



OFFICE OF THE VICE PRESIDENT OF INSTRUCTION
CURRICULUM AND GENERAL EDUCATION COMMITTEE

Memorandum

TO: Curriculum and General Education Committee
K. Bandy, M. Mayfield, T. Mendoza, J. Rangel-Escobedo, D. Garza, T. Payne, B. Devine, A. Bledsoe, M. Oja, ASO Representative, and PTK Representative

FROM: Dr. Vicki Jacobi, Senate Co-Chairperson
Dr. Leslie Minor, V.P. of Instruction, Co-Chairperson

DATE: November 5, 2024

SUBJECT: Next Meeting's Agenda

The next meeting of the **Curriculum and General Education Committee** will be held on **Friday, November 15th from 1:10 p.m. to 2:30 p.m. in the Library 311**

AGENDA

- I. **PUBLIC COMMENTARY**
- II. **APPROVAL OF MINUTES:** From the October 2024 Curriculum & General Education meeting (Page 4)
- III. **NEW BUSINESS: New Courses**
 - A. **Allied Health/Applied Technologies Division**
 - i. PHED 2001 Advanced Pickleball (Page 7)
 - ii. PHED 2011 Elite Pickleball (Page 12)
 - B. **Math/Science Division**
 - i. MATH 2100S Support for Analytical Geometry and Calculus I (Page 15)
 - ii. MATH 0210S Support for Analytical Geometry and Calculus I (Page 20)
 - iii. MATH 1570S Support for Calculus Readiness (Page 23)
 - iv. MATH 0570S Support for Calculus Readiness (Page 26)
 - v. MATH 1570 Calculus Readiness (Page 29)
- IV. **CONSENT**
 - A. **Math & Science Division – Course Revision**
 - i. MATH 1520 Finite Mathematics (Page 36)
 - ii. MATH 1540 Precalculus Mathematics (Page 43)
 - iii. MATH 1530 Plane Trigonometry (Page 48)
 - iv. MATH 2100 Analytic Geometry and Calculus I (Page 56)
 - B. **Business Arts & Humanities – Course Revision**
 - i. PHIL 1620 Critical Thinking and Composition (Page 63)

C. Distance Learning Approvals

- i. MATH 1530 Plane Trigonometry (Page 70)
- ii. MATH 1570S Support for Calculus Readiness (Page 75)
- iii. MATH 2100S Support for Analytical Geometry and Calculus I (Page 80)

D. Course Inactivation

- i. OSH 2000 Occupational Safety and Health Capstone (Page 85)

V. ACTION ITEMS

- A. Medical Assisting Administration Certification of Achievement (Page 87)
- B. AP & BP 4050 Revision (Page 112)

VI. DISCUSSION ITEMS

- A. Local Degree changes due to Common Course Numbering:
 - AA: Business Admin
 - AS: Court Reporting
 - AA: Kinesiology Sports Management
 - AS: Mathematics
 - Liberal Arts Area of Emphasis:
 - Allied Health
 - Business & Technology
 - Communication
 - Math & Science
 - Natural Science – Life Science
 - Natural Science – Physical Science

VII. NEXT MEETING: December 13th from 1:10-2:30pm in the Cougar Room

VIII. Program Status, please see the table below:

Program	Tech Review Approved	C & GE Approved	Board Approved	Status
*Certificate of Achievement: Administrative Medical Assisting	May 7, 2024	May 19, 2024	June 12, 2024	
*Certificate of Achievement: Clinical Medical Assisting	May 7, 2024	May 19, 2024	June 12, 2024	Submitted
Economics ADT			June 2021	Under Review
History ADT			July 2022	Under Review
Computer Science ADT			January 2023	Under Review
Psychology ADT	March 14, 2024	March 22, 2024	June 12, 2024	Under Review
*Political Science ADT	March 14, 2024	March 22, 2024	June 12, 2024	Under Review
Kinesiology ADT	May 2, 2023	March 22, 2024	May 10, 2023	Under Review

Communication Studies 2.0 ADT				Under Review
Sociology ADT				Under Review

* New Program

VIII. Adjournment



OFFICE OF THE VICE PRESIDENT OF INSTRUCTION
CURRICULUM AND GENERAL EDUCATION COMMITTEE

Minutes of the Curriculum and General Education Committee Meeting October 18, 2024

Present: M. Mayfield, J. Rangel-Escobedo, D. Garza, T. Payne, B. Devine, M. Oja, J. Lopez, V. Jacobi, L. Minor

Absent: K. Bandy, T. Mendoza, A. Bledsoe

Recorder: Danielle Garza

Guests: None.

Minutes

- I. PUBLIC COMMENTARY
No public commentary.
- II. APPROVAL OF MINUTES: From the September 2024 Curriculum & General Education meeting
Approved by consensus.
- III. CONSENT - COURSE REVISIONS
 - A. Allied Health/Applied Technologies
 - i. DNTL 1511 Oral Radiology
 - ii. DNTL 1512 Head and Neck Anatomy
 - iii. DNTL 2130 Periodontics I
 - iv. DNTL 2133 Advanced Clinical Topics
 - v. DNTL 2135 Community Oral Health I
 - vi. DNTL 2242 Ethics, Law, & Practice Management
 - vii. DNTL 2244 Community Oral Health II
 - B. Math & Science Division
 - i. STAT C1000 Introduction to Statistics
 - C. English Language Arts
 - i. ENGL C1000 Academic Reading and Writing
 - ii. ENGL C1000E Academic Reading and Writing
 - D. Business, Arts, and Humanities
 - i. COMM C1000 Introduction to Public Speaking
 - E. Social Science
 - i. POLS C1000 American Government and Politics
 - ii. PSYC C1000 Introduction to Psychology

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F. Course Inactivations:

- i. WTER 1510 Introduction to Water Distribution
- ii. WTER 1610 Introduction to Water Treatments
- iii. WKEX 1014 General Work Experience

After clarification regarding the next steps regarding the CCN templates, the consent items were voted on. The Office of Instruction will amend existing CORs based on the approved template verbiage. On a motion by B. Devine, seconded by J. Rangel-Escobedo, and unanimously carried by all, the consent agenda items were approved.

IV. ACTION ITEMS:

A. Clinical Medical Assisting – Certificate of Achievement

Vicki Jacobi reported that this is clean-up from a previous submission with clarification to the descriptions and units. On a motion from T. Payne, seconded by B. Devine, and unanimously carried by all, the Clinical Medical Assisting- Certificate of Achievement was approved.

V. DISCUSSION ITEMS:

A. AP & BP 4050 Revision

Vicki Jacobi shared the revised AP & BP. This item will be an action item in November.

B. Renumbering Degree Applicable/Non-transferable courses

Vicki Jacobi shared the attached chart with the committee. With Common Course Numbering, our courses that are numbered 1000-1499 need to be renumbered in order to not be confused with transfer level courses that will now be numbered starting at 1000. There will be more discussion regarding what the numbering should look like. Also discussion was had regarding inactivating courses on the list that are no longer offered.

C. Other

Vicki Jacobi reported out that ADTs need to be resubmitted due to Cal-GETC. Vicki told the group to compare the templates that Vicki has sent out to see how they compare to what we currently have. Discussion was also had regarding interest in non-credit courses. There will be a Lunch n Learn on this topic in the near future to get into more detail.

VI. NEXT MEETING: November 15, 2024, 1:10-2:30pm in the Cougar Room

VII. Program Status, please see the table below:

Program	Tech Review Approved	C & GE Approved	Board Approved	State Approved	Revisions
Certificate of Achievement: Administrative Medical Assisting	May 7, 2024	May 19, 2024	June 12, 2024	N/A	N/A
Certificate of Achievement: Clinical Medical Assisting	May 7, 2024	May 19, 2024	June 12, 2024	N/A	N/A
Certificate Of Achievement: Administrative and Clinical Medical Assisting	May 7, 2024	May 19, 2024	June 12, 2024	N/A	N/A
Certificate Of Achievement: Paramedic	May 7, 2024	May 19, 2024	June 12, 2024	N/A	

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Psychology ADT	March 14, 2024	March 22, 2024	June 12, 2024	N/A	Under Review
Political Science ADT	March 14, 2024	March 22, 2024	June 12, 2024	N/A	Under Review
Kinesiology ADT	May 2, 2023	March 22, 2024	May 10, 2023	N/A	Under Review

* New Program

VIII. Adjournment

To: Dr. Leslie Minor Chief Instructional Officer
Dr. Vicki Jacobi, Curriculum Co-Chair

From: Kanoe Bandy

Division: Applied Technologies

Date: 9/17/2024

Re: Advanced and Elite Pickleball

Type of Curriculum Change:

- New Course* Substantial Course Change*
- Nonsubstantial Course Change* Course Inactivation

For Course Changes, why is this course being updated?

- For C-ID
- As part of the 5 year review cycle
- Other (please explain): New activity course

For New Courses, please enter a justification for the request:

Please enter a brief description of the background and rationale for the course. This might include a description of a degree or certificate for which the course is required or the relationship of this course to other courses in the same or other disciplines:

The following activity courses can be added to the degrees and will also attract community members.

Programs Affected/Stand Alone:

Please list all degrees and certificates affected:

AA in Kinesiology ADT, Kinesiology local degree and the Sports Management degree and the Liberal Arts: Health and PE.

 Addition to Taft College General Education:

- Natural Science Social & Behavioral Science English Composition

Humanities Communication & Critical Thinking**Justification for Addition to Taft College General Education:**

Please list the General Education SLOs this course meets:

Click here to enter text.

Prepared by: K. Bandy
Reviewed by: M. Rossi
Reviewed by: V. Maiocco
Date Prepared: September 17, 2024

Physical Education (PHED) 2001 Advanced Pickleball (1 Unit) CSU

Prerequisite: Successful completion of Intermediate Pickleball with a grade of “C” or better

Prerequisite knowledge and skills: Before entering the course, the student should be able to:

- 1. Identify the equipment, rules and etiquette of pickleball.**
- 2. Improve basic fundamental skills.**
- 3. Recognize offensive and defensive strategy**
- 4. Utilize proper footwork and racquet grips**
- 5. Demonstrate basic forehand and backhand strokes**
- 6. Increase levels of fitness and hand-eye coordination.**
- 7. Identify modified placement positions.**
- 8. Analyze court awareness with shot selection and placement.**

Hours and Unit Calculations: 48 lab hours (48 Total Student Learning Hours) 1 Unit

Catalog Description: This course teaches advanced fundamentals of the game of Pickleball. Instruction focuses on offensive and defensive strategies of singles and doubles play. Topics will include advanced skills such as long and short serving, forehand smashes, drop shots, angle play and doubles formations.

Type of Class/Course: Degree Applicable

Additional Required Materials: T shirts, shorts, and sneakers are your best bet for added comfort.

Course Objectives:

By the end of the course, a successful student will be able to:

- 1. Play competitive pickleball and execute fundamental skills at an advanced level.**
- 2. Demonstrate advanced tactics, positioning, and field spacing during competitive play.**
- 3. Use offensive and defensive strategies during competition.**
- 4. Increase levels of fitness and hand-eye coordination.**
- 5. Apply the rules of play.**
- 6. Play pickleball at a 3.0 rated player**
- 7. Identify the mental aspects of advanced competitive pickleball**

Student Learning Outcomes:

- 1. Execute fundamental skills at an advanced level in pickleball.**
- 2. Demonstrate advanced strategies of the game of pickleball.**

Course Scope and Content: Laboratory

Unit I Advanced Techniques and Principles

- A. **Learn to anticipate opponents' shots**
- B. **Control and place serve to gain an advantage**
- C. **Work to move well with a partner**
- D. **Topspin and slice shots**
- E. **Serving with Spins**

Unit II Strategy

- A. **Learn advanced Offensive strategies for singles and doubles and put them into play**
- B. **Learn advanced Defensive Strategies for singles and doubles and put them into play.**

Unit III Mental Aspects of Pickleball

- A. **Practicing the Mental side of the game**

Methods of Instruction

- 1. **Verbal instruction**
- 2. **Demonstrations**
- 3. **Skill repetition**
- 4. **Multimedia**

Methods of Evaluation

- 1. **Skill demonstration**
- 2. **Team Competitions**
- 3. **Demonstration of rules and etiquette of pickleball**
- 4. **Participation and demonstration of game fundamentals**
- 5. **Sportsmanship during competition**

Supplemental Data:

<u>TOP Code:</u>	<u>0835.00 Physical Education</u>
<u>Sam Priority Code:</u>	<u>E: Non-Occupational</u>
<u>Funding Agency:</u>	<u>Y: Not Applicable (funds not used)</u>
<u>Distance Learning:</u>	<u>Not Applicable</u>
<u>Program Status:</u>	<u>Program Applicable</u>

<u>Noncredit Category:</u>	<u>N: Not Applicable, Credit Course</u>
<u>Special Class Status:</u>	<u>N: Course is not a special class</u>
<u>Basic Skills Status:</u>	<u>N: Course is not a basic skills course</u>
<u>Prior to College Level:</u>	<u>N: Not Applicable</u>
<u>Cooperative Work Experience:</u>	<u>N: Is not a part of a cooperative work experience education program</u>
<u>Eligible for Credit by Exam:</u>	<u>No</u>
<u>Eligible for Pass/No Pass:</u>	<u>Yes</u>
<u>Discipline:</u>	<u>Physical Education or Health Ed or Kinesiology</u>

Prepared by: K. Bandy

Reviewed by: M. Rossi

Reviewed by: V. Maiocco

Date Prepared: September 17, 2024

Physical Education (PHED) 2011 Elite Pickleball (1 Unit) CSU

Prerequisite: Successful completion of Advanced Pickleball with a grade of “C” or better

Prerequisite knowledge and skills: Before entering the course, the student should be able to:

- 1. Play competitive pickleball and execute fundamental skills at an advanced level.**
- 2. Demonstrate beginning tactics, positioning, and field spacing during competitive play.**
- 3. Use offensive and defensive strategies during competition.**
- 4. Increase levels of fitness and hand-eye coordination.**
- 5. Apply the rules of play.**
- 6. Identify the mental aspects of advanced competitive pickleball**

Hours and Unit Calculations: 48 lab hours (48 Total Student Learning Hours) 1 Unit

Catalog Description: This course teaches the highest level of fundamentals of the game of Pickleball. Instruction focuses on the highest level of offensive and defensive strategies of singles and doubles play. Topics will include elite skills and partner strategies such as partner movement and communication on the court.

Type of Class/Course: Degree Applicable

Additional Required Materials: T shirts, shorts, and sneakers are your best bet for added comfort.

Course Objectives:

By the end of the course, a successful student will be able to:

- 1. Improve fundamental skills.**
- 2. Utilize offensive and defensive strategies for single and doubles play.**
- 3. Improved consistency, control and game strategies.**
- 4. Know the difference between power shots and soft shots and know when to use them in competition.**
- 5. Utilize court awareness with shot selection and placement.**
- 6. Be able to play competitive pickleball as a 4.0 rated player.**

Student Learning Outcomes:

- 1. Execute fundamental skills at the highest level in pickleball.**
- 2. Demonstrate elite strategies of the game of pickleball for singles and doubles play.**

Course Scope and Content: Laboratory

Unit I Elite Techniques and Principles

- A. **Learn to anticipate opponents shots**
- B. **Control and place serves to gain an advantage**
- C. **Work to move well with a partner**
- D. **Topspin and slice shots**
- E. **Serving with Spins**

Unit II Strategy

- A. **Utilize the highest level of singles strategies during competition.**
- B. **Utilize the highest level of doubles strategies such as always moving with your partner called staying tethered to your partner..**

Unit III Mental Aspects of Pickleball

- A. **Practicing the Mental side of the game during competitions.**

Methods of Instruction

- 1. **Verbal instruction**
- 2. **Demonstrations**
- 3. **Skill repetition**
- 4. **Multimedia**

Methods of Evaluation

- 1. **Skill demonstration**
- 2. **Team Competitions**
- 3. **Demonstration of rules and etiquette of pickleball**
- 4. **Participation and demonstration of game fundamentals**
- 5. **Sportsmanship during competition**

Supplemental Data:

<u>TOP Code:</u>	<u>0835.00 Physical Education</u>
<u>Sam Priority Code:</u>	<u>E: Non-Occupational</u>
<u>Funding Agency:</u>	<u>Y: Not Applicable (funds not used)</u>
<u>Distance Learning:</u>	<u>Not Applicable</u>

<u>Program Status:</u>	<u>Program Applicable</u>
<u>Noncredit Category:</u>	<u>N: Not Applicable, Credit Course</u>
<u>Special Class Status:</u>	<u>N: Course is not a special class</u>
<u>Basic Skills Status:</u>	<u>N: Course is not a basic skills course</u>
<u>Prior to College Level:</u>	<u>N: Not Applicable</u>
<u>Cooperative Work Experience:</u>	<u>N: Is not a part of a cooperative work experience education program</u>
<u>Eligible for Credit by Exam:</u>	<u>No</u>
<u>Eligible for Pass/No Pass:</u>	<u>Yes</u>
<u>Discipline:</u>	<u>Physical Education or Health Ed or Kinesiology</u>

To: Dr. Leslie Minor Chief Instructional Officer
Dr. Vicki Jacobi, Curriculum Co-Chair

From: Mike Mayfield

Division: Math & Science

Date: 9/26/2024

Re: MATH 1570C Support for Calculus Readiness
MATH 2100C Support for Analytical Geometry and Calculus 1

Type of Curriculum Change:

- New Course* Substantial Course Change*
- Nonsubstantial Course Change* Course Inactivation

For Course Changes, why is this course being updated?

