

Approved 5/24/07

A. NAME OF DOCKET ITEM

Consideration and approval of new or revised courses and programs.

B. STATEMENT OF ISSUE/PURPOSE

1. Background and Purpose

The following curriculum changes are proposed:

Automotive Technology	Adoption of four new courses at Miramar College	Attachment A
Biology	Adoption of a new course at City College.	Attachment B
Dance	Adoption of a new course at City and Mesa College.	Attachment C
Engineering Technology	Adoption of a new course at City College.	Attachment D
Fashion	Adoption of a new course at Mesa College.	Attachment E
Manufacturing Engineering Technology	Adoption of seven new courses at City College.	Attachment F1-F2
Manufacturing Technology	Adoption of seven course deactivations at City College.	Attachment G1-G2
Real Estate	Adoption of a new course at City College.	Attachment H

2. Cost and Funding

There is no additional cost to the District

C. PROPOSAL

The Board of Trustees hereby approves the action outlined in Part A of this docket exhibit.

Henry T. Ingle, Ph.D.  
Vice Chancellor  
Instructional Services, Planning and Technology

## Automotive Technology

### ACTION

Adoption of four new courses at Miramar College.

Proposed courses at Miramar College:

#### **080A Toyota Manual Transmission & Transaxles 302**

**1 hour lecture, 1 unit  
Grade Only**

*Advisory:* Automotive Technology 53 with a grade of "C" or better, or equivalent. English 51 and English 56 and Mathematics 32, each with a grade of "C" or better, or equivalent or Assessment Skill Levels W5, R5 and M20.

This advanced course familiarizes technicians with Toyota manual transmissions and transaxles.

Topics include clutch assemblies, manual transmissions, manual transaxles, transfer cases, and sequential manual transmissions. Students use factory manuals and receive instruction through lecture and demonstration of the proper application of tools and related components. This course is equivalent to Toyota's course code T302. (FT) Associate Degree Credit only and not Transferable.

#### **080B Toyota Suspension, Steering & Handling 452**

**1 hour lecture, 1 unit  
Grade Only**

*Advisory:* Automotive Technology 53 with a grade of "C" or better, or equivalent. English 51 and English 56 and Mathematics 32, each with a grade of "C" or better, or equivalent or Assessment Skill Levels W5, R5 and M20.

This advanced course familiarizes technicians with Toyota suspension, steering, and handling systems. Students use Toyota factory manuals and receive instruction through lecture and demonstration of the proper application of tools and related components. Topics include tire and wheel service, vehicle dynamics and handling, and advanced diagnostic techniques. This course is equivalent to Toyota's course code T453. (FT) Associate Degree Credit only and not Transferable.

#### **080C Toyota Brake Systems 552**

**1 hour lecture, 1 unit  
Grade Only**

*Advisory:* Automotive Technology 53 with a grade of "C" or better, or equivalent. English 51 and English 56 and Mathematics 32, each with a grade of "C" or better, or equivalent or Assessment Skill Levels W5, R5 and M20.

This advanced course familiarizes technicians with Toyota brake systems. Topics include master cylinders, drum and disc brake systems, brake boosters, parking brake systems, Anti-Lock Braking Systems (ABS), and Traction Control Systems (TRAC). Students use Toyota factory manuals and receive instruction through lecture and demonstration of proper application of tools and related components. This course is equivalent to Toyota's course code T552. (FT) Associate Degree Credit only and not Transferable.

#### **080H Toyota Automatic Transmissions 262**

**2 hours lecture, 2 units**

**Letter Grade or Credit/No Credit Option**

*Advisory:* Automotive Technology 53 with a grade of "C" or better, or equivalent. English 51 and English 56 and Mathematics 32, each with a grade of "C" or better, or equivalent or Assessment Skill Levels W5, R5, and M20.

