Marion Technical College

Instructional Delivery in Co-requisite Math

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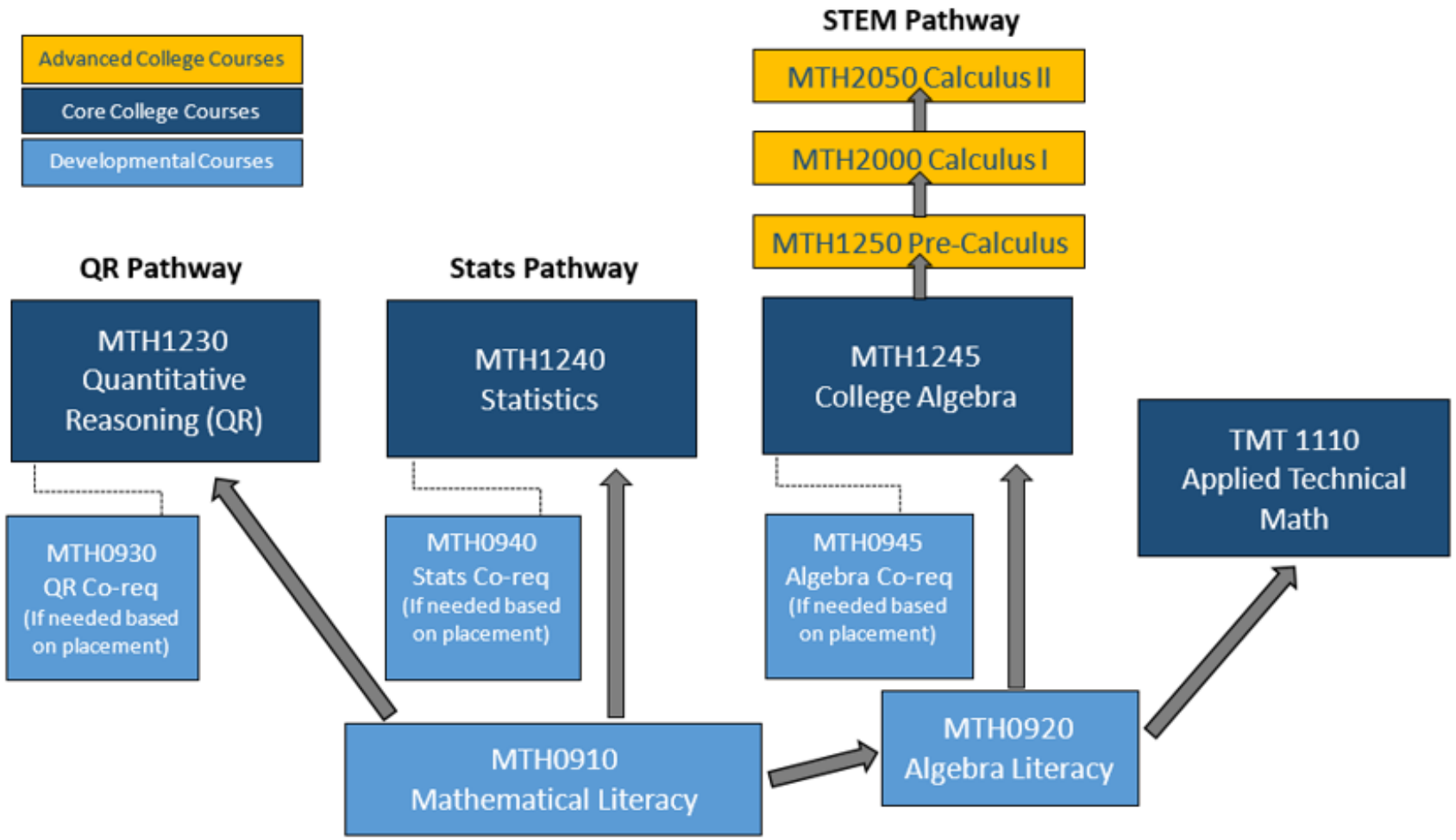
About MTC

- Approximately 2,600 students are currently enrolled.
- Approximately 1,000 College Credit Plus students.
- Average student age is 27.
- Student population is 64% female; 36% male.
- Nearly half of MTC students live in Marion County.
- More than half of MTC students attend part-time, and 60% work while enrolled.
- Nearly 10% of MTC students attend evening classes.
- Average class size of 24 students for lecture courses; 17 for lab courses.