- For C-ID
- As part of the 5 year review cycle
- Other (please explain): _____

For New Courses, please enter a justification for the request:

Please enter a brief description of the background and rationale for the course. This might include a description of a degree or certificate for which the course is required or the relationship of this course to other courses in the same or other disciplines:

These corequisite courses are intended to provide additional support for students who are concurrently enrolled in the “parent” Math course. Emphasis will be placed on prerequisite math skills needed to be successful in the “parent” Math course, as well as study skills, appropriate use of technology, and just-in-time review and remediation.

Programs Affected/Stand Alone:

Please list all degrees and certificates affected:

 Addition to Taft College General Education:

Natural Science Social & Behavioral Science English Composition Humanities Mathematical Concepts and Quantitative Reasoning**Justification for Addition to Taft College General Education:**

Please list the General Education SLOs this course meets:

Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.

Mathematics (Math) 2100S Support for Analytical Geometry and Calculus 1 (2 units) CSU

Prerequisite: None

Corequisite: Math 2100 (Analytical Geometry and Calculus 1) must be taken concurrently

Advisory: None

Hours and Unit Calculations:

32 hours lecture. (64 Outside-of-class Hours); (96 Total Student Learning Hours) 2 Unit

Catalog Description: Co-requisite support for Math 2100 Analytical Geometry and Calculus 1. This 2-unit course is intended to provide additional support for students who are concurrently enrolled in Math 2100. Emphasis will be placed on prerequisite math skills embedded in Calculus 1 topics, as well as study skills, appropriate use of technology, and just-in-time review and remediation. Students who earn an A,B, or C will earn credit in this class.

Type of Class/Course: Degree Credit

Texts: This course will utilize the same textbook/access code that is being used with Math 2100.

Additional Required Materials: Calculator or any other technology/materials required in Math 2100.

Course Objectives:

By the end of the course, a successful student will:

- 1. Take limits of functions after learning factoring polynomials, simplifying rational expressions, working with radicals, reading graphs, tables with technology**
- 2. Take derivatives of functions after learning simplifying polynomial and rational expressions, exponent and radical expressions, identifying parts of expressions, writing linear equations, graphs of parent functions**
- 3. Take integrals of functions after learning simplifying polynomial and rational expressions, exponent and radical expressions, identifying parts of expressions, unit circle and trigonometric identities**

Course Level Student Learning Outcome:

- 1. Demonstrate mathematical concepts and skills needed for evaluating limits, determining derivatives, and calculating areas under the curve**
- 2. Develop a successful student plan utilizing TC resources**

Course Scope and Content:

Course Topics

- A. Take Limits of Functions**

- a. Factoring Polynomials
- b. Simplifying Rational Expressions
- c. Working with Radicals
- d. Graph Reading
- e. Using Technology Appropriately
- B. Take Derivatives of Functions
 - a. Simplifying Polynomials
 - b. Identifying Composite Functions
 - c. Simplifying Rational Expressions
 - d. Working with Power and Radical Expressions
 - e. Identifying Parts of Expressions
 - f. Writing Linear Equations
 - g. Graphing basics for Parent Functions
 - h. Using Common Geometric Formulas
 - i. Using the Unit Circle and Trig Functions
- C. Take Integrals of Functions
 - a. Simplifying Polynomials
 - b. Identifying Composite Functions
 - c. Simplifying Rational Expressions
 - d. Working with Power and Radical Expressions
 - e. Identifying Parts of Expressions
 - f. Using the Unit Circle and Trig Identities
 - g. Using Technology Appropriately
- D. Study Skills

Learning Activities Required Outside of Class

The students in the class will spend a minimum of 4 hours per week outside of the regular class time doing the following:

1. Completing assigned reading from the textbook
2. Completing assigned homework problems and study activities
3. Watching instructional videos
4. Watching videos related to growth mindset and study skills
5. Review how to use technology to solve problems
6. Work on course-related topics in math lab/learning center or office hours

Methods of Instruction

1. Lecture and sample problems created or curated by the instructor
2. Videos that demonstrate how to utilize technology to solve select problems
3. Individual work with appropriate technology
4. Student presentations
5. Small group work

Methods of Evaluation

1. Student Presentations
2. Problem-solving assignments or activities

3. Quizzes
4. Project
5. Discussions
6. Written summaries
7. Time spent in Math lab, Learning Center, or using TC tutoring services

Supplemental Data:

<u>T.O.P. Code:</u>	<u>170100: Mathematics, General</u>
<u>Sam Priority Code:</u>	<u>E: Non-Occupational</u>
<u>Funding Agency:</u>	<u>Y: Not Applicable(funds not used)</u>
<u>Distance Learning:</u>	<u>Yes</u>
<u>Program Status:</u>	<u>Stand alone</u>
<u>Noncredit Category:</u>	<u>Y: Not Applicable, Credit Course</u>
<u>Special Class Status:</u>	<u>N: Course is not a special class</u>
<u>Basic Skills Status:</u>	<u>N: Course is not a basic skills course</u>
<u>Prior to College Level:</u>	<u>Y: Not applicable</u>
<u>Cooperative Work Experience:</u>	<u>N: Is not part of a cooperative work experience education program</u>
<u>Eligible for Credit by Exam:</u>	<u>No</u>
<u>Eligible for Pass/No Pass:</u>	<u>C: Pass/No Pass</u>
<u>Discipline:</u>	<u>Mathematics</u>

Prepared by: S. Getty
Reviewed by: D. Mitchell
Reviewed by: N. Cahoon
Date Prepared: 9/6/2024

Mathematics (Math) 0210S Support for Analytical Geometry and Calculus 1 (0 units) CSU

Prerequisite: None

Corequisite: Math 2100 (Analytical Geometry and Calculus 1) must be taken concurrently

Advisory: None

Hours and Unit Calculations:

32 hours lecture. (64 Outside-of-class Hours); (96 Total Student Learning Hours)

Catalog Description: A non-credit co-requisite support course for Math 2100 Analytical Geometry and Calculus 1. This course is intended to provide additional support for students who are concurrently enrolled in Math 2100. Emphasis will be placed on prerequisite math skills embedded in Calculus 1 topics, as well as study skills, appropriate use of technology, and just-in-time review and remediation. Not applicable to associate degree.

Type of Class/Course: Non-credit

Texts: This course will utilize the same textbook/access code that is being used with Math 2100.

Additional Required Materials: Calculator or any other technology/materials required in Math 2100.

Course Objectives:

By the end of the course, a successful student will:

1. Take limits of functions after learning factoring polynomials, simplifying rational expressions, working with radicals, reading graphs, tables with technology
2. Take derivatives of functions after learning simplifying polynomial and rational expressions, exponent and radical expressions, identifying parts of expressions, writing linear equations, graphs of parent functions
3. Take integrals of functions after learning simplifying polynomial and rational expressions, exponent and radical expressions, identifying parts of expressions, unit circle and trigonometric identities

Course Level Student Learning Outcome:

1. Demonstrate mathematical concepts and skills needed for evaluating limits, determining derivatives, and calculating areas under the curve
2. Develop a successful student plan utilizing TC resources

Course Scope and Content:

Course Topics

- A. Take Limits of Functions

- a. Factoring Polynomials
- b. Simplifying Rational Expressions
- c. Working with Radicals
- d. Graph Reading
- e. Using Technology Appropriately
- B. Take Derivatives of Functions
 - a. Simplifying Polynomials
 - b. Identifying Composite Functions
 - c. Simplifying Rational Expressions
 - d. Working with Power and Radical Expressions
 - e. Identifying Parts of Expressions
 - f. Writing Linear Equations
 - g. Graphing basics for Parent Functions
 - h. Using Common Geometric Formulas
 - i. Using the Unit Circle and Trig Functions
- C. Take Integrals of Functions
 - a. Simplifying Polynomials
 - b. Identifying Composite Functions
 - c. Simplifying Rational Expressions
 - d. Working with Power and Radical Expressions
 - e. Identifying Parts of Expressions
 - f. Using the Unit Circle and Trig Identities
 - g. Using Technology Appropriately
- D. Study Skills

Learning Activities Required Outside of Class

The students in the class will spend a minimum of 4 hours per week outside of the regular class time doing the following:

1. Completing assigned reading from the textbook
2. Completing assigned homework problems and study activities
3. Watching instructional videos
4. Watching videos related to growth mindset and study skills
5. Review how to use technology to solve problems
6. Work on course-related topics in math lab/learning center or office hours

Methods of Instruction

1. Lecture and sample problems created or curated by the instructor
2. Videos that demonstrate how to utilize technology to solve select problems
3. Individual work with appropriate technology
4. Student presentations
5. Small group work

Methods of Evaluation

1. Student Presentations
2. Problem-solving assignments or activities

3. Quizzes
4. Project
5. Discussions
6. Written summaries
7. Time spent in Math lab, Learning Center, or using TC tutoring services

Supplemental Data:

<u>T.O.P. Code:</u>	<u>170100: Mathematics, General</u>
<u>Sam Priority Code:</u>	<u>E: Non-Occupational</u>
<u>Funding Agency:</u>	<u>Y: Not Applicable(funds not used)</u>
<u>Distance Learning:</u>	<u>Yes</u>
<u>Program Status:</u>	<u>Stand alone</u>
<u>Noncredit Category:</u>	<u>C Elementary and Secondary Basic Skills</u>
<u>Special Class Status:</u>	<u>N: Course is not a special class</u>
<u>Basic Skills Status:</u>	<u>N: Course is not a basic skills course</u>
<u>Prior to College Level:</u>	<u>Y: Not applicable</u>
<u>Cooperative Work Experience:</u>	<u>N: Is not part of a cooperative work experience education program</u>
<u>Eligible for Credit by Exam:</u>	<u>No</u>
<u>Eligible for Pass/No Pass:</u>	<u>C: Pass/No Pass</u>
<u>Discipline:</u>	<u>Mathematics</u>

Prepared by: M. Martinez
Reviewed by: D. Mitchell
Reviewed by: S. Getty
Reviewed by: J. Reynolds
Date Prepared: 9/6/2024

Mathematics (Math) 1570S Support for Calculus Readiness (2 unit) CSU

Prerequisite: None

Corequisite: Math 1570 Calculus Readiness must be taken concurrently

Advisory: None

Hours and Unit Calculations:

32 hours lecture. (64 Outside-of-class Hours); (96 Total Student Learning Hours) 2 Unit

Catalog Description: Co-requisite support for Math 1570 Calculus Readiness. This 2-unit course is intended to provide additional support for students who are concurrently enrolled in Math 1570.

Emphasis will be placed on prerequisite math skills needed to be successful in Math 1570, as well as study skills, appropriate use of technology, and Just-In-Time review and remediation. Students who earn an A, B, or C will earn credit in this class.

Type of Class/Course: Credit/No Credit

Texts: This course will utilize the same textbook/access code that is being used with Math 1570.

Additional Required Materials: Calculator or any other technology/materials required in Math 1570.

Course Objectives:

By the end of the course, a successful student will:

- 1. Develop strong study skills to become independent, active learners**
- 2. Demonstrate mastery of the mathematical skills necessary to complete the Math 1570 course**
- 3. Utilize technology when appropriate**

Course Level Student Learning Outcomes

- 1. Demonstrate mathematical concepts and skills needed for graphing parent functions and applying the unit circle and angle approaches to trigonometry using radian and degree measure.**
- 2. Develop a successful student plan utilizing TC resources**

Course Scope and Content:

Course Topics

- A. Real Numbers and their Properties**
- B. Solving Equations**
- C. Factoring and Simplifying Polynomials and Rationals**
- D. Exponents & Logarithms**

- E. Systems of inequalities and linear programming**
- F. Functions and Graphs**
- G. Rational and Radical Expressions**
- H. Unit Circle & Trigonometric Identities**
- I. Appropriate Use of Technology**
- J. Study Skills**

Learning Activities Required Outside of Class

The students in the class will spend a minimum of 4 hours per week outside of the regular class time doing the following:

- 1. Completing assigned reading from the textbook**
- 2. Completing assigned homework problems and study activities**
- 3. Watching instructional videos**
- 4. Watching videos related to growth mindset and study skills**
- 5. Review how to use technology to solve problems**
- 6. Work on course-related topics in math lab/learning center or office hours**

Methods of Instruction

- 1. Lecture and sample problems created or curated by the instructor**
- 2. Videos that demonstrate how to utilize technology to solve select problems**
- 3. Individual work with appropriate technology**
- 4. Student presentations**

Methods of Evaluation

- 1. Student Presentations**
- 2. Problem-solving assignments or activities**
- 3. Quizzes**
- 4. Project**
- 5. Discussions**
- 6. Written summaries**
- 7. Time spent in Math lab, Learning Center, or using TC tutoring services**

Supplemental Data:

<u>T.O.P. Code:</u>	<u>170100: Mathematics, General</u>
<u>Sam Priority Code:</u>	<u>E: Non-Occupational</u>
<u>Funding Agency:</u>	<u>Y: Not Applicable(funds not used)</u>
<u>Program Status:</u>	<u>Stand alone</u>

<u>Noncredit Category:</u>	<u>Y: Not Applicable, Credit Course</u>
<u>Special Class Status:</u>	<u>N: Course is not a special class</u>
<u>Basic Skills Status:</u>	<u>N: Course is not a basic skills course</u>
<u>Prior to College Level:</u>	<u>Y: Not applicable</u>
<u>Cooperative Work Experience:</u>	<u>N: Is not part of a cooperative work experience education program</u>
<u>Eligible for Credit by Exam:</u>	<u>No</u>
<u>Eligible for Pass/No Pass:</u>	<u>C: Pass/No Pass</u>
<u>Discipline:</u>	<u>Mathematics</u>

Prepared by: M. Martinez
Reviewed by: D. Mitchell
Reviewed by: S. Getty
Reviewed by: J. Reynolds
Date Prepared: 9/6/2024

Mathematics (Math) 0570S Support for Calculus Readiness (0 unit)

Prerequisite: None

Corequisite: Math 1570 Calculus Readiness must be taken concurrently

Advisory: None

Hours and Unit Calculations:

32 hours lecture. 64 Outside-of-class Hours; (96 Total Student Learning Hours)

Catalog Description: A non-credit co-requisite support for Math 1570 Calculus Readiness. This course is intended to provide additional support for students who are concurrently enrolled in Math 1570.

Emphasis will be placed on prerequisite math skills needed to be successful in Math 1570, as well as study skills, appropriate use of technology, and Just-In-Time review and remediation.

Type of Class/Course: Non-credit

Texts: This course will utilize the same textbook/access code that is being used with Math 1570.

Additional Required Materials: Calculator or any other technology/materials required in Math 1570.

Course Objectives:

By the end of the course, a successful student will:

- 1. Develop strong study skills to become independent, active learners**
- 2. Demonstrate mastery of the mathematical skills necessary to complete the Math 1570 course**
- 3. Utilize technology when appropriate**

Course Level Student Learning Outcomes

- 1. Demonstrate mathematical concepts and skills needed for graphing parent functions and applying the unit circle and angle approaches to trigonometry using radian and degree measure.**
- 2. Develop a successful student plan utilizing TC resources**

Course Scope and Content:

Course Topics

- A. Real Numbers and their Properties**
- B. Solving Equations**
- C. Factoring and Simplifying Polynomials and Rationals**
- D. Exponents & Logarithms**
- E. Systems of inequalities and linear programming**

- F. Functions and Graphs**
- G. Rational and Radical Expressions**
- H. Unit Circle & Trigonometric Identities**
- I. Appropriate Use of Technology**
- J. Study Skills**

Learning Activities Required Outside of Class

The students in the class will spend a minimum of 4 hours per week outside of the regular class time doing the following:

- 1. Completing assigned reading from the textbook**
- 2. Completing assigned homework problems and study activities**
- 3. Watching instructional videos**
- 4. Watching videos related to growth mindset and study skills**
- 5. Review how to use technology to solve problems**
- 6. Work on course-related topics in math lab/learning center or office hours**

Methods of Instruction

- 1. Lecture and sample problems created or curated by the instructor**
- 2. Videos that demonstrate how to utilize technology to solve select problems**
- 3. Individual work with appropriate technology**
- 4. Student presentations**

Methods of Evaluation

- 1. Student Presentations**
- 2. Problem-solving assignments or activities**
- 3. Quizzes**
- 4. Project**
- 5. Discussions**
- 6. Written summaries**
- 7. Time spent in Math lab, Learning Center, or using TC tutoring services**

Supplemental Data:

<u>T.O.P. Code:</u>	<u>170100: Mathematics, General</u>
<u>Sam Priority Code:</u>	<u>E: Non-Occupational</u>
<u>Funding Agency:</u>	<u>Y: Not Applicable(funds not used)</u>
<u>Program Status:</u>	<u>Stand alone</u>

<u>Noncredit Category:</u>	<u>C: Elementary and Secondary Basic Skills</u>
<u>Special Class Status:</u>	<u>N: Course is not a special class</u>
<u>Basic Skills Status:</u>	<u>N: Course is a basic skills course</u>
<u>Prior to College Level:</u>	<u>Y: Not applicable</u>
<u>Cooperative Work Experience:</u>	<u>N: Is not part of a cooperative work experience education program</u>
<u>Eligible for Credit by Exam:</u>	<u>No</u>
<u>Eligible for Pass/No Pass:</u>	<u>C: Pass/No Pass</u>
<u>Discipline:</u>	<u>Mathematics</u>

 Addition to Taft College General Education:

- Natural Science Social & Behavioral Science English Composition
- Humanities Mathematical Concepts and Quantitative Reasoning

Justification for Addition to Taft College General Education:

Please list the General Education SLOs this course meets:

Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.

