## General Notes

- A grade of C- or better is required for a course to transfer.
- A bachelor’s degree requires a minimum of 124 semester hours of credit. CMU will accept community college transfer credits beyond the recommended 64 semester hours; however students will need to complete a minimum of 60 semester hours from an accredited 4-year-degree granting institution. A minimum of 40 hours must be completed at the 300 level or above. A minimum of 30 semester hours of credit must be earned from CMU.
- The University Program Requirements and competencies may be fulfilled by students who satisfy the MACRAO Agreement or the MTA
- Students are required to meet CMU Competency Requirements prior to reaching 56 credit hours. Competency requirements consist of: two Written English (composition) courses, one Oral English (communication) course, and one Mathematics course be completed with a grade of “C” or above.

Any remaining required and elective courses for a bachelor’s degree will be selected in consultation with an academic advisor to ensure that CMU degree requirements are being met.

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### MACRAO TRANSFER AGREEMENT

<table>
<thead>
<tr>
<th></th>
<th>MICHIGAN TRANSFER AGREEMENT (MTA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>will be replaced by the Michigan Transfer Agreement (MTA) effective prior to Fall 2014.</strong></td>
<td><strong>The MTA replaces the MACRAO Agreement effective Fall 2014 and beyond.</strong></td>
</tr>
</tbody>
</table>

This distribution of courses fulfills the MACRAO Transfer Agreement and will satisfy the University Program portion of the CMU bachelors’ degree for students who started following the MACRAO Transfer Agreement at their Michigan community college **prior to Fall 2014**. Please see your community college Registrar and request to have your transcript reviewed and designated as “MACRAO Satisfied”. *Students may elect to follow the MTA.*

### English Composition: 6 Semester Credits

- Two Written Communication courses

### Science/Math: 8 Semester Credits

- One Science course with a lab
- Intermediate and/or College Algebra, and/or Geometry

### Humanities: 8 Semester Credits

- A minimum of 8 hours from at least two different disciplines

### Social Sciences: 8 Semester Credits

- A minimum of 8 hours from at least two different disciplines

Minimum hours required to complete MACRAO Agreement: **30**

An official transcript that is designated as being “MACRAO Satisfied” or “MTA Satisfied” will have satisfied the University Program portion of the General Education Requirements. A portion or all of the Competency Requirements may also be satisfied by an official transcript designating “MACRAO Satisfied” or “MTA Satisfied”.

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### MICHIGAN TRANSFER AGREEMENT (MTA)

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>This distribution of courses fulfills the MTA and will satisfy the University Program portion of the CMU bachelors’ degree at CMU for students who begin attending a Michigan community college <strong>beginning Fall 2014.</strong> Please see your community college Registrar and request to have your transcript reviewed and designated as “MTA Satisfied”. Only courses with a grade of “C” or better may be applied to the MTA requirements.</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Communication: 2 Courses

- One Written Communication course
- One Written or Oral Communication course

### Natural Sciences: 2 Courses

- Two natural science courses from two different disciplines. One course must be a lab science course.

### Humanities and Fine Arts: 2 Courses

- Two humanities courses from two different disciplines (excluding studio and performance classes)

### Social Sciences: 2 Courses

- Two social science courses from two different disciplines

### Mathematics: 1 Course

- One entry-level college course as defined by the three pathways.

Minimum hours required to meet MTA: **30**

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### Central Michigan Writing Intensive & Quantitative Reasoning Requirements

**Effective Fall 2014.** CMU has implemented a Writing Intensive (12 semester hours) and Quantitative Reasoning requirement (3 semester hours). Please note that these requirements are for both transfer and incoming Freshman students.

Any Michigan community college student transferring to CMU with their transcript designated as “MACRAO Satisfied” or “MTA Satisfied” will be given six (6) semester hours of Writing Intensive course work. The remaining six (6) semester hours **must** be completed at CMU. The Quantitative Reasoning requirement may be satisfied through transfer credit.

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### General Notes

- A grade of C- or better is required for a course to transfer.
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- The University Program Requirements and competencies may be fulfilled by students who satisfy the MACRAO Agreement or the MTA
- Students are required to meet CMU Competency Requirements prior to reaching 56 credit hours. Competency requirements consist of: two Written English (composition) courses, one Oral English (communication) course, and one Mathematics course be completed with a grade of “C” or above.

