

MICHIGAN ASSOCIATION OF COLLEGIATE REGISTRARS AND ADMISSIONS OFFICERS  
(MACRAO)



# Michigan Transfer Agreement Participation Guidelines

**Fall 2019**

*with edits for  
clarification  
February 2020*

# Table of Contents

<b>History and Background</b>	3
<i>Purpose and Guiding Principles</i>	3
<i>Implementation Timeline</i>	3
<i>2019 MACRAO Transfer Agreement Sunset</i>	3
<b>Michigan Transfer Agreement Guidelines</b>	4
<i>Minimum Requirements</i>	4
<i>Participating Institutions</i>	4
<i>Maintenance Review Schedule</i>	4
<i>MTA Compliance</i>	4
<i>Determining MTA Eligible Courses at Sending Institutions</i>	5
<i>MTA Endorsement at Sending Institutions</i>	6
<i>Accepting and Applying the MTA at Receiving Institutions</i>	6
<b>MTA Communication Expectations</b>	6
<b>Appendix A: MTA Mathematics Pathways</b>	8
<i>History and Background</i>	8
<i>Pathway to Calculus</i>	9
<i>Statistics Pathway</i>	10
<i>Quantitative Reasoning Pathway</i>	12

## History and Background

Implemented in 1972, the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Agreement was used for decades by many students to transfer their general education courses from community colleges to universities in Michigan. In 2012 the Michigan legislature included language in the community college appropriations bill calling for revision of the longstanding MACRAO Agreement to improve transferability of courses between colleges and universities in the state. As a result of collaborative work by a representative committee of leaders from community colleges and universities as well as support from MACRAO, the Michigan Community College Association (MCCA) and the Michigan Association of State Universities (MASU), the Michigan Transfer Agreement (MTA) was developed to enhance transferability of general education courses between Michigan colleges and universities.

In fall 2014, the MACRAO organization was charged with facilitating the implementation of the MTA throughout the state. Then an ad-hoc MTA 2.0 Committee from 2014-2016 was convened to address topics that lingered during the initial development. In 2016, several updates were made to the MTA at that Committee's recommendation and are included in these guidelines. In addition, the latter section of this document details updates to the MTA Mathematics pathways. These fall 2019 guidelines replace prior versions of MACRAO's MTA Articulation Handbook. Institutions seeking assistance with the MTA are encouraged to contact the MACRAO College Articulation Committee for support at [michigantransferagreement@gmail.com](mailto:michigantransferagreement@gmail.com).

### *Purpose and Guiding Principles*

The MTA was designed to facilitate the transfer of general education requirements from one institution to another. The 30 credits from the MTA fulfill a majority of the lower level general education requirements of a bachelor's degree, dependent on the academic major. The following principles provided a framework for the development of the MTA:

- Make the agreement simple and easy to understand
- Keep the agreement student-focused
- Regard transfer students the same as native students at the receiving institution
- Acknowledge the distinction between the MTA and degree requirements
- Promote institutional transparency to ensure accurate transfer information for students

### *Implementation Timeline*

The MTA was implemented in fall 2014, replacing the MACRAO Transfer Agreement.

### *2019 MACRAO Transfer Agreement Sunset*

Courses taken fall 2019 semester or later can no longer be used to complete the MACRAO Transfer Agreement. However, if students fulfilled the MACRAO Transfer Agreement requirements prior to fall 2019 semester, they are still eligible to receive the MACRAO stamp from sending institutions at any point in the future. Likewise, receiving institutions that were participating in the MACRAO Transfer Agreement at the time of MTA implementation in fall 2014 semester should continue to accept and apply the MACRAO Transfer Agreement as

intended following the summer 2019 sunset. Additional details related to the MACRAO Transfer Agreement can be found at [www.macrao.org](http://www.macrao.org).