Mathematics (MATH) 1570 Calculus Readiness (4 Unit) CSU

Prerequisite: Knowledge and skills equivalent to the successful completion of an intermediate algebra course

Corequisite: Students taking this course with a high school GPA of 2.6 or below are required to take the corresponding co-requisite course for this class when registering. The required co-requisite course is Math 1570C.

Prerequisite knowledge/skills: Before entering the course, the student should be able to:

1. identify numbers as belonging to specified sets, and graph discrete and continuous sets of real numbers,
2. perform the basic arithmetic operations with positive and negative real numbers,
3. know and apply the rules of exponents and the order of operations in algebraic calculations,
4. know and apply the properties of addition and multiplication for real numbers and identify their use in practice,
5. solve linear equations and inequalities in one variable,
6. solve and graph the solutions of compound inequalities or absolute value inequalities in one variable, and perform addition, subtraction, multiplication and division of polynomials,
7. factor simple polynomials, with special emphasis on quadratic trinomials and solve related polynomial equations,
8. add, subtract, multiply and divide rational algebraic expressions, and reduce to lowest terms,
9. solve equations involving rational algebraic expressions,
10. simplify radical expressions involving numbers and/or variables,
11. use fractional exponents,
12. perform addition, subtraction, multiplication and division of expression involving radicals and complex numbers and simplify the results,
13. solve equations that involve radicals,
14. solve quadratic equations in one variable by factoring, completing the square and the quadratic formula,
15. solve and graph quadratic inequalities in one variable,
16. graph points in the rectangular coordinate system, and straight lines from ordered pairs obtained from a linear equation,
17. determine the slope of the line between any specified pair of points,
18. know the slope formulas for the equation of a straight line, and be able to determine the equation of a particular straight line from specified input information,
19. solve and graph linear inequalities in two variables,
20. solve linear systems of equations in two or three variables algebraically, and solve those in two dimensions graphically,
21. analyze and solve application problems requiring the use of linear systems of equations in two or three variables,
22. evaluate determinants and use them to solve linear systems of equations,
23. determine whether or not a specified relation is a function, and
24. given a function, compute the value of the function given the value of the independent variable, and be able to construct the inverse of simple functions.

Advisory: Eligibility for English 1500 or 1501 strongly recommended

Total Hours: 64 hours lecture. 128 Outside of class hours. (192 Total Student learning hours)

Catalog Description: Preparation for calculus: polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric functions, and their graphs; analytic geometry, polar coordinates

Type of Class/Course: Degree Credit

Text: Lial, Hornsby., et al. *Precalculus*. 7th ed. Pearson, 2021.

Or any college level text designed for science, technology, engineering and math majors, and supporting the learning objectives of this course.

Additional Instructional Materials: MyMathLab Access code. Graphing calculator

Upon successful completion of the course, students will be able to:

1. **Graph functions and relations in rectangular coordinates and polar coordinates;**
2. **Synthesize results from the graphs and/or equations of functions and relations;**
3. **Apply transformations to the graphs of functions and relations;**
4. **Recognize the relationship between functions and their inverses graphically and algebraically;**
5. **Solve and apply equations including rational, linear, polynomial, exponential, absolute value, radical, and logarithmic, and solve linear, nonlinear, and absolute value inequalities;**
6. **Solve systems of equations and inequalities;**
7. **Apply functions to model real world applications;**
8. **Prove trigonometric identities;**
9. **Identify special triangles and their related angle and side measures;**
10. **Evaluate the trigonometric function of an angle given in degree and radian measure;**
11. **Manipulate and simplify a trigonometric expression;**
12. **Solve trigonometric equations, triangles, and applications;**
13. **Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs;**
14. **Evaluate and graph inverse trigonometric functions;**
15. **Calculate powers and roots of complex numbers using DeMoivre's Theorem and;**
16. **Represent a vector (a quantity with magnitude and direction) in the form $\langle a,b \rangle$ and $ai+bj$**

Course Level Student Learning Outcomes

1. Apply the unit circle and angle approaches to trigonometry using radian and degree measure.

2. Solve exponential and logarithmic equations.

General Education Local Student Learning Outcomes

1. **Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.**

Course Scope and Content:

Unit I Graphs and Functions; Inverse Functions

- A. Identify graphs of polynomial functions.
- B. Identify horizontal and vertical translations.
- C. Identify the effect of the magnitude and sign of leading coefficients on the graph of a polynomial.
- D. Construct and graph piecewise and composite functions.
- E. Identify local minimums and maximums.
- F. Identify when an inverse function will exist then find that inverse.
- G. Calculate a least squares regression line.
- H. Interpret the meaning of Spearman's Correlation Coefficient.

Unit II Rational and Polynomial Functions

- A. Identify graphs of polynomial functions of higher degree.
- B. Find real zeros of polynomial functions.
- C. Identify and perform appropriate algebraic tasks with complex numbers.
- D. Identify asymptotic behavior of rational functions.
- E. Develop and use quadratic models.

Unit III Exponential and Logarithmic Functions

- A. Identify graphs of exponential functions.
- B. Identify graphs of logarithmic functions.
- C. Properly employ the properties of logarithms in problem solving.
- D. Develop, through the use of technology, exponential and logarithmic models.

Unit IV Trigonometric and Inverse Trigonometric Functions

- A. Convert from radian to degrees.
- B. Convert from degrees to radians.
- C. Solve problems using unit circle and right triangle trigonometry
- D. Solve problems involving trigonometric and inverse trigonometric functions.
- E. Graph trigonometric and inverse trigonometric functions.
- F. Apply trigonometric models.

Unit V Trigonometric Identities and Equations

- A. Use fundamental trigonometric identities.
- B. Solve trigonometric equations.

Unit VI Systems of Linear Equations

- A. Solve systems of two equations with two unknown quantities algebraically.
- B. Solve systems of three equations with three unknown quantities algebraically.
- C. Solve multivariable systems of equations using matrices.
- D. Calculate the inverse of a square matrix.
- E. Solve application problems using matrices.

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 8 hours per week outside of the regular class time doing the

following:

- 1. Studying,**
- 2. Answering questions,**
- 3. Skill practice,**
- 4. Completing required reading, and**
- 5. Problem solving activity or exercise.**

Methods of Instruction:

- 1. Lecture-demonstrations and sample problems solved by the instructor.**

Methods of Evaluation:

- 1. Computational or non-computational problem-solving demonstrations, including:**
 - a. exams,**
 - b. homework problems, and**
 - c. quizzes.**

Supplemental Data:

<u>TOP Code:</u>	<u>170100: Mathematics, General</u>
<u>SAM Priority Code:</u>	<u>E: Non-Occupational</u>
<u>Funding Agency:</u>	<u>Y: Not Applicable(funds not used)</u>
<u>Program Status:</u>	<u>1: Program Applicable</u>
<u>Noncredit Category:</u>	<u>Y: Not Applicable, Credit Course</u>
<u>Special Class Status:</u>	<u>N: Course is not a special class</u>
<u>Basic Skills Status:</u>	<u>N: Course is not a basic skills course</u>
<u>Prior to College Level:</u>	<u>Y: Not applicable</u>
<u>Cooperative Work Experience:</u>	<u>N: Is not part of a cooperative work experience education program</u>
<u>Eligible for Credit by Exam:</u>	<u>E: Credit By Exam</u>

<u>Eligible for Pass/No Pass:</u>	<u>C: Pass/No Pass</u>
<u>Taft College General Education:</u>	<u>LCAT: Local GE Mathematical Concepts and Quantitative Reasoning</u>
<u>Discipline</u>	<u>Mathematics</u>

Natural Science Social & Behavioral Science English Composition Humanities Mathematical Concepts and Quantitative Reasoning**Justification for Addition to Taft College General Education:**

Please list the General Education SLOs this course meets:

Reviewed by: S. Getty

Reviewed by: D. Mitchell

Reviewed by: R. Payne

Reviewed by: Mariza Martinez

Date Reviewed: Fall 2024

Text Update: ~~Spring 2023~~ Summer 2024

C & GE Approved: ~~May 11, 2023~~

Board Approved: ~~June 14, 2023~~

Semester effective:

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Mathematics (MATH) 1520 Finite Mathematics (3 Units) CSU: UC
[formerly Mathematics 11]

Corequisite: Students taking this course with a high school GPA of 2.6 or below are required to take the corresponding co-requisite course for this class when registering. The required course co-requisite course is 1520C.

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Prerequisite: -Successful completion in Mathematics 1060 or the knowledge and skills equivalent to the successful completion of an intermediate algebra course.

Prerequisite knowledge/skills: Before entering the course a student should be able to:

1. identify numbers as belonging to specified sets, and graph discrete and continuous sets of real numbers,
2. perform the basic arithmetic operations with positive and negative real numbers, plus raising to powers,
3. know and apply the rules of exponents and the order of operations in algebraic calculations,
4. know and apply the properties of addition and multiplication for real numbers and identify their use in practice,
5. solve linear equations and inequalities in one variable, and analyze and solve applications leading to such equations or inequalities,
6. solve and graph the solutions of compound inequalities or absolute value inequalities in one variable,
7. perform addition, subtraction, multiplication and division of polynomials,
8. factor simple polynomials, with special emphasis on trinomials quadratic in form, and solve related polynomial equations,
9. add, subtract, multiply and divide rational algebraic expressions, and reduce to lowest terms,
10. solve equations involving rational algebraic expressions, and analyze and solve word problems leading to such equations,
11. simplify radical expressions involving numbers and/or variables,
12. use fractional exponents,
13. perform addition, subtraction, multiplication and division of expression involving radicals and complex numbers and simplify the results, including rationalization of denominators,
14. solve equations that involve radicals,
15. solve quadratic equations in one variable, and equations quadratic in form, by factoring, completing the square, and the quadratic formula, analyze and solve application problems requiring the use of quadratic equations,
17. solve and graph quadratic inequalities in one variable,
18. graph points in the rectangular coordinate system, and straight lines from ordered pairs obtained from its equation,



19. determine the slope of the line between any specified pair of points,
20. know the slope forms of the equation of a straight line, and be able to determine the equation of a particular straight line from specified input information,
21. solve and graph linear inequalities in two variables,
22. solve linear systems of equations in two or three variables algebraically, and solve those in two dimensions graphically,
23. analyze and solve application problems requiring the use of linear systems of equations in two or three variables,
24. evaluate determinants and use them to solve linear systems of equations,
25. determine whether or not a specified relation is a function,
26. for a function, compute the value of the function given the value of the independent variable, and be able to construct the inverse of simple functions in numeric or algebraic terms,
27. identify the quadratic equation representing a specific conic section, and be able to draw the graph of a conic section by analyzing its equation, or to write the equation of a specified conic section,
28. solve nonlinear systems of equation involving the intersection of two conic sections or a conic section and a straight line,
29. compute and graph specified exponential and logarithmic functions,
30. know the properties of logarithms (product, quotient, power and change of base rules) and be able to use them in practical numerical computations using a table of common logarithms or a calculator, and
31. solve simple exponential and logarithmic equations.

Advisory: Eligibility for English ~~1000 and Reading 1005~~ 1500 or 1501 strongly recommended

Hours and Units Calculations:

48 hours lecture. 96 Outside-of-class Hours (144 Total Student Learning Hours) 3 Units

Catalog Description: Linear functions, systems of linear equations and inequalities, matrices, linear programming, mathematics of finance, sets and Venn diagrams, combinatorial techniques and an introduction to probability. This course has applications in business, economics and social sciences. C-ID MATH 130.

Type of Class/Course: Degree Credit

Text: Lial, Margaret L., et al. *Finite Mathematics with Applications In the Management, Natural, and Social Sciences*. ~~12th 13th~~ ed. Pearson, ~~2018~~ 2024.

Additional Required Materials: My Math Lab, Graphing Calculator

Course Objectives:

By the end of the course, a successful student will be able to:

1. Apply linear and exponential graphs and functions;
2. Write a system of linear equations to solve applied problems;
3. Solve a system of linear equations using Gauss-Jordan elimination and interpret the result;
4. Find the inverse of a square matrix and use the inverse to solve a system of linear equations;
5. Solve linear programming problems in at least three variables;
6. Find unions, intersections and complements of sets and use Venn diagrams to solve problems;
7. Apply basic combinatorial principles to enumeration problems;
8. Determine the probability of a specified event;
9. Find the conditional probability of an event; and

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10. Solve applied problems in finance including simple and compound interest, future and present value, annuities, sinking funds, and amortization.

Student Learning Outcomes

SLO 1 - Solve business / financial problems by the use of matrices.

SLO 2 - Formulate and solve linear programming problems via the Simplex Method.

General Education Local SLO

1. Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.

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Course Scope and Content:

Unit I Graphs and Functions

- A. Graphs
- B. Equations of Lines
- C. Linear Models
- D. Functions
- E. Graphs of Functions
- F. Applications of Linear Functions (example: cost, revenue and profit, supply and demand)

Unit II Exponential and Logarithmic Functions

- A. Exponential Functions
- B. Applications of Exponential Functions
- C. Logarithmic Functions
- D. Logarithmic and Exponential Equations

Unit III Mathematics of Finance

- A. Simple Interest and Discount
- B. Compound Interest
- C. Annuities, Future Value, and Sinking Funds
- D. Annuities, Present Value, and Amortization

Unit IV Systems of Linear Equations and Matrices

- A. Systems of Two Linear Equations in Two Variables
- B. Larger Systems of Linear Equations with Gauss-Jordan and reduced-row echelon form
- C. Applications of Systems of Linear Equations
- D. Basic Matrix Operations
- E. Matrix Products and Inverses
- F. Applications of Matrices

Unit V Linear Programming

- A. Graphing Linear Inequalities in Two Variables
- B. Linear Programming: The Graphical Method
- C. Applications of Linear Programming
- D. The Simplex Method: Maximization
- E. Maximization Applications
- F. The Simplex Method: Duality and Minimization

Unit VI Sets and Probability

- A. Sets and DeMorgan's Laws
- B. Applications of Venn Diagrams and Contingency Tables



- C. Introduction to Probability
- D. Basic Concepts of Probability
- E. Conditional Probability and Independent Events

Unit VII Counting, Probability Distributions, and Further Topics in Probability

- A. Probability Distributions and Expected Value
- B. The Multiplication Principle, Permutations, and Combinations
- C. Applications of Counting
- D. Binomial Probability
- E. Markov Chains
- F. Decision Making

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 6 hours per week outside of the regular class time doing the following:

1. Studying,
2. Completing required reading,
3. Watching required videos, and
4. Problem solving activity or exercise.

Methods of Instruction:

1. Lecture-demonstrations,
2. student participation, and
3. sample problems.

Methods of Evaluation:

1. Computational or non-computational problem-solving demonstrations, including:
 - a. Exams,
 - b. homework problems,
 - c. projects, and
 - d. quizzes

Supplemental Data:

TOP Code:	170100: Mathematics, General
SAM Priority Code:	E: Non-Occupational
Distance Education:	Online; Offline
Funding Agency:	Y: Not Applicable(funds not used)
Program Status:	1: Program Applicable

Noncredit Category:	Y: Not Applicable, Credit Course
Special Class Status:	N: Course is not a special class
Basic Skills Status:	N: Course is not a basic skills course
Prior to College Level:	Y: Not applicable
Cooperative Work Experience:	N: Is not part of a cooperative work experience education program
Eligible for Credit by Exam:	E: Credit By Exam
Eligible for Pass/No Pass:	C: Pass/No Pass
Taft College General Education:	CSB4: CSU Area B4 IG2A: IGETC Area 2A LCAT: Local GE Communication Mathematical Concepts and Quantitative Reasoning
Discipline	Mathematics

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Reviewed by: ~~M. Martinez~~ ~~N. Cahoon~~
Reviewed by: S. Getty
Reviewed by: J. Reynolds
Reviewed by: D. Mitchell
Text update: Spring 2023
Date reviewed: ~~Spring 2023~~ ~~Fall 2024~~
C & GE Approved: ~~May 11, 2023~~
Board Approved: ~~June 14, 2024~~
Semester effective:

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Mathematics (MATH) 1540 Precalculus Mathematics (4 Unit) CSU: UC
[formerly Mathematics 15]

Corequisite: Students taking this course with a high school GPA of 2.6 or below are required to take the corresponding co-requisite course for this class when registering. The required course co-requisite course is Math 1540C.

