GRACE PROJECT

GIS/T Resources & Applications for Career Education

Opportunities for All Students

The GRACE project brings geospatial tools to classroom teachers and students. Geospatial technologies (GIS, GPS - global positioning system, and RS - remote sensing), and the analytical tools for using these systems wisely, now play a fundamental role in the provision of emergency services, transportation and urban planning, environmental hazard management, resource exploitation, military operations, and the conduct of relief operations. In the future, geographical tools and techniques will be of vital importance to the effort to monitor, analyze, and confront the unprecedented changes that are unfolding on Earth’s surface. Because the uses for GIS/T are so widespread, the market is growing almost 35 percent annually, with the commercial subsection expanding at the rate of 100 percent each year. National Research Council (2010), Understanding the changing planet: strategic directions for the geographic sciences. The Committee on Strategic Directions for the Geographic Sciences in the Next Decade, Division on Earth and Life Studies, National Research Council. The National Academies Press, Washington, DC, USA, p 172.

Support Three Levels of GIS/T Student Experiences

Teachers of students in grades 9-11 involved in the GRACE Project will be able to support students as they learn to use GIS/T to explore questions in their world through these three levels: Explorer, Investigator, and Intern. The professional development activities for teachers are tightly integrated with this progressive learning process so that adequate instructional and technical mentoring and support will be provided to encourage students to engage in GIS/T activities at each level.

The Explorer level introduces students to GIS/T through the ArcGIS Online Portal and through demonstrations developed with online GIS/T tools to build students’ basic understanding of GIS/T as well as pique student curiosity.

The Investigator level leverages students’ curiosity and interest and prepares them to work with GIS/T lesson modules that are designed to enhance science and engineering practices of the Michigan Science Standards as well as using GIS/T in a variety of curriculum areas.

The Intern level provides students with professional GIS/T training and opportunities to gain work experiences in local organizations as Interns. Students apply the skills they’ve acquired through the first two phases, working within their communities to gain job skills and solve authentic problems.
**TEACHER RESPONSIBILITIES:** Complete an Explorer and an Investigator Online training course (five units in each of the courses) including scheduled web-based conversations with the GRACE Team and other GRACE Teachers. Demonstrate implementation of three (3) Explorer Lessons, five (5) Investigator Lessons and support Student Intern learning experiences within a two year period. Have access to current technologies to implement project lessons and support student learning.

### Cohort #4 Exclusively Online–Starting June 7, 2016; Completing January 3, 2017

<table>
<thead>
<tr>
<th><strong>PHASE 1 PROFESSIONAL DEVELOPMENT</strong></th>
<th><strong>PHASE 2 PROFESSIONAL DEVELOPMENT</strong></th>
<th><strong>INTERN SUPPORT FOR YOU AND YOUR STUDENTS</strong></th>
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<tbody>
<tr>
<td>Engage in a 5-unit ONLINE course focused on the <strong>Explorer Lesson</strong> model and resources including scheduled web-based conversations with other GRACE Teachers over a 3-month timeline.(^1)</td>
<td>Engage in a 5-unit ONLINE course focused on the <strong>Investigator Lesson</strong> model and resources including scheduled web-based conversations with other GRACE Teachers over a 3-month timeline.(^2)</td>
<td>Support provided for you and your Student Interns from Geomentors.</td>
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<tr>
<td>Receive access to over 30 GIS-enabled <strong>Earth Science</strong> and <strong>Social Studies</strong> Explorer Lessons for potential classroom implementation.</td>
<td>Receive access to a FREE collection of student GIS/T projects and technical training courses for you or your students’ use.</td>
<td>Support further training of your Intern Students with free available coursework to extend their GIS/T skills.</td>
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<tr>
<td>Earn up to 30 SCECHs for MDE Certification requirements based on completion of online course activities.*</td>
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<td>Access to GIS/T professionals from community and state-wide agencies.</td>
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<tr>
<td>Compensation of $500 for course completion and lesson (3) implementation.</td>
<td>Compensation of $600 for course completion and lesson (5) implementation.</td>
<td>Attend a one-day campus visit to a nearby university for you and your students.</td>
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*If you prefer, EMU graduate credit is also available, but existing tuition and costs will apply.

\(^1\) **Course activities for Cohort #4 will begin on Tuesday, June 7, 2016 and end on August 30, 2016.**

\(^2\) **Course activities for Cohort #4 will begin on Tuesday, October 4, 2016 and end on January 3, 2017.**

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**To Register for the GRACE Project:** [www.nsfgrace.net](http://www.nsfgrace.net)

**Questions:** Allison Hoff: ahoff@emich.edu; Lishen Mao: lmao@emich.edu

**Phone:** (734) 487-8487