Math Pathways

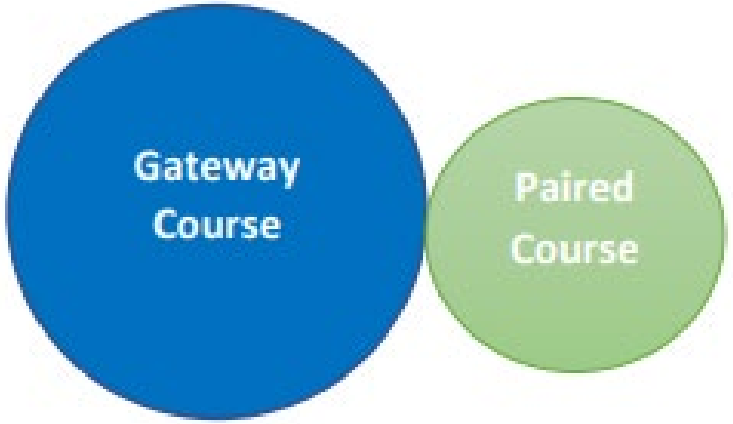


Marion Technical College

Our Co-req Courses

- Co-reqs to Support College Algebra, Introductory Statistics, and Quantitative Reasoning
- 2 Credit Hours
- Separate Courses/Separate Grades: Paired Course Model
- Format: In-person and Online
- College Level Instructor ≠ Co-req Instructor
- Heterogenous Mixture in College Level Classes
- Number of College Level Sections ≠ Number of Co-req Sections
- Communication Between College Level Instructor and Co-req Instructor is Encouraged, But Not Structured

Figure 1: Paired Course Model



Co-req Schedule Alignment

Statistics Co-Requisite MTH0940/Lecture/02	Tues Thur 10:00 AM - 10:50 AM; Marion Technical College, Bryson Hall, Room 190
Statistics MTH1240/Lecture/02	Tues Thur 11:00 AM - 12:20 PM; Marion Technical College, Bryson Hall, Room 190

Increase Motivation for Students Enrolled in Co-requisite Courses

1. **Performance in Co-req Course Impacts College Grade / 101 Plus Model**

Figure 2: 101 Plus Model

Marion Technical College

Increase Motivation for Students Enrolled in Co-requisite Courses

1. Performance in Co-req Course Impacts College Grade / 101 Plus Model
2. Directly Align Co-req and College Material
   - Backward Design
   - Explicitly Known to Students

Backward Design

Mathematics Foundations for Success in Introductory Statistics

August 2019

Roxy Peck
California Polytechnic State University, San Luis Obispo

Rob Gould
University of California, Los Angeles

Jessica Utts
University of California, Irvine
2016 President, American Statistical Association

Dana Center
Mathematics
PATHWAYS

Graphing Points and Lines in Two Dimensions	
Students need to be able to . . .	**In order to . . .**
Plot an ordered pair (x, y) in a rectangular coordinate system	Create scatterplots and residual plots
Understand slope as the change in y associated with a 1-unit change in x	Understand and interpret regression coefficients in a data context
Given the equation of a line, draw the graph of the line	Graph the regression line
Use the equation of a line to find the y-value associated with a given x-value	Use the regression line to make predictions
Find the vertical distance between a point and a line	Calculate residuals

Increase Motivation for Students Enrolled in Co-requisite Courses

1. Performance in Co-req Course Impacts College Grade / 101 Plus Model
2. Directly Align Co-req and College Material
   - Backward Design
   - Explicitly Known to Students
3. Write Co-requisite Material in Context of College Level Course

Make Co-requisite Material Relevant

In Co-requisite Course

- Someone with a z-score of 3 or higher is considered genius on the IQ test. Assume IQ scores are unimodal and symmetric. The mean of IQ scores is 100 with a standard deviation of 15. What scores would someone be considered a genius on the IQ test?
- Solve the following equation for x

$$z = \frac{x - \mu}{\theta}$$

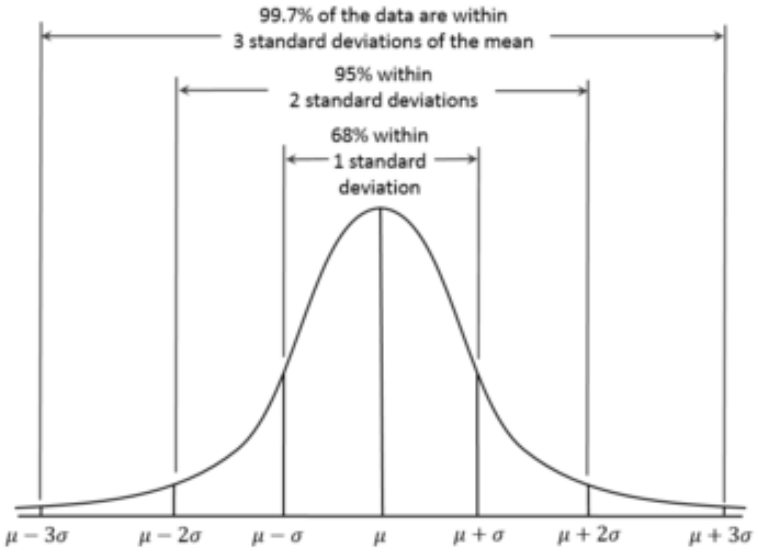
In Pre-requisite Course

- Solve for b.

$$A = \frac{1}{2}h(b + B)$$

- Solve for a.

$$\frac{1}{a} + \frac{1}{b} = \frac{1}{2}$$



Non-Mathematics Skills/Soft Skills

1. **Study Skills / Think Proactively**

Study Skills / Think Proactively

Math Strategies and Study Tips

36 36

I want everyone to be successful this semester and reach their mathematics goals. You may need to study differently for mathematics than another subject area. A good skills is to be able to recognize what study habits work well for you and how to implement them.