Prerequisite: Successful completion in Mathematics 1060 or the knowledge and skills equivalent to the successful completion of an intermediate algebra course and Mathematics 1530 (Trigonometry), or the equivalent

Prerequisite knowledge/skills: Before entering the course the student should be able to:

1. identify numbers as belonging to specified sets, and graph discrete and continuous sets of real numbers,
2. perform the basic arithmetic operations with positive and negative real numbers,
3. know and apply the rules of exponents and the order of operations in algebraic calculations,
4. know and apply the properties of addition and multiplication for real numbers and identify their use in practice,
5. solve linear equations and inequalities in one variable,
6. solve and graph the solutions of compound inequalities or absolute value inequalities in one variable, and
7. perform addition, subtraction, multiplication and division of polynomials,
8. factor simple polynomials, with special emphasis on quadratic trinomials and solve related polynomial equations,
9. add, subtract, multiply and divide rational algebraic expressions, and reduce to lowest terms,
10. solve equations involving rational algebraic expressions,
11. simplify radical expressions involving numbers and/or variables,
12. use fractional exponents,
13. perform addition, subtraction, multiplication and division of expression involving radicals and complex numbers and simplify the results,
14. solve equations that involve radicals,
15. solve quadratic equations in one variable by factoring, completing the square and the quadratic formula,
16. solve and graph quadratic inequalities in one variable,
17. graph points in the rectangular coordinate system, and straight lines from ordered pairs obtained from a linear equation,
18. determine the slope of the line between any specified pair of points,
19. know the slope formulas for the equation of a straight line, and be able to determine the equation of a particular straight line from specified input information,
20. solve and graph linear inequalities in two variables,
21. solve linear systems of equations in two or three variables algebraically, and solve those in two dimensions graphically,
22. analyze and solve application problems requiring the use of linear systems of equations in two or three



- variables,
23. evaluate determinants and use them to solve linear systems of equations,
 24. determine whether or not a specified relation is a function,
 25. given a function, compute the value of the function given the value of the independent variable, and be able to construct the inverse of simple functions,

Advisory: Eligibility for English [1500 or 1501](#) ~~4000~~ and [Reading 1005](#) strongly recommended

Hours and Units Calculations:

64 hours lecture. 128 Outside of class hours. (192 Total Student learning hours) 4 Units

Catalog Description: Preparation for calculus: polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric functions and their graphs; analytic geometry, polar coordinates.

Type of Class/Course: Degree Credit

Text: Lial, Margaret L., et al. *Precalculus*. 7th ed. Pearson, 2021.

Additional Required Materials:
MyMathLab, Graphing calculator

Upon successful completion of the course, students will be able to:

1. Graph functions and relations in rectangular coordinates and polar coordinates;
2. Synthesize results from the graphs and/or equations of functions and relations;
3. Apply transformations to the graphs of functions and relations;
4. Recognize the relationship between functions and their inverses graphically and algebraically;
5. Solve and apply equations including rational, linear, polynomial, exponential, absolute value, radical, and logarithmic, and solve linear, nonlinear, and absolute value inequalities;
6. Solve systems of equations and inequalities;
7. Apply functions to model real world applications;
8. Identify special triangles and their related angle and side measures;
9. Evaluate the trigonometric function of an angle given in degree and radian measure;
10. Manipulate and simplify a trigonometric expression;
11. Solve trigonometric equations, triangles, and applications;
12. Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs; and
13. Prove trigonometric identities

Student Learning Outcomes

SLO 1- Solve exponential and logarithmic equations.

SLO 2 - Graph sine and cosine functions and identify the amplitude, period, vertical translation, and phase shift for these functions.

General Education Local SLO

1. Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.



Course Scope and Content:

Unit I

- A. Rectangular Coordinates and Graphs
- B. Circles
- C. Functions
- D. Linear Functions
- E. Equations of Lines and Linear Models
- F. Graphs of Basic Functions
- G. Graphing Techniques
- H. Function Operations and Composition

Unit II

- A. Quadratic Functions and Models
- B. Synthetic Division
- C. Zeros of Polynomial Functions
- D. Polynomial Functions: Graphs, Applications, and Models
- E. Rational Functions: Graphs, Applications, and Models

Unit III

- A. Inverse Functions
- B. Exponential Functions
- C. Logarithmic Functions
- D. Evaluating Logarithms and the Change-of-Base Theorem
- E. Exponential and Logarithmic Equations
- F. Applications and Models of Exponential Growth and Decay

Unit IV

- A. Angles
- B. Trigonometric Functions
- C. Trigonometric Functions Values and Angle Measures
- D. Solutions and Applications of Right Triangles

Unit V

- A. Radian Measure
- B. The Unit Circle and Circular Functions
- C. Graphs of Sine and Cosine Functions
- D. Translations of Graphs of the Sine and Cosine Function
- E. Graphs of Tangent and Cotangent Functions
- F. Graphs of Secant and Cosecant Functions

Unit VI

- A. Polar Equations and Graphs
- B. Parametric Equations, Graphs, and Applications
- C. Systems of Linear Equations
- D. Matrix Solution of Linear Systems
- E. Determinant Solution of Linear Systems
- F. Partial Fractions
- G. Systems of Inequalities and Linear Programming
- H. Properties of Matrices
- I. Matrix Inverses

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 8 hours per week outside of the regular class time doing the following:



1. Studying,
2. Answering questions,
3. Skill practice,
4. Completing required reading, and
5. Problem solving activity or exercise.

Methods of Instruction:

1. Lecture-demonstrations and sample problems solved by the instructor.

Methods of Evaluation:

1. Computational or non-computational problem-solving demonstrations, including:
 - a. exams,
 - b. homework problems, ~~and~~
 - c. quizzes,
 - d. projects, and
 - e. activities

Supplemental Data:

TOP Code:	170100: Mathematics, General
SAM Priority Code:	E: Non-Occupational
Distance Education:	Not Applicable
Funding Agency:	Y: Not Applicable(funds not used)
Program Status:	1: Program Applicable
Noncredit Category:	Y: Not Applicable, Credit Course
Special Class Status:	N: Course is not a special class
Basic Skills Status:	N: Course is not a basic skills course
Prior to College Level:	Y: Not applicable



Cooperative Work Experience:	N: Is not part of a cooperative work experience education program
Eligible for Credit by Exam:	E: Credit By Exam
Eligible for Pass/No Pass:	C: Pass/No Pass
Taft College General Education:	CSB4: CSU Area B4 IG2A: IGETC Area 2A LCAT: Local GE Communication <u>Mathematical Concepts and Quantitative Reasoning</u>
Discipline	Mathematics

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 Humanities Mathematical Concepts and Quantitative Reasoning**Justification for Addition to Taft College General Education:**

Please list the General Education SLOs this course meets:

Reviewed by: ~~Brian Jean N. Cahoon~~
 Reviewed by: ~~Diane Jones M. Martinez~~
 Reviewed by: Joy Reynolds
~~Reviewed by: Greg Golling~~
 Date reviewed: ~~September 14, 2015~~

Fall 2024

C&GE Approved: ~~October 12, 2015~~
 Board Approved: ~~November 11, 2015~~
 Semester Approved: ~~Fall 2016~~
 Text Updated: Fall ~~2017~~2021

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Mathematics (MATH) 1530 Plane Trigonometry (4 units) CSU
 [formerly Mathematics 31]

Students taking this course with a high school GPA of 2.6 or below are required to take the corresponding co-requisite course for this class when registering. The required course co-requisite course is Math 1530C.

Prerequisite: Successful completion of Mathematics 1060 or the equivalent

Prerequisite knowledge/skills: Before entering the course the student should be able to

1. identify numbers as belonging to specified sets, and graph discrete and continuous sets of real numbers,
2. perform the basic arithmetic operations with positive and negative real numbers, plus raising to powers,
3. know and apply the rules of exponents and the order of operations in algebraic calculations,
4. know and apply the properties of addition and multiplication for real numbers and identify their use in practice,
5. solve linear equations and inequalities in one variable, and analyze and solve applications leading to such equations or inequalities,
6. solve and graph the solutions of compound inequalities or absolute value inequalities in one variable,
7. perform addition, subtraction, multiplication and division of polynomials,
8. factor simple polynomials, with special emphasis on trinomials quadratic in form, and solve related polynomial equations,
9. add, subtract, multiply and divide rational algebraic expressions, and reduce to lowest terms,
10. solve equations involving rational algebraic expressions, and analyze and solve word problems leading to such equations,
11. simplify radical expressions involving numbers and/or variables,
12. use fractional exponents,
13. perform addition, subtraction, multiplication and division of expression involving radicals and complex numbers and simplify the results, including rationalization of denominators,
14. solve equations that involve radicals,
15. solve quadratic equations in one variable, and equations quadratic in form, by factoring, completing the square, and the quadratic formula,
16. analyze and solve application problems requiring the use of quadratic equations,
17. solve and graph quadratic inequalities in one variable,
18. graph points in the rectangular coordinate system, and straight lines from ordered pairs obtained

- from its equation,
19. determine the slope of the line between any specified pair of points,
 20. know the slope forms of the equation of a straight line, and be able to determine the equation of a particular straight line from specified input information,
 21. solve and graph linear inequalities in two variables,
 22. solve linear systems of equations in two or three variables algebraically, and solve those in two dimensions graphically,
 23. analyze and solve application problems requiring the use of linear systems of equations in two or three variables,
 24. evaluate determinants and use them to solve linear systems of equations,
 25. determine whether or not a specified relation is a function,
 26. for a function, compute the value of the function given the value of the independent variable, and be able to construct the inverse of simple functions in numeric or algebraic terms,
 27. identify the quadratic equation representing a specific conic section, and be able to draw the graph of a conic section by analyzing its equation, or to write the equation of a specified conic section,
 28. solve nonlinear systems of equation involving the intersection of two conic sections or a conic section and a straight line,
 29. compute and graph specified exponential and logarithmic functions,
 30. know the properties of logarithms (product, quotient, power and change of base rules) and be able to use them in practical numerical computations using a table of common logarithms or a calculator, and
 31. solve simple exponential and logarithmic equations.

Total Hours: 64 hours lecture, **128 Outside-of-class Hours (192 Total Student Learning Hours).**

Catalog Description: This course includes the study of trigonometric functions, their inverses and their graphs, identities and proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, polar coordinates, and introduction to vectors. C-ID: MATH 851

Type of Class/Course: Degree Credit

Text: Lial, Margaret, et al. *Trigonometry*. ~~11th~~ ^{12th} ed. Pearson, ~~2017~~ ²⁰²¹⁻²⁰²⁰.

Additional Instructional Materials: Basic scientific calculator with trig, log, and exponential functions

Course Objectives:

By the end of the course, a successful student will be able to:

1. Identify special triangles and their related angle and side measures;
2. Evaluate the trigonometric function of an angle in degree and radian measure;
3. Manipulate and simplify a trigonometric expression;
4. Solve trigonometric equations, triangles, and applications;
5. Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs;
6. Evaluate and graph inverse trigonometric functions;
7. Prove trigonometric identities;

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8. Convert between polar and rectangular coordinates and equations;
9. Graph polar equations;
10. Calculate powers and roots of complex numbers using DeMoivre's Theorem; and
11. Represent a vector (a quantity with magnitude and direction) in the form $\langle a, b \rangle$ and $ai + bj$.

Student Learning Outcomes

SLO 1- Apply the unit circle and angle approaches to trigonometry using radian and degree measurements.

SLO 2- Use computation, analysis and syntheses to solve trigonometry problems including trigonometric equations and their use in triangle applications.

SLO 3- Demonstrate understanding of inverse trigonometric functions and use computations, analysis, and synthesis to solve problems requiring their applications.

General Education Local SLO

1. Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.

~~General Education Local SLO~~

~~1. Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.~~

Course Scope and Content:

- | | |
|----------|---|
| Unit I | Introduction to Trigonometry <ol style="list-style-type: none"> A. Angle Measure and Special Triangles B. Properties of Triangles; Similar Triangles C. Trigonometry: A View from the Coordinate Plane D. Fundamental Identities and Families of Identities |
| Unit II | Right Triangles & Static Trigonometry <ol style="list-style-type: none"> A. A Right Triangle View of Trigonometry B. Solving Right Triangles C. Applications of Static Trigonometry D. Extending Beyond Acute Angles |
| Unit III | Radian Measure & Dynamic Trigonometry <ol style="list-style-type: none"> A. Angle Measure in Radians B. Arc Lengths, Velocities, and the Area of a Circular Sector C. The Unit Circle |
| Unit IV | Trigonometric Graphs and Models <ol style="list-style-type: none"> A. Graphs of Sine and Cosine Functions |

- B. Graphs of Cosecant, Secant, Tangent and Cotangent Functions
- C. Transformations of Trigonometric Graphs
- D. Trigonometric Applications and Models

Unit V Trigonometric Identities

- A. More on Verifying Identities
- B. The Sum and Difference Identities
- C. The Double Angle and Half Angle Identities
- D. The Product-to-Sum and Sum-to-Product Identities

Unit VI Inverse Functions and Trigonometric Equations

- A. One-to-One and Inverse Functions
- B. Inverse Trigonometric Functions and their Applications
- C. Solving Basic Trigonometric Equations
- D. General Trigonometric Equations and Applications

Unit VII Applications of Trigonometry

- A. Oblique Triangles and the Law of Sines
- B. The Law of Cosines; the Area of a Triangle
- C. Vectors and Vector Diagrams
- D. Vectors Applications and the Dot Product

Unit VIII Trigonometric Connections to Algebra

- A. Complex Numbers
- B. Complex Numbers in Trigonometric Form
- C. Demoivre's Theorem and the nth Roots Theorem

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 8 hours per week outside regular class time doing the following:

1. Studying
2. Skill practice
3. Completing required reading
4. Problem solving activity or exercise

Methods of Instruction:

1. Lecture-demonstrations and sample problems by instructor
2. Class discussions
3. Audiovisual presentations

Methods of Evaluations:

1. Computational or non-computational problem-solving demonstrations, including:
 - a. exams
 - b. homework problems
 - c. quizzes
 - d. projects

Supplemental Data:

TOP Code:	170100: Mathematics, General
SAM Priority Code:	E: Non-Occupational
Funding Agency:	Y: Not Applicable(funds not used)
Program Status:	I: Program Applicable
Noncredit Category:	Y: Not Applicable, Credit Course
Special Class Status:	N: Course is not a special class
Basic Skills Status:	N: Course is not a basic skills course
Prior to College Level:	Y: Not applicable
Cooperative Work Experience:	N: Is not part of a cooperative work experience education program
Eligible for Credit by Exam:	E: Credit By Exam
Eligible for Pass/No Pass:	C: Pass/No Pass

Taft College General Education:	CSB4: CSU Area B4 LCAT: Local GE Communication Mathematical Concepts and Quantitative Reasoning <u>Mathematical Concepts and</u> <u>Quantitative Reasoning</u>
<u>Discipline</u>	<u>Mathematics</u>

Addition to Taft College General Education:

- Natural Science Social & Behavioral Science English Composition
- Humanities Communication & Critical Thinking

Justification for Addition to Taft College General Education:

Please list the General Education SLOs this course meets:

[Click here to enter text.](#)



Golling

Reviewed by: ~~S. Getty~~
Reviewed by: ~~B. Jean~~
Reviewed by: ~~D. Mitchell~~
Reviewed by: ~~D. Jones~~
Reviewed by: ~~J. Reynolds~~

Text Update: Spring 2019
Date reviewed: ~~Fall 2024~~
2016

Mathematics (MATH) 2100 Analytic Geometry and Calculus I (5 Units) CSU:UC
[formerly Mathematics 3A]

Corequisite: Students taking this course with a high school GPA 2.6 or below OR have not passed Trigonometry, Precalculus, or Calculus or the equivalent with a C or better are required to take the corresponding corequisite course for this class when registering. The required corequisite course is Math 2100C.

Prerequisite: Successful completion of Mathematics 1530 and 1540, or Mathematics 1550, or Mathematics 1570 with a 'C' or better or equivalent.