## Michigan Transfer Agreement Guidelines

### *Minimum Requirements*

To fulfill the Michigan Transfer Agreement (MTA), students must complete a minimum of 30-semester hours with a 2.0 (C grade) or better in each course and at least one credit-bearing, college-level course completed at the institution awarding the MTA:

- One course in English Composition
- A second course in English Composition or one course in Communication
- Two courses in Social Sciences from two disciplines
- Two courses in Humanities and Fine Arts from two disciplines, excluding studio and performance classes
- Two courses in Natural Sciences from two disciplines, including one lab experience
- One course in one of three Mathematics Pathways: Pathway to Calculus (includes College Algebra), Statistics, and Quantitative Reasoning (See Appendix A for more detail)

### *Participating Institutions*

The intent of this agreement is that all Michigan public community colleges and universities should participate in the Michigan Transfer Agreement. Private colleges and universities, including tribal institutions, are encouraged to participate as well. In addition, the 2016 MTA 2.0 Committee recommended that all participating colleges and universities consider becoming both MTA senders and receivers. A list of MTA participants is available at [www.mitransfer.org](http://www.mitransfer.org).

All participating institutions must work together closely to ensure a smooth transition for transfer students. At a minimum, this includes:

- Clearly communicating which MTA courses count for endorsement at the sending institution
- Sharing changes to MTA course lists or applicability at receiving institutions
- Working in students' best interest to overcome barriers in earning and applying the MTA

### *Maintenance Review Schedule*

The MACRAO organization will annually review these guidelines and announce changes or updated guidelines at the MACRAO annual conference and to its partnering organizations.

### *MTA Compliance*

Whenever possible, institutions are encouraged to work together in overcoming compliance issues with MTA partners. If additional assistance is needed, institutions should contact MACRAO's College Articulation Committee for support at [michigantransferagreement@gmail.com](mailto:michigantransferagreement@gmail.com).

### *Determining MTA Eligible Courses at Sending Institutions*

- MTA courses must be college-level and above.
- Sending institutions determine which specific courses at their institution are included in the distribution categories. For example, a western civilization course might be designated as either social science or humanities but cannot be used to fulfill both.
- Vocational/occupational courses, including business courses, should not be applied toward the MTA. Any course geared toward a specific career that uses it in the title (e.g., Mathematics for Teachers) is considered an occupational course.
- Sending institutions should work with partner institutions to ensure transferability of MTA requirements. Developing MTA distribution category recommendations together with students' best interests in mind is key. Flexibility is encouraged as students will be transferring to many receiving institutions.
- Physical education courses are not applicable to the MTA.
- When general education or program requirements can also fulfill MTA distribution requirements (sometimes called double-counting), institutions should make this clear to students to maximize their course-taking.
- Notes for specific distribution areas:
  - English/Communications
    - Foreign language courses should not fulfill the communications distribution.
    - If two composition courses are required, consider using the communications course for humanities.
  - Mathematics
    - Discipline-specific mathematics courses should not fulfill any of the MTA mathematics pathways. This includes courses like Math for Elementary Teachers, Statistics for Psychology, etc. These courses may transfer as major requirements but will not fulfill the mathematics distribution.
  - Social Sciences
    - If an institution cross-lists courses in both social sciences and humanities/fine arts, the course can only fulfill one distribution requirement.
  - Humanities and Fine Arts
    - Performance or studio-based courses cannot count toward the humanities distribution. This includes choir, singing, acting, painting, sculpting, drawing, etc.
    - Only one foreign language, regardless of discipline, may apply to the humanities distribution area.
    - If an institution cross-lists courses in both social sciences and humanities/fine arts, the course can only fulfill one distribution requirement.
  - Natural Sciences
    - Science lab courses must occur in a collegiate setting under the direction of an instructor; therefore, workplace skills laboratories are not applicable to the MTA.

