and casting, script analysis, the rehearsal process, composition, and staging. Students gain knowledge about performance techniques, terminology, protocol, and procedures that are specific to working with actors in theater, film, radio, and television. In addition to learning basic performance techniques and script analysis, students experience the process of working and problem solving with actors to achieve desired results in short productions for stage, screen, and radio.

**Course Description:** In this course, as students create theater, film, television or radio productions, they study the important relationship between actor and director. Students learn how to direct and act. Students learn that the position of the actors in the physical space of the scene, the actor's look, and disposition are just as important as the performance. Students develop a clear understanding of the director-actor process and the skill set and vocabulary needed to communicate coherently and effectively with a production's cast.

## **RECOMMENDED COURSE FOR APPROVAL IN HIGH SCHOOLS**

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

### **Course Available at All High Schools**

Ethnic Literature (Course Code 1019)

Musical Theater A/B (Course Code 6904/6905)

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

Aerospace Engineering A/B (Course Code 5721/5722)—Wheaton High School

Anatomy and Physiology for Health Professionals (piloted as Health Science Technology 2) A/B (Course Code 4042/4043)—Paint Branch and John F. Kennedy high schools

Foundations of Horticulture A/B (Course Code 5535/5536)—Clarksburg, Damascus, Gaithersburg, Col. Zadok Magruder, Rockville, Poolesville, Sherwood, Watkins Mill, and Wheaton high schools

Human Body Systems A/B (Course Code 3681/3682)—Wheaton High School

Medical Interventions A/B (Course Code 5375/5376)—Wheaton High School

Radio Production A/B (Course Code 5169/5170)—Paint Branch, Rockville, and Sherwood high schools

Travel Geography for Academy of Hospitality and Tourism B (Course Code 5407)—Sherwood High School and Thomas Edison High School of Technology