Prerequisite knowledge/skills: Before entering the course, the student should be able to:

1. Graph functions and relations in rectangular coordinates and polar coordinates;
2. Synthesize results from the graphs and/or equations of functions and relations;
3. Apply transformations to the graphs of functions and relations;
4. Recognize the relationship between functions and their inverses graphically and algebraically;
5. Solve and apply equations including rational, linear, polynomial, exponential, absolute value, radical, and logarithmic, and solve linear, nonlinear, and absolute value inequalities;
6. Solve systems of equations and inequalities;
7. Apply functions to model real world applications;
8. Identify special triangles and their related angle and side measures;
9. Evaluate the trigonometric function of an angle given in degree and radian measure;
10. Manipulate and simplify a trigonometric expression;
11. Solve trigonometric equations, triangles, and applications;
12. Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs; and
13. Prove trigonometric identities

Total Hours: 80 hours lecture. 160 Outside of class hours. (240 Total Student Learning Hours) 5 Units

Catalog Description: This course is a beginning course in calculus and analytic geometry including functions, limits and continuity, derivatives, integrals, applications of derivatives and integrals, transcendental functions, and Fundamental Theorem of Calculus. This course is primarily for Science, Technology, Engineering and Math majors, and is taught with a computer component (Maple). C-ID: MATH 211.

Type of Class/Course: Degree Credit



Text: [Briggs, William, L., et al. *Calculus: Early Transcendentals*. 3rd ed. Pearson Addison-Wesley, 2019.](#)

[Briggs, William, L. Cochran and B. Gillett. *Calculus: Single Variable*. 3rd Ed. Pearson Addison-Wesley, 2019.](#)

Additional Instructional Materials: none.

Course Objectives:

By the end of the course, a successful student will be able to:

1. understand the use of functional notation,
2. plot and interpret graphs of functions,
3. differentiate algebraic, trigonometric, exponential, logarithmic and hyperbolic functions,
4. apply derivatives, and
5. find the integrals of basic functions (this topic is continued in Math 3B) and
6. complete items 1-5 above by both hand computations and computer assisted (Maple) Compute the limit of a function at a real number;
7. Determine if a function is continuous at a real number;
8. Find the derivative of a function as a limit;
9. Find the equation of a tangent line to a function;
10. Compute derivatives using differentiation formulas;
11. Use differentiation to solve applications such as related rate problems and optimization problems;
12. Use implicit differentiation;
13. Graph functions using methods of calculus;
14. Evaluate a definite integral as a limit;
15. Evaluate integrals using the Fundamental Theorem of Calculus; and
16. Use the definite integral to find areas and volumes

Course Student Learning Outcomes:

1. [Calculate limits.](#)
2. [Calculate and interpret instantaneous rates of change.](#)
3. [Calculate the area under a curve.](#)

General Education Student Learning Outcomes

1. [Students will apply quantitative information to draw reasonable conclusions to real world situations and possess numerical literacy.](#)

Course Scope and Content:

Unit I Functions & Graphs

- A. Identify graphs of polynomial functions
- B. Identify horizontal and vertical translations
- C. Identify the effect of the magnitude and sign of leading coefficients on the graph of a polynomial
- D. Construct and graph piecewise and composite functions
- E. Identify local minimums and maximums



Unit II Limits & Continuous Functions

- A. Find limits graphically and numerically
- B. Evaluate limits analytically
- C. Identify continuity of functions on open and closed intervals
- D. Determine when functions have infinite limits and interpret the meaning of an infinite limit

Unit III Derivative

- A. Demonstrate an understanding of the derivative as it pertains to the tangent line problem
- B. Identify and appropriately apply basic rules of differentiation as they pertain to rates of change
- C. Identify and appropriately apply the power, constant, product, and quotient rule for first and higher-order derivatives
- D. Differentiation formulas: constants, power rule, product rule, quotient rule and chain rule
- E. Demonstrate a working knowledge of related rates of change
- F. Determine the differentiability of functions
- G. Determine a derivative as a limit

Unit IV Application of Derivatives

- A. Use derivatives to identify and appropriately interpret local extrema
- B. Identify intervals where functions are increasing/decreasing based on derivatives
- C. Identify regions of concavity
- D. Identify asymptotic behavior based on limits
- E. Use derivatives for optimization problems
- F. Apply Newton's Method where appropriate
- G. Utilize differentials as they pertain to calculating maximum error propagation
- H. Use derivatives as a tool to graph functions
- I. Intermediate and Mean Value Theorem

Unit V Definite Integral

- A. Calculate antiderivatives and apply to Indefinite Integration
- B. Calculate area under a curve by Riemann sums and The Fundamental Theorem of Calculus
- C. Demonstrate power rule for integration
- D. Demonstrate integration by substitution and numerical integration
- E. Demonstrate the use of integrals to calculate volume

Unit VI Topics in Differential Calculus

- A. Demonstrate applications of logarithmic differentiation and integration
- B. Demonstrate applications of differentiation and integration of inverse functions
- C. Demonstrate applications of differentiation and integration of exponential functions
- D. Apply differential equations in growth and decay models
- E. Demonstrate applications of differentiation and integration of Inverse Trigonometric Hyperbolic functions

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 10 hours per week outside of the regular class time doing the following:

1. Studying
2. Answering questions



3. Skill practice
4. Completing required reading
5. Problem solving activity or exercise with and without computer assistance

Methods of Instruction:

1. Lecture-demonstrations and sample problems solved by the instructor
2. Computer modeling and exploration

Methods of Evaluation:

1. Computational or non-computational problem-solving demonstrations, including:
 - a. Exams
 - b. homework problems
 - c. quizzes

Supplemental Data:

TOP Code:	170100 Mathematics
SAM Priority Code:	E: Non-Occupational
Funding Agency:	Y: Not Applicable
Program Status:	I: Program Applicable
Noncredit Category:	Y: Not Applicable
Special Class Status:	N: Course is not a special class
Basic Skills Status:	N: Not Applicable
Prior to College Level:	Y: Not Applicable
Cooperative Work Experience:	N: Course is not a part of a cooperative education program
Eligible for Credit by Exam:	Yes
Eligible for Pass/No Pass:	Yes



Discipline:	Mathematics
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 Addition to Taft College General Education:

- Natural Science Social & Behavioral Science English Composition
- Humanities Communication & Critical Thinking

Justification for Addition to Taft College General Education:

Please list the General Education SLOs this course meets:

GE/C&A – Student demonstrates the ability to communicate knowledge, information, ideas, and feelings, and enhance the ability to evaluate, problem solve, and make decisions.

Philosophy (PHIL) 1620 Critical Thinking and Composition (3 Units) CSU

Prerequisite: Successful completion of English 1500, 1501 or 1502 with a grade of 'C' or better, (C-ID ENGL 100) ENGL C1000

Prerequisite knowledge and skills: Before entering the course, the student should be able to:

1. Read, analyze, and evaluate a variety of primarily non-fiction texts for content, context, and rhetorical merit with consideration of tone, audience, and purpose,
2. Apply a variety of rhetorical strategies in writing unified, well-organized essays with arguable theses and persuasive support,
3. Develop varied and flexible strategies for generating, drafting, and revising essays,
4. Analyze stylistic choices in their own writing and the writing of others,
5. Write timed essays in class exhibiting acceptable college-level control of mechanics, organization, development, and coherence,
6. Integrate the ideas of others through paraphrasing, summarizing, and quoting without plagiarism,
7. Find, evaluate, analyze, and interpret primary and secondary sources, incorporating them into written essays using appropriate documentation format, and
8. Proofread and edit essays for presentation so they exhibit no disruptive errors in English grammar, usage, or punctuation

Hours and Units Calculations:

48 hours lecture. 96 Outside of class hours. (144 Total Student Learning Hours) 3 Units

Catalog Description: This course is designed to improve students' critical thinking skills and writing abilities, especially in the formation and development of argumentative and persuasive essays. This course prepares students for higher level courses after transfer. **This course offers instruction in argumentation and critical writing, critical thinking, analytical evaluation of primarily non-fiction texts, research strategies, information literacy, and documentation.**

Type of Class/Course: Degree Credit

Text: Barnet, Sylva, et al. *Current Issues and Enduring Questions: A Guide to Critical Thinking and Argument with Readings, 12th ed.*, Bedford, 2019.

Additional Instructional Materials: CMAP software.

Course Objectives:

By the end of the course, a successful student will be able to

1. define and deploy key critical thinking terms,
2. create effective arguments in
 - a. visual format

- b. written format
 - c. spoken format
- 3. analyze arguments in
 - a. visual format
 - b. written format
 - c. spoken format
- 4. evaluate the accuracy of written arguments and include evaluations in academic writing
- 5. apply critical thinking methods to reach reasonable conclusions
- 6. judge the credibility of sources (spoken, traditional media, and Internet)
- 7. **demonstrate understanding of formal and informal fallacies in language and thought**
- 8. **identify a text's premises and assumptions in various social, historical, cultural, psychological, or aesthetic contexts**
- 9. **author argumentative papers, totaling at least five-thousand words, which employ advanced critical thinking and college-level writing skills**
- 10. **find, analyze, interpret, and evaluate primary and secondary sources, incorporating them into written essays without plagiarism.**
- 11. appreciate diverse perspectives

Course Student Learning Outcomes

- 1. **Students will be able to author an extended argumentative essay containing a well-supported argument.**
- 2. **Students will be able to identify and analyze a variety of logical errors and fallacies.**
- 3. **Students will be able to demonstrate how using critical thinking skills has enabled them to have a sensitivity to diverse perspectives.**

~~Course Scope and Content:~~

~~Unit I — Argument Creation and Composition~~

- ~~A. — Definitions and key terms of Critical Thinking~~
- ~~B. — Important terms in argumentation~~
- ~~C. — Creation of arguments from evidence~~
- ~~D. — Writing prose from argument maps~~
- ~~E. — Writing argumentative prose~~

~~Unit II — Argument Analysis and Composition~~

- ~~A. — Analyzing arguments~~
- ~~B. — Structuring arguments from prose~~

~~Unit III — Argument Evaluation and Composition~~

- ~~A. — Vocabulary of metacognition and fallacious reasoning~~
- ~~B. — Overcoming impediments to critical thinking~~
- ~~C. — Writing evaluative prose~~

~~Unit IV — Scientific Writing~~

Unit I — Argument Creation and Argumentative Writing

- A. **Creation of arguments from evidence**
 - i. **Research based methods foundational for the development and refinement of critical thinking skills.**
 - ii. **Developing skills in deductive reasoning.**
- B. **Transitioning from argument maps to argumentative prose**
 - i. **Research based methods foundational for the development writing skills that properly use evidence in argumentation.**
- C. **Writing argumentative prose**
 - i. **1000+ word argumentative essay**

Unit II Argument Analysis and Analytical Writing

- A. **Analyzing arguments**
 - i. **Research based pedagogy that emphasizes the integration of various sources and multiple points of view essential for academic writing.**
- B. **Writing analytical prose.**
 - i. **1000+ word essay that integrates the analyses of several articles touching upon a culturally relevant topic**

Unit III Argument Evaluation and Evaluative Writing

- A. **Metacognition (requiring students to reflect critically on their own thought processes)**
 - i. **Distinguishing between knowledge from belief and fact from personal opinion.**
 - ii. **Overcoming impediments to critical thinking**
- B. **Fallacious reasoning. (Recognizing logical errors and fallacies)**
- D. **Writing evaluative prose**
 - i. **1000+ word essay requiring students to evaluate the validity of a written argument, emphasizing validity of sources, inherent biases, and quality of evidence.**

Unit IV Scientific Thinking and Scientific Writing

- A. **Experimental Design**
- B. **The Scientific Method**
- C. **Fallacious Reasoning in Scientific Matters**
 - i. **Worldviews, prejudices, lack of evidence, ideological reasoning.**
- D. **1000+ word essay, guided by instructor feedback, exploring proper methods of induction and deduction in science, experimental design, cultural influences on scientific thinking, the impact of unquestioned assumptions, and the role of metacognition in the pursuit of scientifically valid conclusions.**

Unit V Summary Project

- A. **Integration of skills from semester**
 - i. **Using evidence to create an argument**
 - ii. **Integrating various points of view into an argument.**
 - iii. **Evaluate the validity of arguments presented in (ii).**

- iv. **1000+ word essay requiring integration of skills gained from the semester. This essay will demonstrate the ability to marshal and organize appropriate evidence from various sources, judge the validity of this evidence, and present findings in an argumentative format that is supported by proper experimental design.**

Through these units, students are required to write a minimum of 5,000 words.

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 6 hours per weeks outside of the regular class time doing the following:

1. Studying.
2. Answering questions.
3. Completing required reading.
4. Completing argument mapping assignments.
5. Writing essays and papers.

Methods of Instruction:

1. Lectures
2. Individualized instruction (in argument formation, argument analysis, and argument evaluation)
3. Group work

Methods of Evaluation

1. Argument mapping
2. Written assignments **5,000 words**
3. Group presentations

Supplemental Data:

T.O.P. Code:	150900 Philosophy
Sam Priority Code:	E. Non- Occupational
Distance Learning:	N/A
Funding Agency:	Y: Not Applicable
Program Status:	2: Program Applicable
Noncredit Category:	Y: Not Applicable

Special Class Status:	N: Course is not a Special Class
Basic Skills Status:	Not Applicable
Prior to College Level:	Y: Not Applicable
Cooperative Work Experience:	N: is not a part of a cooperative work experience education program
Eligible for Credit by Exam:	No
Eligible for Pass/No Pass:	Yes
Discipline:	Philosophy

Taft College Distance Learning Approval Form Addendum to the Course Outline of Record

Course #: Math 1530

Course Title: Plane Trigonometry

Submitted by: Mariza Martinez

Date: 9/24/2024

Please electronically submit this form, along with the COR and C-ID if available, as a Word file to the Director of Distance Education.

1. Has this course previously been approved for distance learning?

Yes, course is already approved for distance learning and this form is being updated as part of the course review cycle.

No

Other (please explain):

2. This course is being approved for online, offline, and hybrid delivery. If you feel one or more of those deliveries is not appropriate for this course, please select and explain below:

Course is appropriate for all three methods of delivery (no explanation needed).

Course is not appropriate for online delivery:

Course is not appropriate for offline delivery: The co-requisite course for this class is not approved for offline delivery.

Course is not appropriate for hybrid delivery:

3. If this course is approved to be offered in a Distance Learning format, will this action push the percentage of Distance Learning courses offered in the program over 50%? If you are not sure, view the [IR Accreditation page for Substantive Change](#) or ask the division chair and/or the DE Director to determine.
- Prior to this submission, the percentage of Distance Learning courses offered in the program was already over 50%
 - This course will NOT push the percentage of Distance Learning courses offered in the program over 50%
 - This course will push the percentage of Distance Learning courses offered in the program over 50% and a Substantive Change has been submitted to ACCJC.
4. All course outcomes identified in the Course Outline of Record must be met in the distance learning environment. Identify any unique challenges related to outcomes in this course specific to the distance education environment. For those identified, explain how they may be met in a distance learning environment.
- Beyond maintaining regular and effective contact and adhering to accessibility requirements, this course does not present any unique challenges to meeting all course outcomes (no explanation needed).

Potential challenges to meeting course outcomes:

- Educational materials
- Labs
- Models
- Presentations
- Requirements to present in front of live audience
- Field trips
- Requirements to attend a live performance
- Other: Time spent in Math Lab/Learning Center

Explain how each identified challenge can be met in a distance learning environment:

Math Lab Attendance – Instructors will have the option to make this recommended and not required in the online format, or students could utilize the online tutoring provided in the learning center. While the Net Tutor contract is still applicable, students could use this also.

Videos—Publisher, instructor curated, and instructor created videos will have accurate captions verified before being posted for student use.

Graphing Calculator—The department purchased talking graphing calculators for students in need of this service.

5. In accordance with [Title 5](#) and [AP 5145](#) instruction provided as distance education is subject to the requirements that may be imposed by the Americans with Disabilities Act (42 U.S.C. § 12100 et seq.) and section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794d).

I/We have read the full text of [Title 5](#) Section 55206, [AP 5145](#) and the requirements listed below. To ensure access to education for all students, I/We agree that the course content will be designed and maintained to ensure that it is ADA and 508 compliant.

ADA and 508 Compliance Requirements:

- a. Videos are accurately captioned.
- b. Audio files are transcribed.
- c. Objects (including images, tables, and charts) have alternative text.
- d. Course materials are “readable” in terms of font, color contrast, and spacing. Color is not the only method used to convey meaning.
- e. Hyperlink text is meaningful.
- f. Documents are created in such a way that screen reading software can “read” them. (i.e. styles are used; column header rows in tables are specified, etc.)

6. In accordance with [Title 5](#) and [AP 4105](#) this course must promote regular effective instructor/student contact.

I/We have read the full text of [Title 5](#) Section 55204 Instructor Contact, [AP 4105](#), and the guidelines listed below. Having thoughtfully considered the educational value of offering this course in the distance education environment, I/We agree that this course will consistently promote regular effective instructor/student contact.

Regular Effective Contact Guidelines: DE courses are considered the “virtual equivalent” to in-person courses. Lack of regular, timely, and effective contact between students and instructors is a major factor in student attrition and poor performance in online courses. Therefore, an instructor shall regularly initiate interaction with students to determine that they are accessing and comprehending course material and that they are participating regularly in the activities in the course.