### *MTA Endorsement at Sending Institutions*

- It is the sending institutions' responsibility to certify the completion of the MTA by displaying "MTA Satisfied" on official transcripts.
- Sending institutions must indicate how students request an MTA evaluation/audit.
- Students may complete the MTA as part of an associate degree or as a stand-alone endorsement.
- Students should not be required to be enrolled at a sending institution during the semester they request or are awarded an MTA evaluation.
- Students who have already completed an associate degree should be permitted to return later to complete the MTA if desired.
- A student must successfully complete at least one credit-bearing, college-level course (does not have to be an MTA course) at the sending institution to have "MTA Satisfied" endorsed on their transcript.
- Sending institutions can use transfer credit to fulfill MTA requirements as follows:
  - Credits earned at other in-state and out-of-state institutions toward MTA requirements, including credit reverse-transferred from receiving institutions
  - Dual enrollment and early/middle college credit
  - Advanced Placement (AP) credit may be applied to the MTA; however, the receiving institution may determine transferability contingent with its AP policy. Therefore, it is incumbent on sending institutions to advise students accordingly.
  - Additional areas of prior learning are not applicable to the MTA (e.g. International Baccalaureate-IB, College-Level Examination Program-CLEP, DANTES Subject Standardized Test-DSST, ACE).

### *Accepting and Applying the MTA at Receiving Institutions*

- A transfer student must be admitted to a receiving institution to benefit from the MTA.
- Receiving institutions must clearly identify the lower-level general education course requirements that are satisfied by the completion of the MTA.
- Receiving institutions may have upper division general education requirements that are outside the scope of the MTA. These requirements should be applied to all students (native/transfer) and be clearly identified on institutional websites and catalog materials.
- Receiving institutions should not individually evaluate courses to ensure MTA endorsement as this has already been done by the sending institution; however, receiving institutions determine transfer equivalence and applicability of individual MTA courses in meeting major, minor, degree and other graduation requirements. Courses that do not equate with major requirements will apply to the graduation credit requirements at the receiving institution.

## **MTA Communication Expectations**

Through their membership with MACRAO, registrars or institutional designees are responsible for forwarding communications and revised guidelines to appropriate campus contacts to ensure proper dissemination of MTA information to faculty and staff at participating institutions.

Both sending and receiving institutions should include details about the MTA in their catalogs and maintain institutional websites with details about their MTA participation, including the

most appropriate campus office for MTA inquiries. As new courses are developed or programs are modified at both sending and receiving institutions, implications to the MTA should be considered and MTA course lists and policies should be updated accordingly and communicated on public websites and between partner institutions. Training should be available to new and existing faculty and staff including any updates to MTA eligible courses, the MTA endorsement, or how the MTA is applied at the receiving institution.

Sending institutions should post information about the MTA in their catalog and on their website. This information should include an explanation of the policies and processes for completing the MTA, steps for requesting the MTA evaluation, and a list of approved courses used to satisfy the MTA distributions.

Receiving institutions should provide information on which general education requirements are covered by the MTA and which upper division requirements may remain. Whenever possible, receiving institutions should include MTA details in transfer guides and articulation agreements and ensure these documents are available to the public.

Links to both sending and receiving institutions' MTA webpages are compiled at [www.mittransfer.org](http://www.mittransfer.org) or [www.macrao.org](http://www.macrao.org). Participating institutions should ensure these links and other transfer planning information provided on the site are continuously up-to-date.

## Appendix A: MTA Mathematics Pathways

### *History and Background*

Coinciding with the development of the MTA, in 2013 a MTA Mathematics task force was created including representatives from public community colleges and universities as well as an individual from an independent college. These individuals were selected in partnership between the leadership of the Michigan Mathematical Association of Two-Year Colleges (MichMATYC), the Michigan Section of the Mathematical Association of America (MAA), as well as the Michigan Community College Association (MCCA) and Michigan Association of State Universities (MASU). The charge of this group was to articulate the levels and types of competencies for three MTA Mathematics pathways (Pathway to Calculus, Statistics, and Quantitative Reasoning) at a sufficient rigor to allow the corresponding courses to transfer. Between December 2013 and March 2014, the MTA Mathematics Task Force circulated the initial MTA Mathematics proposal for statewide input, refined the requirements, and submitted final recommendations to the legislature in March 2014 with campuses implementing the MTA starting in August 2014.