Read this list of Math Strategies and Study Tips from the Saint Louis University.

https://mathstat.slu.edu/resources/success-in-mathematics

Answer these questions in your post:

1. Pick at least 5 study tips and strategies that you will use this semester. Explain your plan of action to hold yourself accountable to these and how will it help you be more successful in mathematics. (10 pts)
2. Reply to at least 2 other students. (5 pts)
3. Write or upload rough schedule what times and days you will spend time working on your assignment (and how you will pace yourself. Remember each weekly assignment is due on Tuesday 11:59PM. You must allocate 6 hours in the week. (5 pts)

Non-Mathematics Skills/Soft Skills

1. Study Skills / Think Proactively
2. Time Management / Scavenger Hunt Activity

Time Management / Scavenger Hunt Activity

MTH 1230 Homework 1 **Name** _____

1) Come to my office and get my signature. If I am not there, take a selfie in front of my office and copy and paste the photo here:

2) Go to the Academic Success Center (Bryson Hall 191). There should be one or two people at the desk when you first walk in. Get one of them to Print and sign their name below.

Print:_____ Sign:_____

3) Ask whoever signed question 2 where Kathy Rice's office is. Write down her office number.

4) Find Bryson Hall 164K. Whose office is it?

5) On the other side of the hall from BR 164K is Tyler Maley's office. What is his office number?

Name_____

Academic Success Center (ASC) Math Tutor Schedule
TEC 191

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00 AM					
8:30 AM					
9:00 AM					
9:30 AM					
10:00 AM					
10:30 AM					
11:00 AM		Dhara		Dhara	
11:30 AM	Dhara	Dhara	Dhara	Dhara	
12:00 PM	Dhara	Dhara	Dhara	Dhara	Matt
12:30 PM	Dhara		Dhara		Matt
1:00 PM	Dhara		Dhara		Matt
1:30 PM	Dhara		Dhara		Matt
2:00 PM	Dhara	Chris	Dhara	Chris	
2:30 PM		Chris		Chris	
3:00 PM		Chris		Chris	
3:30 PM					
4:00 PM					
4:30 PM	Tyler	Ryan	Tyler	Ryan	
5:00 PM	Tyler	Ryan	Tyler	Ryan	
5:30 PM	Tyler	Ryan	Tyler	Ryan	
6:00 PM					
6:30 PM					
7:00 PM					
7:30 PM					
8:00 PM					
8:30 PM					
9:00 PM					
9:30 PM					
10:00 PM					

Non-Mathematics Skills/Soft Skills

1. Study Skills / Think Proactively
2. Time Management / Scavenger Hunt Activity
3. Technology Skills

Technology Skills

Excel

Marion Technical College

Math Pathway and College Level Course Goal by Major

Math Pathway	Quantitative Reasoning Pathway	Statistics Pathway	STEM Pathway	
College Level Course Goal	MTH 1230 Quantitative Reasoning	MTH 1240 Statistics	MTH 1245 College Algebra	MTH 2000 Calculus I
Majors	• Associate of Arts* • Associate of Science* • Criminal Justice • Criminal Justice– Probation Officer Option • Law Enforcement • Medical Assistant Technology • Occupational Therapy Assistant	• Associate of Arts* • Associate of Science* • Business Management** • Business Management – Accounting Option** • Business Management – Agribusiness Option** • Business Management – ASAP** • Business Management – Human Resources Option** • Business Management – Marketing Media** • Business Management – Real Estate Option** • Business management – Supply Chain/Logistics Management Option** • Diagnostic Medical Sonography Technology • Health Information Technology – Clinical Health Informatics Track • Health Information Technology – Coding and Reimbursement Track • Human and Social Services • Human and Social Services – Addiction Studies Option • Medical Laboratory Technology • Nursing Technology • Office Administration** • Office Administration – Medical Option** • Physical Therapy Assistant • Radiologic Technology • Respiratory Therapy • Surgical Technology	• Associate of Arts* • Associate of Science* • Business Management** • Business Management – Accounting Option** • Business Management – Agribusiness Option** • Business Management – ASAP** • Business Management – Human Resources Option** • Business Management – Marketing Media** • Business Management – Real Estate Option** • Business management – Supply Chain/Logistics Management Option** • CIT – Cyber Security • CIT – Networking Option • CIT – Software Development Technology • Electrical Engineering Technology • Electrical Engineering Technology– Alternative Energy Option • Mechanical Engineering Technology • Office Administration** • Office Administration – Medical Option** • Robotics & Automation Engineering Technology	• A.A. in Business Transfer Pathway (OGTP) • Associate of Arts* • Associate of Science*

*The Associate of Arts (AA) and Associate of Science (AS) transfer degrees have varying math requirements. The need is based on the transfer accepting institution and program. MTH 1240 Statistics and MTH 1245 College Algebra are typically safe courses and are both approved for the Ohio Transfer Module (OTM).

**These degrees have an option of MTH 1240 Statistics or MTH 1245 College Algebra.

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