Recommended:

- I. Syllabus includes a communication policy that explains or states the following:
 - a. the frequency of all contact initiated by the instructor.

- b. the timeliness of response to student-initiated contact.
- c. the course policy regarding student-initiated contact (where to post questions, assignments, etc.)
- d. important dates, such as assignment and assessment deadlines.
- e. Instructor contact information which includes virtual or in-person office hours.
- f. The student-to-student contact requirements for the course.

Required:

- II. Regular effective contact will be maintained over the course of a week and should occur as often as is appropriate for the course. A response time of 24-48 hours, Monday through Friday is desirable but may vary based on course requirements and extenuating circumstances.
- III. Frequent and substantive feedback is provided throughout the course. A statement describing the frequency and timeliness of instructor feedback will be posted in the syllabus and/or other course documents that are made available for students when the course officially opens each semester.
- IV. Regarding the type of contact that will exist in all Taft College distance learning courses, instructors will use three or more of the following methods to maintain contact with students outlined in [AP 4105](#):

- | | | |
|---|--|---|
| a. Orientation materials | g. Face-to-face formal meetings | m. Personalized feedback for student work |
| b. Weekly announcements in the CMS | h. Feedback for student work | n. Voicemail and telephone |
| c. Threaded discussion boards | i. Podcasts | o. Interactive mobile technologies |
| d. Email contact (within or outside the CMS) | j. Instructor-prepared e-lectures or publisher-created e-lectures or materials | p. Videoconferencing |
| e. Participation in online group collaboration projects | k. Virtual Office hours | q. Live orientation or review sessions |
| f. Face-to-face informal meetings | l. Screencasts | r. Others as appropriate |



DE Committee Comments:

Date forwarded to the Curriculum Committee:

Curriculum Committee Comments:

Course Approved or Disapproved

Taft College Distance Learning Approval Form Addendum to the Course Outline of Record

Course #: Math 1570C

Course Title: Support for Calculus Readiness

Submitted by: Mariza Martinez

Date: 9/11/2024

Please electronically submit this form, along with the COR and C-ID if available, as a Word file to the Director of Distance Education.

1. Has this course previously been approved for distance learning?

Yes, course is already approved for distance learning and this form is being updated as part of the course review cycle.

No

Other (please explain):

2. This course is being approved for online, offline, and hybrid delivery. If you feel one or more of those deliveries is not appropriate for this course, please select and explain below:

Course is appropriate for all three methods of delivery (no explanation needed).

Course is not appropriate for online delivery:

Course is not appropriate for offline delivery: The parent course for this class is not approved for offline delivery.

Course is not appropriate for hybrid delivery:

3. If this course is approved to be offered in a Distance Learning format, will this action push the percentage of Distance Learning courses offered in the program over 50%? If you are not sure, view the [IR Accreditation page for Substantive Change](#) or ask the division chair and/or the DE Director to determine.
- Prior to this submission, the percentage of Distance Learning courses offered in the program was already over 50%
 - This course will NOT push the percentage of Distance Learning courses offered in the program over 50%
 - This course will push the percentage of Distance Learning courses offered in the program over 50% and a Substantive Change has been submitted to ACCJC.
4. All course outcomes identified in the Course Outline of Record must be met in the distance learning environment. Identify any unique challenges related to outcomes in this course specific to the distance education environment. For those identified, explain how they may be met in a distance learning environment.
- Beyond maintaining regular and effective contact and adhering to accessibility requirements, this course does not present any unique challenges to meeting all course outcomes (no explanation needed).

Potential challenges to meeting course outcomes:

- Educational materials
- Labs
- Models
- Presentations
- Requirements to present in front of live audience
- Field trips
- Requirements to attend a live performance
- Other: Time spent in Math Lab/Learning Center

Explain how each identified challenge can be met in a distance learning environment:

Math Lab Attendance – Instructors will have the option to make this recommended and not required in the online format, or students could utilize the online tutoring provided in the learning center. While the Net Tutor contract is still applicable, students could use this also.

Videos—Publisher, instructor curated, and instructor created videos will have accurate captions verified before being posted for student use.

Graphing Calculator—The department purchased talking graphing calculators for students in need of this service.

5. In accordance with [Title 5](#) and [AP 5145](#) instruction provided as distance education is subject to the requirements that may be imposed by the Americans with Disabilities Act (42 U.S.C. § 12100 et seq.) and section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794d).

I/We have read the full text of [Title 5](#) Section 55206, [AP 5145](#) and the requirements listed below. To ensure access to education for all students, I/We agree that the course content will be designed and maintained to ensure that it is ADA and 508 compliant.

ADA and 508 Compliance Requirements:

- a. Videos are accurately captioned.
- b. Audio files are transcribed.
- c. Objects (including images, tables, and charts) have alternative text.
- d. Course materials are “readable” in terms of font, color contrast, and spacing. Color is not the only method used to convey meaning.
- e. Hyperlink text is meaningful.
- f. Documents are created in such a way that screen reading software can “read” them. (i.e. styles are used; column header rows in tables are specified, etc.)

6. In accordance with [Title 5](#) and [AP 4105](#) this course must promote regular effective instructor/student contact.

I/We have read the full text of [Title 5](#) Section 55204 Instructor Contact, [AP 4105](#), and the guidelines listed below. Having thoughtfully considered the educational value of offering this course in the distance education environment, I/We agree that this course will consistently promote regular effective instructor/student contact.

Regular Effective Contact Guidelines: DE courses are considered the “virtual equivalent” to in-person courses. Lack of regular, timely, and effective contact between students and instructors is a major factor in student attrition and poor performance in online courses. Therefore, an instructor shall regularly initiate interaction with students to determine that they are accessing and comprehending course material and that they are participating regularly in the activities in the course.

Recommended:

- I. Syllabus includes a communication policy that explains or states the following:
 - a. the frequency of all contact initiated by the instructor.

- b. the timeliness of response to student-initiated contact.
- c. the course policy regarding student-initiated contact (where to post questions, assignments, etc.)
- d. important dates, such as assignment and assessment deadlines.
- e. Instructor contact information which includes virtual or in-person office hours.
- f. The student-to-student contact requirements for the course.

Required:

- II. Regular effective contact will be maintained over the course of a week and should occur as often as is appropriate for the course. A response time of 24-48 hours, Monday through Friday is desirable but may vary based on course requirements and extenuating circumstances.
- III. Frequent and substantive feedback is provided throughout the course. A statement describing the frequency and timeliness of instructor feedback will be posted in the syllabus and/or other course documents that are made available for students when the course officially opens each semester.
- IV. Regarding the type of contact that will exist in all Taft College distance learning courses, instructors will use three or more of the following methods to maintain contact with students outlined in [AP 4105](#):

- | | | |
|---|--|---|
| a. Orientation materials | g. Face-to-face formal meetings | m. Personalized feedback for student work |
| b. Weekly announcements in the CMS | h. Feedback for student work | n. Voicemail and telephone |
| c. Threaded discussion boards | i. Podcasts | o. Interactive mobile technologies |
| d. Email contact (within or outside the CMS) | j. Instructor-prepared e-lectures or publisher-created e-lectures or materials | p. Videoconferencing |
| e. Participation in online group collaboration projects | k. Virtual Office hours | q. Live orientation or review sessions |
| f. Face-to-face informal meetings | l. Screencasts | r. Others as appropriate |



DE Committee Comments:

Date forwarded to the Curriculum Committee:

Curriculum Committee Comments:

Course Approved or Disapproved

Taft College Distance Learning Approval Form Addendum to the Course Outline of Record

Course #: Math 2100C

Course Title: Support for Analytical Geometry and Calculus 1

Submitted by: David Mitchell

Date: 2/15/2024

Please electronically submit this form, along with the COR and C-ID if available, as a Word file to the Director of Distance Education.

1. Has this course previously been approved for distance learning?
 - Yes, course is already approved for distance learning and this form is being updated as part of the course review cycle.
 - No
 - Other (please explain):

2. This course is being approved for online, offline, and hybrid delivery. If you feel one or more of those deliveries is not appropriate for this course, please select and explain below:
 - Course is appropriate for all three methods of delivery (no explanation needed).
 - Course is not appropriate for online delivery:

 - Course is not appropriate for offline delivery:

 - Course is not appropriate for hybrid delivery:

3. If this course is approved to be offered in a Distance Learning format, will this action push the percentage of Distance Learning courses offered in the program over 50%? If you are not sure, view the [IR Accreditation page for Substantive Change](#) or ask the division chair and/or the DE Director to determine.
- Prior to this submission, the percentage of Distance Learning courses offered in the program was already over 50%
 - This course will NOT push the percentage of Distance Learning courses offered in the program over 50%
 - This course will push the percentage of Distance Learning courses offered in the program over 50% and a Substantive Change has been submitted to ACCJC.
4. All course outcomes identified in the Course Outline of Record must be met in the distance learning environment. Identify any unique challenges related to outcomes in this course specific to the distance education environment. For those identified, explain how they may be met in a distance learning environment.
- Beyond maintaining regular and effective contact and adhering to accessibility requirements, this course does not present any unique challenges to meeting all course outcomes (no explanation needed).

Potential challenges to meeting course outcomes:

- Educational materials
- Labs
- Models
- Presentations
- Requirements to present in front of live audience
- Field trips
- Requirements to attend a live performance
- Other: Time spent in Math Lab/Learning Center

Explain how each identified challenge can be met in a distance learning environment:

Presentations – Students would not be presenting completed problems in the online format.

Math Lab Attendance – This could just be recommended and not required in the online format, or students could utilize the online tutoring provided in the learning center.

5. In accordance with [Title 5](#) and [AP 5145](#) instruction provided as distance education is subject to the requirements that may be imposed by the Americans with Disabilities Act (42 U.S.C. § 12100 et seq.) and section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794d).

I/We have read the full text of [Title 5](#) Section 55206, [AP 5145](#) and the requirements listed below. To ensure access to education for all students, I/We agree that the course content will be designed and maintained to ensure that it is ADA and 508 compliant.

ADA and 508 Compliance Requirements:

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 - d. Course materials are “readable” in terms of font, color contrast, and spacing. Color is not the only method used to convey meaning.
 - e. Hyperlink text is meaningful.
 - f. Documents are created in such a way that screen reading software can “read” them. (i.e. styles are used; column header rows in tables are specified, etc.)
6. In accordance with [Title 5](#) and [AP 4105](#) this course must promote regular effective instructor/student contact.

I/We have read the full text of [Title 5](#) Section 55204 Instructor Contact, [AP 4105](#), and the guidelines listed below. Having thoughtfully considered the educational value of offering this course in the distance education environment, I/We agree that this course will consistently promote regular effective instructor/student contact.

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Recommended:

- I. Syllabus includes a communication policy that explains or states the following:
 - a. the frequency of all contact initiated by the instructor.
 - b. the timeliness of response to student-initiated contact.
 - c. the course policy regarding student-initiated contact (where to post questions, assignments, etc.)
 - d. important dates, such as assignment and assessment deadlines.

- e. Instructor contact information which includes virtual or in-person office hours.
- f. The student-to-student contact requirements for the course.

Required:

- II. Regular effective contact will be maintained over the course of a week and should occur as often as is appropriate for the course. A response time of 24-48 hours, Monday through Friday is desirable but may vary based on course requirements and extenuating circumstances.
- III. Frequent and substantive feedback is provided throughout the course. A statement describing the frequency and timeliness of instructor feedback will be posted in the syllabus and/or other course documents that are made available for students when the course officially opens each semester.
- IV. Regarding the type of contact that will exist in all Taft College distance learning courses, instructors will use three or more of the following methods to maintain contact with students outlined in [AP 4105](#):

- | | | |
|---|--|---|
| a. Orientation materials | g. Face-to-face formal meetings | m. Personalized feedback for student work |
| b. Weekly announcements in the CMS | h. Feedback for student work | n. Voicemail and telephone |
| c. Threaded discussion boards | i. Podcasts | o. Interactive mobile technologies |
| d. Email contact (within or outside the CMS) | j. Instructor-prepared e-lectures or publisher-created e-lectures or materials | p. Videoconferencing |
| e. Participation in online group collaboration projects | k. Virtual Office hours | q. Live orientation or review sessions |
| f. Face-to-face informal meetings | l. Screencasts | r. Others as appropriate |



DE Committee Comments:

Date forwarded to the Curriculum Committee:

Curriculum Committee Comments:

Course Approved or Disapproved

Distance Learning and Education Committee review date: _____ if requesting DLE.

Addition to Taft College General Education:

- Natural Science Social & Behavioral Science English Composition
- Humanities Communication & Critical Thinking

Justification for Addition to Taft College General Education:

Please list the General Education SLOs this course meets:

[Click here to enter text.](#)

MEMO

To: Leslie Minor, Vice President of Instruction
Vicki Jacobi, Curriculum Co-Chair

From: Kanoe Bandy

Division: Applied Technologies

Date: 11/4/2024

Re: Certificate of Achievement: Medical Assisting

Program Title: Certificate of Achievement: Administrative Medical Assisting

Type of Curriculum Change:

New Program Substantial Program Change* Nonsubstantial Program Change*

**For Program inactivations, please follow [Administrative Procedure 4021](#)*

I have reviewed the Program Review prior to updating this program:

Yes No

Justification for Request:

Please enter a brief description of the background and rationale for the new program or for the changes if amending an existing program.

The goals of the Administrative Medical Assistance Certificate is to prepare students for the California Certifying Board for Medical Assistants (CCCBMA) examination. The program will provide students with the opportunity to develop the necessary administrative and clinical skills needed to be an effective medical assistant and to enhance career opportunities as a Medical Assistant.

The Program Learning Outcomes are:

- Research online and traditional reference materials effectively to stay informed about emerging trends and breakthroughs in healthcare issues related to the medical assistant's role in

*Program SLOs are required

healthcare. Analyze emerging trends and breakthroughs regarding healthcare issues related to the role of a medical assistant.

- Perform Administrative Medical Assisting procedures competently, such as OSHA standards, electronic technologies, and medical records.
- Achieve entry level Medical Assisting competencies, such as verbal communication, clerical skills, patient contact, basic banking procedures, and medical insurance to satisfy industry needs.
- Identify Apply State of California regulations that govern the healthcare industry for Medical Assistants.
- Exhibit depth and breadth of knowledge of concepts and principles of medical assisting.

Administrative Medical Assisting Certificate of Achievement

Item 1. Program Goals and Objectives

Goals/ Objectives:

- Prepares students for the California Certifying Board for Medical Assistants (CCBMA) examination.
- Provides the students with the opportunity to develop the necessary administrative and clinical skills needed to be an effective medical assistant.
- Enhance career opportunities as a Medical Assistant.

Objectives (SLOs): Program Learning Outcomes

- Research online and traditional reference materials effectively to stay informed about emerging trends and breakthroughs in healthcare issues related to the medical assistant's role in healthcare. Analyze emerging trends and breakthroughs regarding healthcare issues related to the role of a medical assistant.
- Perform Administrative Medical Assisting procedures competently, such as OSHA standards, electronic technologies, and medical records.
- Achieve entry level Medical Assisting competencies, such as verbal communication, clerical skills, patient contact, basic banking procedures, and medical insurance to satisfy industry needs.
- Identify Apply State of California regulations that govern the healthcare industry for Medical Assistants.
- Exhibit depth and breadth of knowledge of concepts and principles of medical assisting.

Selection Process:

- Fill out an application for the Administrative Medical Assistant Program.
- Complete immunizations requirements.

Fees:

Tuition (per 20.5-unit Certificate of Achievement) = \$943.00

Tuition (per 32-unit Certificate of Achievement) = \$1,472.00

Physical and Immunizations = \$650.00

Books and Supplies = \$1,500.00

Uniform = \$120.00

Item 2. Catalog Description

Certificate of Achievement in Administrative Medical Assisting provides students with the secretarial skills with specific knowledge of medical terminology, scheduling patient appointments, billing patients, and compiling and recording medical charts, reports, and correspondences. The coursework provides the necessary proficiencies to work safely and competently within direct patient contact occupations.

Limitation on Enrollment:

As a condition of enrollment, students are required to submit proof of the follow immunizations:

- Proof of Hepatitis B vaccination with a positive titer (or declination)
- Proof of TDAP or TD within the past 10 years
- Proof of Varicella (2 doses) vaccination or titer positive for immunities
- Proof of MMR (2 doses) vaccination or titers positive for immunities
- COVID-19 Immunization (or completed exemption)
- TB skin, blood test, or chest Xray showing negative TB result
- Flu Shot (flu season October 1 – April 30) (Optional)

Licensure/Certification Eligibility:

California Certifying Board for Medical Assistants (CCBMA) Examination requires both certification in clinical and administrative medical assisting.