This advanced course familiarizes technicians with the operation of Toyota automatic transmissions, transaxles, and transfer unit. Students use Toyota Factory manuals, tools, and components. Topics include the torque converters, Simpson Planetary Gear Unit, power flow, automatic transmission fluid, transmission oil pumps, valve body circuits, electrical controls, shift lock systems, transmission checks, adjustments, and diagnosis. This course is equivalent to Toyota's course code T262. (FT) Associate Degree Credit only and not Transferable.

ACTION

Adoption of a new course at City College.

Proposed course at City College:

**265B Preparation for Biotechnology**  
**3 hours lecture, 6 hours lab, 5 units**  
**Grade Only**

*Advisory:* English 51 and English 56 and Mathematic 95, each with a grade of "C" or better, or equivalent or Assessment Skill Levels W5, R5 and M40.

This course is intended as a preparation course for students interested in further studies in biotechnology. The course provides the fundamental knowledge in mathematics, chemistry, biology, and microbiology for additional biotechnology coursework. This course can fulfill the prerequisite requirement for Bio 206. Topics include the fundamental chemical processes common in prokaryotic and eukaryotic biology, chemistry of biomolecules, cellular and molecular biology, gene expression and genetic engineering. The laboratory experience provides basic skills and techniques essential to advanced biotechnology courses. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities

## Dance

### ACTION

Adoption of a new course at City and Mesa College.

Proposed course at City and Mesa College:

#### **145 Ballroom and Social Dance**

**2 - 3 hours lab, 0.50 - 1 unit**

#### **Letter Grade or Credit/No Credit Option**

*Advisory:* English 51 with a grade of "C" or better, or equivalent, or Assessment Skill Level W5.

Ballroom and Social Dance is an introductory course focusing on the fundamentals of partner dance and basic steps in a variety of social and ballroom dance genres. Emphasis is placed on partnering technique, frame, style, and steps. This course is designed for dance and theatre majors as well as students who wish to explore historical dance. This course may be taken four times for credit. Students must demonstrate proficiency in the performance of increasingly complex Latin rhythms, tango variations, swing styles and partnering with each repetition. When this course is offered for three hours a week the additional time is utilized in the practice and perfection of styling, postures, rhythms and variations. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities

ACTION

Adoption of a new course at City College.

Proposed course at City College:

**130 Introduction to Engineering Design**  
**2 hours lecture, 3 hours lab, 3 units**  
**Grade Only**

This course is an introductory study of Engineering Design. Emphasis is placed on providing students with an overall perspective on the design process as well as on the details of product development, including computer-aided design (CAD). Topics include the history of design, current career opportunities, portfolio development, geometric relationships, modeling, dimensioning, production and marketing. This class is designed for students interested in the pursuing an academic or vocational career in engineering technology or electronics, including, but not limited to advanced-level high school students. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities

ACTION

Adoption of a new course at Mesa College.

Proposed course at Mesa College:

**179 Fashion Photo Styling**

**3 hours lecture, 3 units**

**Grade Only**

*Advisory:* English 51 and English 56, each with a grade of "C" or better, or equivalent, or Assessment Skill Levels W5 and R5.

In this course, students develop an understanding of all aspects of commercial photo shoots and the uses of photography in fashion marketing.

Students will train for a career in fashion photo styling and gain hands-on experience with techniques used in various styling specialties. In addition, students integrate digital photography, publishing, and related software with their own projects and portfolio building. This course is designed for students majoring in the fashion field. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities

## Manufacturing Engineering Technology

### ACTION

Adoption of seven new courses at City College.

Proposed courses at City College:

**101A Introduction to Manufacturing I**  
**1 hour lecture, 1 unit**  
**Grade Only**

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Engineering Technology 101 or Engineering Technology 120.

This project-based module is designed for high school and entry college students who might be interested in the field of Manufacturing Engineering Technology (MFET). The module discusses common manufacturing terminologies, current business trends, and design process involved with product and process development. It also provides an overview of the MFET program, job perspectives for graduates, salary ranges and various career options in manufacturing. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

**101B Introduction to Manufacturing II**  
**1 hour lecture, 1.00 unit**  
**Grade Only**

*Prerequisite:* Manufacturing Engineering Technology 101A or Engineering Technology 120, each with a grade of "C" or better, or equivalent.