In 2016, the work of the MTA Mathematics Task Force was extended when the Right Math at the Right Time (RM@RT) Task Force was formed to strengthen the implementation of mathematics pathways across Michigan's postsecondary institutions. The RM@RT Task Force and associated working groups published a set of recommendations for adoption in [October 2016](#) and set about the work to further refine the descriptions and learning objectives for each MTA Mathematics pathway from 2016-2018. This work was done in conjunction with a [grant from the Charles A. Dana Center](#). In [January 2018](#), the RM@RT Task Force submitted another report addressing previously noted mathematics challenges in Michigan and outlining strategies to overcome these challenges, including agreeing upon common learning outcomes to ease transfer of courses in the MTA Mathematics pathways. Today, the RM@RT continues to work under the umbrella of the Michigan Transfer Steering Committee which oversees state-level transfer initiatives. In January 2019, the RM@RT Task Force endorsed the guidelines that follow for each of the three MTA Mathematics Pathways.



### *Pathway to Calculus*

For students proceeding to programs that specifically require background in algebra, particularly STEM (science, technology, engineering, and mathematics) programs.

#### *Statement on Prerequisites:*

- ✓ The Pathway to Calculus will satisfy the MTA requirements for general education. At a minimum, a course in College Algebra will satisfy the requirement in this pathway.
- ✓ Students will be expected to apply advanced algebra skills similar to those taught [in high school algebra II in the Michigan Merit Curriculum](#) or in intermediate algebra.
- ✓ This course must be beyond Intermediate Algebra.

#### *Topics/content that should be a part of the first college-level course in this pathway:*

The MAA Committee on the Undergraduate Program Mathematics (CUPM) established these suggested course objectives for college algebra and trigonometry in its [2015 report](#).

1. Demonstrate knowledge of functions, including absolute values, polynomials (including polynomials of degree greater than 2 and the fundamental theorem of algebra), rational functions, logarithms, exponential functions, and inverse functions.
2. Apply algebraic techniques in solving linear, quadratic, logarithmic, and exponential equations
3. Analyze equations of circles and properties of circles such as angle measure in both degrees and radians.
4. Evaluate cosine, sine, and tangent for common angles (in all quadrants).
5. Sketch trigonometric functions and state their domains.
6. Recall and apply basic trigonometric identities such as the double angle, half-angle, and addition formulas.
7. Graph functions by transformation rather than plotting points.
8. Topics such as sequences and series may also be included.

#### *Descriptors to consider for this pathway:*

- ✓ A College Algebra course, possibly in conjunction with a separate course on trigonometry, would qualify a student to take a calculus course.
- ✓ Many students in this pathway will have more advanced mathematics courses required for their program; if a college-algebra-type course is a prerequisite for a more advanced course, then students who are ready to begin with that advanced course will be able to use it for meeting the MTA mathematics requirement.
- ✓ This course should provide a strong foundation for critical mathematical thinking.

## Statistics Pathway

For students proceeding to programs in business or social sciences.

### *Statement on Prerequisites:*

- ✓ The Statistics Pathway will satisfy the MTA requirements for general education.
- ✓ For success in the statistics pathway, students will be expected to apply basic algebra skills similar to those taught [in high school algebra I in the Michigan Merit Curriculum](#) or in beginning algebra.