Prerequisite Requirements:

None

Program Costs:

Faculty	\$140,970.65
Equipment	\$22,000.00
Total Cost per year	\$162,970.65

Total Program Cost at 1.5 years = **\$244,455.98**

Career Opportunities:

This program prepares students for careers in medical assisting. According to the United States Bureau of Labor Statistics, medical assisting is one of the nation's fastest growing careers. "Employment of medical assistants is projected to grow 15 percent from 2023 to 2033, much faster than the average for all occupations. About 119,800 openings for medical assistants are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire." Retrieved Bureau of Labor Statistics website 10/29/2024

Certificate of Achievement:

Students must complete the required 9 units of core courses along with 11.5 units in of Administrative Medical Assisting for a total of 20.5 units. All 20.5 units require a GPA of 2.0 or better, and a grade of "A," "B," "C," or "P" in all courses for the core and specialization. A minimum of 12 units must be completed at Taft College.

Item 3. Program Requirements

Core Courses

MEDA1101	Introduction to Health Careers	1.0
MEDA1102	Communication in Healthcare	2.0
MEDA1103	Medical Law, Ethics, and IT Security	1.5
MEDA1104	Electronic Health Record	1.5
HLED1541	Medical Terminology	3.0
		9.0

Administrative Medical Assisting

CIS1603	Introduction to Word Processing - Microsoft Word	1.5
CIS1703	Introduction to Spreadsheets - Microsoft Excel	1.5
MEDA1105	Medical Office Procedures	3.0
MEDA1106	Basic Medical Insurance and Billing	3.0
MEDA1107	Basic ICD and CPT Coding	1.0
MEDA1201	Administrative Medical Assistant Externship	1.5
		11.5

Proposed Sequence:

First term 12 units	Second term 11.5 units	
MEDA 1101 1.0 unit	CIS 1603 1.5 units	
MEDA 1102 2.0 units	CIS 1703 1.5 units	
MEDA 1103 1.5 units	MEDA 1105 3.0 units	
MEDA 1104 1.5 units	MEDA 1106 3.0 units	
HLED 1541 3.0 units	MEDA 1107 1.0 UNITS	
SPAN 1501 3.0 units	MEDA 1201 1.5 UNITS	

Assisting Core Courses = 9.0 units + SPAN 1501 3 units

Administrative Medical Assisting Courses = 11.5 units

Proposed Sequence:

First Term = Core Courses @ 9.0 units

Second Term = Administration Medical Assisting Courses @ 11.5 units

Item 4. Master Planning

The Certificate of Achievement in Administrative Medical Assisting meets the primary mission of the California Community Colleges by contributing to workforce improvement. Medical Assisting is a growing career field in Kern County. As Kern County increases in size, so does the need for healthcare professionals. This program is meant to train students as medical assistants while earning a Certificate of Achievement and meeting the partial requirements for state certification. Having a Certificate of Achievement in this field enables students to earn higher wages, work toward a healthcare related degree, and work in several medical facilities throughout Kern County.

The Medical Assisting Program has been supported by the West Kern Health Care District. The West Kern Health Care District employs Medical Assistants and is working with Taft College to train allied health students. Other organizations like Dignity Health, Adventist Health, and Kern Family Health Care are working with Taft College to build allied health programs. All students enrolled into the program will be required to meet the selection process requirements.

This program was reviewed by the Taft College Allied Health Care Advisory Committee, SLO Committee, and Curriculum and General Education Committee. The Taft College Allied Health Care Advisory Committee made the recommendation to move the program forward after reviewing program requirements. The SLO and Curriculum Committees approved the program and supported the program submission to the regional consortium, and State Chancellor’s Office. Once the Certificate of Achievement in Administrative Medical Assisting is approved, the program will continue to be evaluated through the Comprehensive Program Review process at Taft College.

ADVISORY MEETING AGENDA are in the addendum

LABOR MARKET DATA is in the addendum

Item 5. Enrollment and Completer Projections

Enrollment Data: HLED 1541 Medical Terminology

		2021-2022		2022-2023	
CB01: Course Department Number	CB02: Course Title	Annual # Sections	Annual Enrollment Total	Annual # Sections	Annual Enrollment Total
HLED 1541	Medical Terminology	3	184	3	142

Completer Data: HLED 1541 Medical Terminology

Academic Year	Enrollment	Enrollment without Grade 'W'	Completer	Sections
2021-22	184	167	122	3
2022-23	142	130	130	3
Total	326	297	252	6

Item 6. Place of Program in Curriculum/Similar Programs

Before completing this section, review the college’s existing program inventory in the CCC Curriculum Inventory, then address the following questions:

- a) Do any active inventory records need to be made inactive or changed in connection with the approval of the proposed program? No
- b) Does the program replace any existing program(s) on the college’s inventory? No
- c) What related programs are offered by the college? Emergency Medical Technician and Certificate of Achievement for Clinical Medical Assisting (pending with the Chancellor’s Office)

Item 7. Similar Programs at Other Colleges in Service Area

None

The new Curriculum Inventory System, launched in July 2017, has added new requirements to program proposals. Please fill out this form and include it with your degree or certificate submission.

Program Title: COA Administrative and Clinical Medical Assisting

Program TOP Code: 1208.00

The TOP code is assigned according to the content and outcomes of the program and must conform closely to the TOP code given to similar programs in other colleges around the state. The TOP code reflects the main discipline or subject matter; thus the program TOP code will reflect the majority of required degree courses.

Annual Completers: 30

The number of students estimated to receive the degree or certificate each year after the program is fully established.

Program Goals:

- Prepares students for the California Certifying Board for Medical Assistants (CCBMA) examination.
- Provides the students with the opportunity to develop the necessary administrative and clinical skills needed to be an effective medical assistant.
- Enhance career opportunities as a Medical Assistant.

Degree and Certificate programs may have the following specified program goals: Career Technical Education (Limited to Programs in the CTE TOP codes other than ADTs) (C), Transfer (All ADTs and Certificates of Achievement for CSU GE Breadth and IGETC) (T), and Local (all other AA/AS degrees and certificate not in a CTE TOP Code) (O).

Net Annual Labor Demand (CTE only): 1,384 Annual Openings – 30 Annual Completers = 1,354 Net Annual Labor Demand

For CTE programs only, fill in the estimated number of annual job openings, minus the annual number of program completers of other programs within the counties in the college service areas. In most cases, this figure must cover only the counties within the college's service area but for occupations considered to have a larger regional or statewide training and recruitment area, the larger area may be used.

Faculty Workload: 1.00

Provide the number of full-time equivalent faculty that will be dedicated to teaching the courses in this program, in the program's first full year of operation, regardless of whether they are new or existing faculty. This estimate is not the number of FTES (full time equivalent students) expected to be generated by the program. The number must be entered as a decimal—for example, one and a quarter full-time equivalent faculty would be entered as 1.25.

New Faculty Positions: 2

Provide the number (not FTEF) of separately identified new positions, both part- and full-time. For example, if three part-time positions will be new, then enter the number 3 (three). If existing faculty are sufficient for offering the program with courses and no plans exist to hire new faculty, enter 0 (zero).

New Equipment: \$120,000.00

If new equipment will be acquired for this program, estimate (in dollars) the total cost from all sources, including district and state funds.

New/Remodeled Facility: \$0.00

If new or remodeled facilities will be acquired for this program, estimate (in dollars) the cost from all sources, including district and state funds.

Library Acquisitions: \$0.00

Provide the estimated cost (in dollars) of library and learning resources materials

Program Review Date: 05/01/2026

Enter the month and year of the first scheduled review after it has been approved. For degrees/certificates with a program goal of “Career Technical Education (CTE).” pursuant to Education code section 78016 the degree/certificate must be reviewed every two (2) years.

Gainful Employment: Yes

Indicate if the program meets U.S. Department of Education gainful employment criteria. Not applicable for AA-T or AS-T degrees.

Apprenticeship: No

Select “No” if the program is not an apprenticeship. Select “Yes” if the program is an apprenticeship with approval from the Division of Apprenticeship Standards.

Distance Education: 0%

Indicate the extent to which the courses associated with the certificate are conducted via distance education; four choices are available, 0%, 1-49%, 50-99%, or 100%

CTE Regional Consortium Approved: No (This is going to be sent after Curriculum Committee approval.)

For programs with a selected program goal of CTE, by selecting “Yes” the college certifies that the program was approved by the CTE regional consortium. For a program with a selected goal that does not include CTE, this field is not required.



ALLIED HEALTH ADVISORY COMMITTEE MEETING

April 18, 2024

Members Present: Dina Adalco, Cindy Archer, Jan Ashley, Kanoe Bandy, Darcy Bogle, Devin Daugherty, Tracy Hernandez, Jeff Fariss, Vernita Goodlet, Susan Groveman, Sheri Horn-Bunk, Nick Lidgett, Leslie Minor, Cindi Rafoth, Raeann Schmunk, Jennifer Woodward, and Kelsey Ziels.

Members Absent: Dawn Cole, Sarah Criss, Kimberley Jenkins, Komal Kahlon, Maybelle Liquigan, Brock McMurray, Robin McNabb, Ronald Ostrom, Kristi Richards, and Summer Wood-Luper.

Guests:

Facilitator: Devin Daugherty
Recorder: Jennifer Woodward

Call to Order:

The Allied Health Advisory Committee Meeting was called to order at 3:05pm.

1. Introductions

Devin Daugherty opened the meeting and everyone present introduced themselves.

2. Public Comments/New Business

Meeting participants had the opportunity to bring new business or make public comments, but there were no volunteers.

3. Paramedic Program

Devin Daugherty discussed the Paramedic Program that is in development. The proposed program will provide a Certificate of Achievement following the completion of 3 courses spread over 3 terms. The program will provide the didactic and clinical experience necessary for taking the national certification exam.

Jeff Farris noted that the program exceeds the minimum standards for national certification. Nick Lidgett noted that the program developed skills towards ACLS, PHTLS, and PALS certification—other local programs do not do this.

Sheri Horn-Bunk asked how the cohort will be selected. Dr. Daugherty said that this had not yet been decided.

Dr. Daugherty asked for a motion to move the program forward. Mr. Fariss made the motion. Mr. Lidgett seconded.

4. Medical Assisting Program

Devin Daugherty discussed the Medical Assisting Program that is in development. The proposed program will provide a Certificate of Achievement following the completion of 5 courses spread over 3 terms. The program will provide training in the skills required by the state for this profession. There is also a plan to develop a Clinical Medical Assisting Program comprised of 4 courses.

Dina Aldaco asked where externships would be located for these programs. Dr. Daugherty noted that MOUs were being developed with partners in Taft, the Bakersfield metropolitan area, and anticipated additional locations throughout the county. Ms. Aldaco expects interest from her medical contacts. Dr. Daugherty asked for a motion to move the program forward. Mr. Fariss made the motion. Tracy Hernandez seconded.

5. Nursing Program Updates

Devin Daugherty announced that building projects were moving forward on the construction of spaces for the upcoming nursing program. This will include labs, faculty offices, an Allied Health office, and an office for the forthcoming program director, who has not been selected as of this meeting. The current plan is to hire for this position by the end of the year.

Once a bid for these projects has been accepted Taft College will apply to the Board of Registered Nurses for program certification.

Dr. Daugherty contacted the Center of Excellence for an analysis of the nursing labor market. He announced a \$40,000 grant to develop a nursing program.

6. Recommendations for New Programs

Devin Daugherty called for program recommendations. Mr. Lidgett suggested an EMR (Emergency Medical Responder) Certification. It is a national certification that provides basic training for responding to emergency situations.

Kelsey Ziels recommended a CNA program. Adult Ed does a pre-CNA program and the CNA is a great feeder for the Nursing AS. Leslie Minor recommended Phlebotomy for the same reason. Dr. Daugherty developed Phlebotomy programming at USC which could potentially be used here.

Jennifer Woodward recommended a MLT (Medical Lab Technician) program. Dr. Daugherty will take this list of recommendations and get labor market analyses for these from the Center for Excellence.

Next Meeting: September on Zoom

Facilitator: Devin Daugherty

Meeting Adjourned: 3:56PM

Respectfully submitted by: Jennifer Woodward

October 2023

Labor Market Analysis

Medical Office Administration



Prepared by Central Valley/Mother Lode Center of Excellence



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If for any reason this document is not accessible or if you have specific needs for readability, please contact us and we will do our utmost to accommodate you with a modified version. To make a request, contact Nora Seronello by phone at (209) 575-6894 or by email seronellon@mjc.edu.

Summary

The Central Valley/Mother Lode Center of Excellence developed this report for Clovis Community College to determine whether there is demand in the local labor market that is not being met by the supply from postsecondary programs. This report summarizes labor market demand, wages, skills, and postsecondary supply for *Medical Office Administration*, which includes:

- Medical Records Specialists (SOC 29-2072)
- Medical Assistants (SOC 31-9092)
- Medical Secretaries and Administrative Assistants (SOC 43-6013)

Key Findings

- **Occupational Demand** — Occupations related to *Medical Office Administration* have a labor market demand of 2,363 annual job openings in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. Between 2021 and 2026, medical assistants are projected to have the most demand with 1,384 annual job openings and jobs with a growth projection of 18%.
- **Wages** — Average entry-level earnings of \$17.28/hour for *Medical Office Administration* occupations are higher than the living wage in the SCV/SML subregion, which is \$11.91/hour for a single adult.¹ Medical records specialists earn the highest entry-level wage, \$17.78/hour.
- **Employers and Occupational Titles** — Employers in the SCV/SML subregion include Adventist Health, Aston Carter, and Clinica Sierra Vista. The most common job title is medical assistants.
- **Skills and Certifications** — The top baseline skill is communication, the top specialized skill is medical assistance, and the top software skill is Microsoft Excel. The most in-demand certification is a Basic Life Support (BLS) Certification.
- **Education** — A high school diploma or equivalent is typically required for medical secretaries and administrative assistants. A postsecondary nondegree award is typically required for medical assistants and medical records specialists.
- **Supply and Demand Analysis** — An analysis of supply and demand reveals that there are 2,363 annual openings (i.e., demand) and 154 average annual postsecondary degrees awarded (i.e., supply) in the SCV/SML subregion. This suggests an undersupply of 2,209 workers. In the CVML region, there are 3,490 annual openings and 246 awards were conferred suggesting an undersupply of 3,244 workers.

Recommendation

Based on a comparison of demand and supply, there is an undersupply of trained workers in the SCV/SML subregion and the CVML region. The Center of Excellence recommends that Clovis Community College work with the regional directors, the college's advisory board, and local industry in the expansion of programs to address the shortage of *Medical Office Administration* workers.

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

Introduction

The Central Valley/Mother Lode Center of Excellence developed this report to provide Clovis Community College with labor market information for *Medical Office Administration*. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. Analysis of the program and occupational data related to *Medical Office Administration* is contained in the report. The Standard Occupational Classification (SOC) System codes and occupational titles used in this report from the Bureau of Labor Statistics and O*NET OnLine are shown below.

Medical Records Specialists (SOC 29-2072)

- **Job Description:** Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the healthcare system. Classify medical and healthcare concepts, including diagnosis, procedures, medical services, and equipment, into the healthcare industry's numerical coding system. Includes medical coders.
- **Knowledge:** N/A
- **Skills:** N/A

Medical Assistants (SOC 31-9092)

- **Job Description:** Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician.
- **Knowledge:** English Language, Customer and Personal Service, Medicine and Dentistry, Administrative, Computers and Electronics
- **Skills:** Social Perceptiveness, Active Listening, Speaking, Reading Comprehension, Critical Thinking

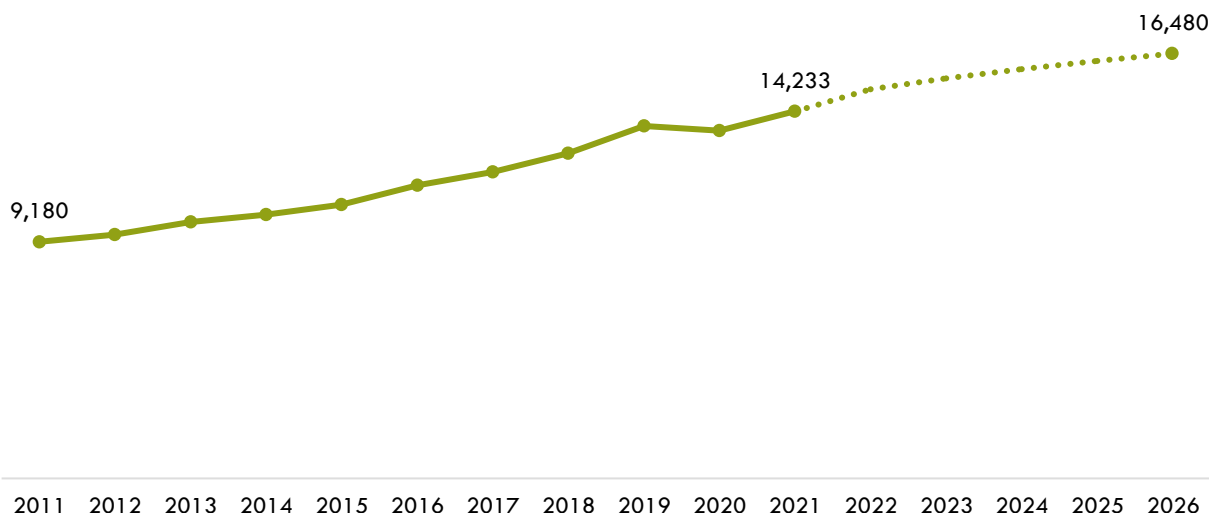
Medical Secretaries and Administrative Assistants (SOC 43-6013)

- **Job Description:** Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence.
- **Knowledge:** Customer and Personal Service, English Language, Administrative, Medicine and Dentistry, Computers and Electronics
- **Skills:** Customer and Personal Service, English Language, Administrative, Medicine and Dentistry, Computers and Electronics

Employment

Exhibit 1a shows trends for *Medical Office Administration* in the SCV/SML subregion. Between 2021 to 2026, the number of jobs for occupations related to *Medical Office Administration* is projected to increase by 2,247 a growth rate of 16%.