Any remaining required and elective courses for a bachelor's degree will be selected in consultation with an academic advisor to ensure that CMU degree requirements are being met.
**Delta College**

**GEOGRAPHY – GIS CONCENTRATION**

Associate In Science

**GENERAL EDUCATION REQUIREMENTS (30 – 32)**

<table>
<thead>
<tr>
<th>Component</th>
<th>CMU Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I (3)</td>
<td>ENG 101</td>
</tr>
<tr>
<td><strong>ENG 112 College Composition II (3)</strong></td>
<td>ENG 201</td>
</tr>
</tbody>
</table>

**Group I Humanities: (6 – 8)**

Select one of the following:

- POL 104 American Politics w/ Project (4)
- HIS 237 History of Michigan w/ Project (3)

**MACRAO requires at least 8 credits from two subjects**

MTA requires two courses from two subjects

**Group II Social Sciences: (8)**

Select one of the following:

- CPS 180 Principles of Computer Programming (3)
- CPS 105 Information Technology Programming I (3)

**MACRAO requires at least 8 credits from two subjects**

MTA requires two courses from two subjects

**Group III Natural Sciences: (24)**

<table>
<thead>
<tr>
<th>Component</th>
<th>CMU Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 100 Principles of Biology (4)</td>
<td>GEO 101</td>
</tr>
<tr>
<td>GEO 103 Intro to Meteorology (4)</td>
<td>GEO 201</td>
</tr>
<tr>
<td>GEO 111 Physical Geography (4)</td>
<td>GEO 105 &amp; Lab</td>
</tr>
<tr>
<td>GLG 111 Oceanography (4)</td>
<td>GEL 101 &amp; 102</td>
</tr>
<tr>
<td>PHY 111 General Physics I (4)</td>
<td>GEL 205 &amp; Lab</td>
</tr>
</tbody>
</table>

**MACRAO requires at least 8 credits from one lab science course.**

MTA requires two courses from two subjects. At least one course must be a lab science course

**Mathematics: (8)**

<table>
<thead>
<tr>
<th>Component</th>
<th>CMU Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 121 Plane Geometry or higher (4)</td>
<td>MTH 106</td>
</tr>
<tr>
<td>MTH 208 Elementary Statistics (4)</td>
<td>STA 282QR</td>
</tr>
</tbody>
</table>

**Additional Coursework (10)**

<table>
<thead>
<tr>
<th>Component</th>
<th>CMU Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 180 Advanced (C++) Programming (4)</td>
<td>CPS 180</td>
</tr>
<tr>
<td>GLG 112 Earth History (4)</td>
<td>GEL 201 &amp; Lab</td>
</tr>
</tbody>
</table>

Select one of the following:

**Option 1.** LW 220 Lifelong Wellness (1)

**Option 2.** Any 2 credit LW course (2)

**Central Michigan University**

**GEOGRAPHY MAJOR – GIS CONCENTRATION**

Bachelor of Science (B.S.) Plan B

**Core Courses (12 hours)**

- GEO 105 Physical Geography (3)
- GEO 120 Environmental Geography (3)
- GEO 121 Cultures of the World (3)
- GEO 203QR Intro to Geographic Information Science (3)

**Required Courses I (10 hours)**

- GEO 303 Geographic Information Systems I (3)
- GEO 305 Remote Sensing of the Environment (3)
- GEO 404 Global Positioning System (1)
- STA 382QR Elementary Statistical Analysis (3)

**Required Courses II (3 hours)**

Select one of the following:

- CPS 110 Information Technology Programming I (3)
- CPS 180 Principles of Computer Programming (3)

**Electives (15 hours)**

Select from the following in consultation with and approval of GISci advisor. A maximum of 3 hours of GEO 591 and/or GEO 597 may be applied to the concentration.

- GEO 405 CAD Mapping for GIS (3)
- GEO 503 Geographic Information Systems (3)
- GEO 508 Digital Remote Sensing 3 (3)
- GEO 512 Quantitative Methods for Spatial Analysis (3)
- GEO 513 Geographic Information Sys for Soc. Sci. (3)
- GEO 516 Advanced Remote Sensing Systems (3)
- GEO 553 GIS Operations and Practices (3)
- GEO 575 Special Studies in Geography (1-6)
- GEO 591/ESC 591 Internship (1-12)
- GEO 597 Independent Study (1-9)

**Area Requirements (12)**

- Humanities (6)
- Social Sciences (6)

**Minimum Totals for Graduation: 124**

See page one for additional graduation requirements.

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*CMU competency course requires a grade of "C" or better to satisfy the requirement.

**Preferred course selection and a required graduation requirement.

MTA and MACRAO applicable courses require a grade of "C" or better to satisfy the requirement.

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12/2014 WD/Delta