### *Topics/content that should be a part of the first college-level course in this pathway:*

- ✓ Probability, descriptive statistics, and inferential statistics, including hypothesis testing, p-values, confidence intervals, and linear regression. The course should incorporate both formula-based and technology-based approaches to statistics.
- ✓ The Statistics Working Group of the RM@RT Task Force has produced fourteen essential and three optional outcomes. Courses should include at least 80% of these outcomes.
  1. Demonstrate understanding of the basic principles of data collection, observational study, and experimental design. This may include (but is not limited to) topics such as randomness, sampling error, sampling techniques, bias, blinding, and types of data.
  2. Construct and interpret graphical and tabular displays of univariate data. These displays may include (but are not limited to): frequency distributions, pie charts, boxplots, stem plots, histograms.
  3. Summarize distributions of univariate data using measures of central tendency, measures of dispersion, and measures of location.
  4. Compare multiple data sets with graphical displays and numerical measures.
  5. Perform basic probability computations. These may include (but are not limited to): the addition rule, the multiplication rule for independent events, and the complement rule.
  6. Solve problems by applying appropriate probability distributions, which may include (but are not limited to) discrete, binomial, and normal probability distributions.
  7. Use the Central Limit Theorem to model sampling distributions and compute probabilities based on sampling distributions.
  8. Analyze bivariate quantitative data. This includes (but is not limited to), generating and interpreting  $r$ - and,  $r^2$ -values, scatterplots, and the least-squares regression lines for bivariate data.
  9. Construct and interpret confidence intervals of proportion or mean for one population.
  10. Construct and interpret confidence intervals for the difference of proportions or means for two populations.
  11. Perform hypothesis tests for the means and proportions for one population. This includes interpreting p-value, type I and type II errors, and statistical and practical significance.
  12. Perform hypothesis tests for the difference of proportions or means for two populations. This includes interpreting p-value, type I and type II errors, and statistical and practical significance.
  13. Interpret and apply output from a statistical software package and/or a graphing utility.
  14. Interpret and apply appropriate statistical techniques and concepts to real-life data and situations in order to make decisions and/or draw conclusions.

### **Introductory Statistics Optional Outcomes:**

15. Perform intermediate probability computations. These may include (but are not limited to): the multiplication rule for dependent events, conditional probability, and Bayes Theorem.
16. Analyze bivariate qualitative data presented in two-way tables and interpret relationships between categorical variables. This may include (but is not limited to) computing probabilities, identifying lurking variables, explaining Simpson's Paradox, and conducting appropriate chi-square tests.

17. Perform more advanced hypothesis tests such as the goodness-of-fit test, independence test, and ANOVA.

*Descriptors to consider for this pathway:*

- ✓ This course must go beyond descriptive statistics.
- ✓ The course can be algebra-based or calculus-based.
- ✓ The course must be taught and organized by the Mathematics (or Statistics) department or be cross-listed as a Mathematics (or Statistics) course.
- ✓ The course should be conceptually driven from a Mathematics perspective.

*Guidelines from the American Statistical Association:*

- ✓ The best thinking about introductory statistics courses is that students should focus on statistical thinking. The Guidelines list goals of the statistics course, which form the minimum expectations for an MTA statistics course.

Link: [http://www.amstat.org/education/gaise/GAISECollege\\_Goals.pdf](http://www.amstat.org/education/gaise/GAISECollege_Goals.pdf)

## *Quantitative Reasoning Pathway*

For students proceeding to programs not requiring statistics or calculus.

### *Statement on Prerequisites:*

- ✓ The Quantitative Reasoning Pathway will satisfy the MTA requirements for general education.
- ✓ For success in a quantitative reasoning course, students will be expected to apply basic algebra skills similar to those taught [in high school algebra I in the Michigan Merit Curriculum](#) or in beginning algebra.

### *Topics/content that should be a part of the first college-level course in this pathway:*

- ✓ Mathematical modeling and the use of reasoning to choose between competing models
- ✓ Numeric, symbolic, and graphical methods to handle a variety of applications.
- ✓ Topics could include but are not limited to number sense and estimation, linear and non-linear models, financial models, symbolic logic, networks and graphs, probability and counting, statistical reasoning, voting theory, geometric models, similarity and scaling, and game theory.

### *Descriptors to consider for this pathway:*

- ✓ Building on the [Association of American Colleges & Universities Quantitative Literacy Rubric](#) (AACU QLR) excerpted below, this course should help students communicate mathematical and/or statistical information symbolically, visually, and/or numerically.
- ✓ This course should also help students communicate a quantitative argument in writing.

### *Outcomes adapted from the AACU QLR Guidelines:*

1. **Interpretation:** Ability to explain information presented in mathematical forms (e. g. equations, graphs, diagrams, tables, words).
2. **Representation:** Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words).
3. **Calculation:** Ability to identify and perform appropriate calculations and communicate results.
4. **Application / Analysis:** Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis.
5. **Communication:** Expressing quantitative evidence in support of the argument or purpose of the work (in terms of what evidence is used and how it is formatted, presented, and contextualized).