Exhibit 1a. Historical employment and projected occupational demand for occupations related to *Medical Office Administration* in the SCV/SML subregion, 2011-2026



Occupations related to *Medical Office Administration* in the SCV/SML subregion employed 14,233 workers in 2021 (Exhibit 1b). Medical assistants are projected to have the largest growth at 18% with 1,384 annual openings.

Exhibit 1b. Current employment and projected occupational demand for occupations related to *Medical Office Administration* in the SCV/SML subregion, 2021-2026

Occupation	2021 Jobs	2026 Jobs	5-Year Change	5-Year % Change	Annual Openings
Medical Assistants	7,310	8,656	1,346	18%	1,384
Medical Secretaries and Administrative Assistants	5,645	6,413	769	14%	855
Medical Records Specialists	1,278	1,411	133	10%	124
TOTAL	14,233	16,480	2,247	16%	2,363

Wages

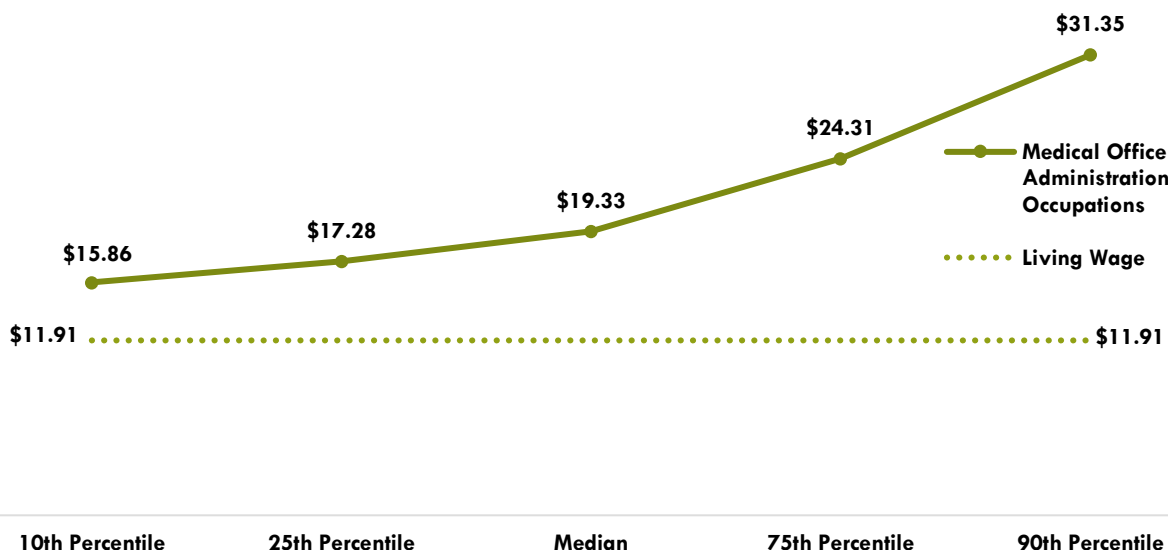
The average living wage for a single adult in the SCV/SML subregion is \$11.91/hour.² Exhibit 2a shows the highest entry-level hourly wages for medical records specialists, a *Medical Office Administration Occupation*, which has an entry-level wage of \$17.78/hour.³

Exhibit 2a. Hourly wages for occupations related to *Medical Office Administration* in the SCV/SML subregion

Occupation	25 th Percentile Hourly Earnings	Median Hourly Earnings	75 th Percentile Hourly Earnings
Medical Records Specialists	\$17.78	\$21.64	\$28.62
Medical Assistants	\$17.08	\$18.38	\$21.97
Medical Secretaries and Administrative Assistants	\$16.98	\$17.99	\$22.34

Exhibit 2b shows the average hourly wages for *Medical Office Administration* occupations; the average entry-level wage is more than the living wage for the SCV/SML subregion.

Exhibit 2b. Average hourly wages for occupations related to *Medical Office Administration* in the SCV/SML subregion



² The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

³ Note: 10th and 25th percentiles are considered entry-level wages while 75th and 90th are considered experienced wages, which may be obtained through long-term employment or extra training, etc.

Job Postings

There were 6,949 unique job postings for occupations related to *Medical Office Administration* in the SCV/SML subregion from April 2023 to September 2023.⁴

Top Employers

The top employers with the most job postings are listed in Exhibit 3. The top employers in online job postings were Adventist Health, Aston Carter, and Clinica Sierra Vista.

Exhibit 3. Top employers of *Medical Office Administration* in job postings

Employer
Adventist Health
Aston Carter
Clinica Sierra Vista
Saint Agnes Medical Center
Community Regional Medical Center
Community Health Systems Professional Services Corporation
Family Healthcare Network
Valley Children's Healthcare
Sante Health
Trinity Health

Top Job Titles

Exhibit 4 shows the most common job titles for *Medical Office Administration* in the SCV/SML subregion.

Exhibit 4. Top job titles in job postings for *Medical Office Administration*

Job Title
Medical Assistants
Medical Receptionists
Medical Billers

⁴ Other than occupational titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Salaries

Exhibit 5 shows the “Market Salaries” for *Medical Office Administration*. These are calculated by Lightcast using a machine learning model built from millions of job postings every year. This accounts for adjustments based on location, industry, skills, experience, education, among other variables.

Exhibit 5. Market salaries for *Medical Office Administration*

Market Salary	Job Postings
\$36,000-\$39,999	1,040
\$32,000-\$35,999	881
\$40,000-\$43,999	564
\$44,000-\$47,999	445
\$60,000-\$197,000	235

Education

Of the 6,949 unique job postings, 5,651 listed a preferred or minimum educational requirement for the position being filled. Among those, 70% requested a high school diploma or GED, 19% requested an associate degree, and 9% requested a bachelor’s degree (Exhibit 6).

Exhibit 6. Education levels requested in job postings for *Medical Office Administration*

Education Level	Job Postings	% of Job Postings
High school or GED	3,936	70%
Associate degree	1,060	19%
Bachelor's degree	489	9%
Master's degree	141	2%
Ph.D. or professional degree	25	0%

Baseline, Specialized, and Software Skills

Exhibit 7 depicts the top baseline, specialized, and software skills in job postings. The most commonly requested baseline skill is communication. The most commonly requested specialized skill is medical assistance. The most commonly requested software skill is Microsoft Excel.

Exhibit 7. In-demand baseline, specialized, and software skills for *Medical Office Administration* in job postings

Baseline Skills	Specialized Skills	Software Skills
Communication	Medical Assistance	Microsoft Excel
Customer Service	Medical Records	Microsoft Office
Clerical Works	Vital Signs	Clinic Management Systems
Detail Oriented	Medical Terminology	Epic EMR
Scheduling	Front Office	Lookup Tables

Certifications

Of the 6,949 job postings, there were 6,345 certifications listed. Among those, 19% indicated a need for a Basic Life Support (BLS) Certification. The next top certification is a Certified Medical Assistant (CMA) (Exhibit 8).

Exhibit 8. Top Medical Office Administration certifications requested in job postings

Certifications	% of Job Postings
Basic Life Support (BLS) Certification	19%
Certified Medical Assistant (CMA)	10%
Registered Nurse (RN)	7%
Cardiopulmonary Resuscitation (CPR) Certification	7%
Nurse Practitioner (APRN-CNP)	7%

Education, Work Experience, & Training

A high school diploma or equivalent is typically required for medical secretaries and administrative assistants. A postsecondary nondegree award is typically required for medical assistants and medical records specialists (Exhibit 9).

Exhibit 9. Education, work experience, training, and Current Population Survey results for occupations related to Medical Office Administration⁵

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Medical Assistants	Postsecondary nondegree award	None	None	63.4%
Medical Secretaries and Administrative Assistants	High school diploma or equivalent	None	Moderate-term	53.6%
Medical Records Specialists	Postsecondary nondegree award	None	None	46.8%

⁵ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

Supply

An analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) for the last three program years shows that, on average, 154 awards were conferred in the SCV/SML subregion (Exhibits 10 and 11).

Exhibit 10. TOP and CIP codes for Medical Office Administration

TOP Titles	CIP Titles
	51.0710 - Medical Office Assistant/Specialist
	51.0712 - Medical Reception/Receptionist
1208.20 - Administrative Medical Assisting	51.0714 - Medical Insurance Specialist/Medical Biller
	51.0716 - Medical Administrative/Executive Assistant and Medical Secretary

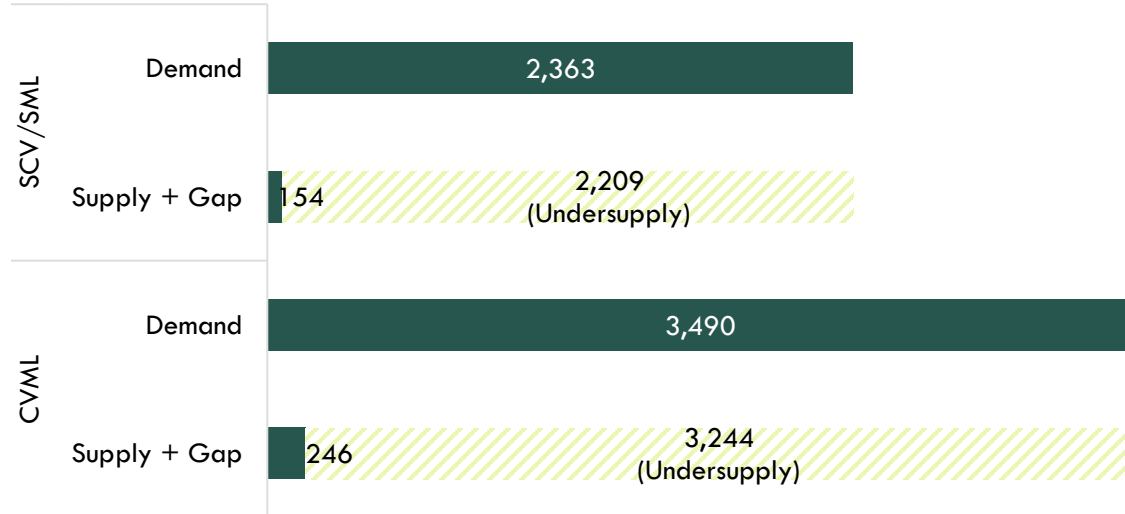
Exhibit 11. Postsecondary supply for Medical Office Administration for Program Years 2019-20 through 2021-22

TOP/CIP Code- Title	College	Certificates of at least 1 but less than 2 years	Certificates of less than 1 year	Associate degree	Certificate 30 < 60 Semester Units	Total
1208.20 - Administrative Medical Assisting	Cerro Coso				9	9
51.0705 - Medical Office Management/Administration	Agape College of Business and Science			1		1
51.0706 - Health Information/Medical Records Administration/Administrator	Institute of Technology	91				91
51.0710 - Medical Office Assistant/Specialist	Santa Barbara Business College-Bakersfield	16		4		20
	United Education Institute-UEI College Stockton	43				43
51.0714 - Medical Insurance Specialist/Medical Biller	Carrington College-Stockton	12				12
	Santa Barbara Business College-Bakersfield			3		3
51.0716 - Medical Administrative/Executive Assistant and Medical Secretary	Carrington College-Stockton	9				9
	Milan Institute-Merced		18			18
	Milan Institute-Visalia		30			30
	Stellar Career College		10			10
SCV/SML TOTAL		107	30	8	9	154
CVML TOTAL		171	58	8	9	246

*SCV/SML awards

There is an undersupply of 2,209 *Medical Office Administration* workers in the SCV/SML subregion and an undersupply of 3,244 workers in the region (Exhibit 12).

Exhibit 12. *Medical Office Administration* workforce demand (annual job openings), postsecondary awards (supply), and additional students needed to fill gap in the SCV/SML subregion and region



Student Outcomes

There was no outcomes data from California Community College Chancellor’s LaunchBoard for TOP codes related to *Medical Office Administration*.

Recommendation

This report suggests there is a shortage of 2,209 workers in the SCV/SML subregion and a shortage of 3,244 workers in the CVML region for *Medical Office Administration*. Based on these findings, it is recommended that Clovis Community College work with the regional directors, the college’s advisory board, and local industry in the expansion of programs to address the shortage of *Medical Office Administration* workers in the region.

Appendix: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor’s Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (Lightcast). Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level Lightcast earnings by industry: economicmodeling.com.
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
LaunchBoard	Chancellor’s LaunchBoard. https://www.calpassplus.org/LaunchBoard/SWP.aspx
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Lightcast: https://lightcast.io/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (LIGHTCAST) formula that includes historical employment and economic indicators along with national, state and local trends.

LaunchBoard (Attained the Living Wage): Among SWP students who exited college and did not transfer to any postsecondary institution, the proportion who attained the district county living wage for a single adult measured immediately following academic year of exit

LaunchBoard (Median Annual Earnings): Among SWP students who exited the community college system and who did not transfer to any postsecondary institution, median earnings following the academic year of exit.

LaunchBoard (Median Change in Earnings): Among SWP students who exited and who did not transfer to any postsecondary institution, median change in earnings between the second quarter prior to the beginning of the academic year of entry and the second quarter after the end of the academic year of exit from the last college attended.

LaunchBoard (Job Closely Related to Field of Study): Among SWP students who responded to the CTE Outcomes Survey and did not transfer to any postsecondary institution, the proportion who reported that they are working in a job very closely or closely related to their field of study.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.

AP 4050 Articulation

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Reference:

Education Code Section 66720-66744

Title 5 Section 51022(b) and 55051;

ACCJC Accreditation Standard ~~II.A.10 (formerly II.A.6.a)2~~

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Articulation with Post-Secondary Institutions

Articulation is the process of developing a formal, written and published agreement that identifies courses (or sequences of courses) on a “sending” campus that are comparable to, or acceptable in lieu of, specific course requirements at a “receiving” campus.

Successful completion of an articulated course assures the student and the faculty that the student has taken the appropriate course, received the necessary instruction and preparation, and that similar outcomes can be assured, enabling progression to the next level of instruction at the receiving institution.

Course articulation agreements are classified under the following categories:

1. Courses accepted for baccalaureate credit.
2. Transfer credit agreement.
3. General education-breadth agreements.
4. Course-to-course agreements.
5. Lower division major preparation agreements.

The process of developing and reviewing curriculum and coursework to determine course comparability between institutions rests with the faculty at the respective institutions. Faculty members in each discipline are responsible for the review of course content, the identification of comparable courses, and the authorization of acceptance of specific courses for transferring students. This may also mean that the Articulation Officer ensures any articulation of high school courses meet the rigor for transferable courses.

The Articulation Officer is responsible for the following:

1. Initiating faculty-approved articulation agreements between institutions

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Revised 8/22/17xx/xx/xx

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of higher education, primarily with California State University system and University of California system.

2. Serving as a consultant to faculty and academic units, providing needed materials and information about course articulation proposals and acceptances.
3. Serving as an advocate for the faculty and campus academic programs.
4. Serving as an advocate for the articulating institution, responsible for accurately communicating and conveying information and concerns about that institution's curriculum to the faculty.
5. Serving as the campus liaison to the segmental system-wide office, often responsible for disseminating policy changes and update information.
6. Managing and updating campus articulation data and information.
7. Disseminating current, accurate articulation data to appropriate departments, staff, and students.
8. Facilitating campus participation in intersegmental programs (i.e., [California Intersegmental Articulation Council \(CIAC\)](#), [Course Identification Numbering System \(C-ID\)](#), [ASSIST-NG](#), [Common Course Numbering \(CCN\)](#)).
9. Advocating for the transfer student and seeking to ease the transfer process.

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BP 4050 Articulation

Reference:

Education Code Sections 66720-66744

Title 5, Section 51022(b);

ACCJC Accreditation Standard 2

The Superintendent/President or designee shall establish procedures that assure appropriate articulation of the District's educational programs with proximate high schools and baccalaureate institutions. The procedures also may support articulation with institutions, including other community colleges and those that are not geographically proximate but that are appropriate and advantageous for partnership with the District.

See Administrative Procedures AP 4050