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Engineering Technology 101.

This project-based module is designed for high school and entry college students who might be interested in the field of Manufacturing Engineering Technology. The module introduces manufacturing principles in a product realization process, automation, quality control and management, and lean manufacturing. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

**101C Introduction to Manufacturing III**  
**1 hour lecture, 1 unit**  
**Grade Only**

*Prerequisite:* Manufacturing Engineering Technology 101B with a grade of "C" or better, or equivalent.

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Engineering Technology 101. This project-based module is designed for high school and entry college students who might be interested in the field of Manufacturing Engineering Technology. The module introduces environmental and safety rules, regulations and practices in manufacturing enterprises. In this module, students also apply previous knowledge and training in manufacturing engineering technology to work in teams, build robots that are capable of performing various challenging tasks and compete at the end of the module. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

**105A Print Reading I**  
**1.5 hours lecture, 1.5 units**  
**Grade Only**

*Advisory:* Mathematics 35 with a grade of "C" or better, or equivalent, or Assessment Skill Level M30.

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Engineering Technology 105 or Engineering Technology 124 or 130.

This project-based module teaches student basic sketching techniques, print layout, views, and fundamentals of working and pictorial drawings. Students also learn drawing and annotation standards for different mechanical parts, the principles of dimensioning and tolerancing and their applications and practices in industrial prints. The module is designed for students who are interested in studying manufacturing. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

## Manufacturing Engineering Technology

### **105B Print Reading II**

**1.5 hours lecture, 1.5 units  
Grade Only**

*Prerequisite:* Manufacturing Engineering Technology 105A or Engineering Technology 124 or 130, each with a grade of "C" or better, or equivalent.

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Engineering Technology 105.

This project-based module teaches student different types of scales, precision measurement instruments, methods for geometric tolerancing. Students also learn to interpret symbols and notes on electrical and electronic diagrams, precision sheet metal drawings and welding specifications. Module includes a final project in which students work in teams to generate a print for a part using different drafting symbols, notes, specifications and standards learned throughout the print reading modules. This module is designed for students who are interested in studying manufacturing. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

### **150A Manufacturing Automation I**

**1 hour lecture, 1.50 hours lab, 1.5 units  
Grade Only**

*Prerequisite:* Manufacturing Engineering Technology 101 or 101C or 120 with a grade of "C" or better, or equivalent.

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Engineering Technology 150 or Engineering Technology 126.

This project-based module introduces students to the principles of manufacturing automation, computer-integrated manufacturing (CIM) which includes process and machine control, programmable logic controllers and robotics. Students also learn different applications of automation to improve quality and productivity in manufacturing industries. This module is designed for students who are interested in modern manufacturing. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

### **150B Manufacturing Automation II**

**1 hour lecture, 1.5 hours lab, 1.5 units  
Grade Only**

*Prerequisite:* Manufacturing Engineering Technology 150A or Engineering Technology 126, with a grade of "C" or better, or equivalent.

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Engineering Technology 150. This project-based module covers additional automation topics and applications in manufacturing industry, including sensors and actuators, part handling and assembly. Students also learn the concepts of group technology, flexible manufacturing systems and their applications. This module is designed for students who like to gain further knowledge and experience in modern manufacturing practices. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.



## Manufacturing Technology

### ACTION

Adoption of seven course deactivations at City College.

Proposed courses at City College:

#### **044 Supervised Tutoring in Manufacturing Technology**

**0 units**

**No Grade/0 Units**

This course is designed to prepare the student to succeed in the corequisite and subsequent subject matter courses. This course may be taken four times with a different corequisite subject matter course. College noncredit course.

#### **102 Print Reading and Symbolology**

**3 hours lecture, 3 units**

**Grade Only**

*Advisory:* English 51 and Mathematics 35, each with a grade of "C" or better, or equivalent, or Assessment Skill Levels W5 and M30.

This course involves the study of the types of symbols and engineering notations used for mechanical, electrical, electronic, hydraulic, and pneumatic drawings. Representative drawings are used to demonstrate concepts and practice in interpreting the symbols and notations. Students view and handle typical parts represented by the symbols. This course is designed for students who are currently working in a manufacturing plant or pursuing a career in engineering technology fields. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

#### **106 Manufacturing Processes**

**3 hours lecture, 3 hours lab, 4 units**

**Grade Only**

*Limitation on Enrollment:* This course is not open to students with previous credit for Manufacturing Technology 265: Physics of Machines and Processes.

This course is a survey of physical and chemical processes used to manufacture products. This course is designed to provide students who plan to pursue a career in automated manufacturing with the skills that will enable the student to test automated manufacturing processes and to encourage the further pursuit of training in physics and chemistry. The course will explore the principles of physics and chemistry that underlie technologies used to manufacture products in industry, such as machine technology, vacuum technology, heat treating technology, hydraulic and pneumatic technology and electro-chemical manufacturing processes. The student will employ formulas and the New Metric (S.I.) (mks) system of measurement to solve problems relating to industrial processes. (FT) Associate Degree Credit only and not Transferable.

#### **115 Properties of Materials for Technicians**

**3 hours lecture, 3 units**

**Grade Only**

*Advisory:* English 42 and English 43 and Mathematics 35, each with a grade of "C" or better, or equivalent, or Assessment Skill Levels W4, R4 and M30.

This course provides instruction on the origin, properties, characteristics and uses of metallic industrial materials. The course emphasizes the processes and tests used with metallic industrial materials during the manufacturing cycle. This course is fundamental for manufacturing technology students and students participating in industrial apprenticeship programs. (FT) Associate Degree Credit only and not Transferable.

**270 Work Experience**

**1 - 4 units 1 hour other  
Grade Only**

*Limitation on Enrollment:* Must obtain an Add Code from Work Experience Coordinator for enrollment.

*Limitation on Enrollment:* To receive credit a student must complete a minimum of seven units during the semester, including work experience. A program of on-the-job learning experiences for students employed in a job related to their major. The combined maximum credit for all work experience courses from all disciplines may not exceed 16 units. Associate Degree Credit only and not Transferable.

**290 Independent Study**

**1 - 3 units, 1 hour other  
Grade Only**

*Limitation on Enrollment:* Must obtain an Add Code from the instructor for enrollment.

For advanced students who wish to pursue special projects associated with Manufacturing Technology. The student meets with the instructor at specific intervals and is expected to do primary research, analyze problems and submit reports. This course may be taken four times with different content for a maximum of six units. (FT) Associate Degree Credit only and not Transferable.

**277D Service Learning -- on Campus**

**1 - 3 units  
Grade Only**

*Advisory:* English 51 and English 56, each with a grade of "C" or better, or equivalent, or Assessment Skill Levels W5 and R5.

*Limitation on Enrollment:* Must obtain an Add Code from the instructor for enrollment.

Students in this course develop and implement service learning projects to help the college's community under the supervision of college faculty and in cooperation with the staff of community organizations and agencies. Projects may include collaboration with college classes, education projects for college students, mentoring and shadowing. Students gain hands-on experience in project planning, development, implementation and evaluation. Students meet weekly to receive support training and development opportunities regarding best practices in Service Learning. This course is intended for students from any discipline who are interested in project development, development of teaching skills, or enhancement of communication and planning skills. Course segments may be taken in any order. The combined credit for all 277D discipline courses may not exceed three units. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.

ACTION

Adoption of a new course at City College.

Proposed course at City College:

**166 Common Interest Development**  
**3 hours lecture, 3 units**  
**Grade Only**

This course is a study of Common Interest Developments (CID) and the management of related Homeowner's Associations (HOA). Emphasis is placed on providing students with up-to-date management procedures and the application of California law where appropriate. This course is designed for students pursuing a career in Real Estate and/or those interested in CIDs. (FT) Associate Degree Credit & transfer to CSU and/or private colleges and universities.