Meaning of the Geology MS Degree	Responses
This section is about the structure of the degree, its components and its expectations. 1. Describe the generic degree and what makes your degree at CPP distinct. 2. Describe how the degree aligns with the university vision, values, and outcomes. 3. Describe your entering students' abilities and your graduates' culminating skills. 4. Describe the curricular and co-curricular components that you have put into place to achieve your expectations.	*1. Our Master's program in Geology prepares graduates for employment in all fields of Geological Science, and teaching at secondary and community college levels. Emphasis is placed on applied skills demanded by potential employers. Fundamental to the program is a thorough understanding of basic geologic principles rooted in field and laboratory experiences. The geologic framework provided by the M.S. degree will enable graduates to meet the intellectual challenges of their professional or academic careers and assume leadership roles in their profession. The program is sufficiently flexible to meet student interests in the application of geology to the solution of hydrologic, geophysical, environmental, geoengineering, or resource extraction problems facing our society. As a polytechnic university we are dedicated to the "Learn by Doing" philosophy and stress practical interactions between students, faculty and industry/government professionals.* *2. See attached matrix linking University Core Values and Learning Outcomes to Geology BS Learning Objectives* ***3. Expectations for Entering Students*** Unconditional admission to the program is contingent on the following expectations: • A Bachelor's degree in Geology or a closely related discipline (e.g., Geotechnical Engineering, Hydrology, Geophysics, Environmental Science) from an accredited institution, with a minimum grade-point average of 3.0 in Earth Science courses, and a 2.5 grade-point average in related science and mathematics courses; • Satisfactory performance on the Graduate Record Examination Aptitude Test with an expected score in the 50th percentile or better on the verbal and quantitative components; • Two letters of recommendation; • A one-page personal statement of interest, including research and career aspirations; • A minimum of 36 quarter units of undergraduate Earth Science-related coursework is required to receive unconditional acceptance into the Master's program. • Availability of faculty supervisor with expertise consistent with the applicants stated interests

	Culminating Skills *To achieve the learning outcomes described below, students are required to complete course work (GSC 400 and GSC 500 level classes) and Thesis research units (GSC 600 level classes) at a minimum grade point average of 3.0. Requirements for the MS degree include:* • *A minimum of 45 quarter units; at least 31 units must be in 500-600 level courses* • *A grade point average of 3.0 (B) or better must be maintained in all upper division undergraduate and graduate classes.* • *The Graduation Writing Test (GWT) must be passed prior to Advancement to Candidacy.* • *An acceptable thesis must be completed and submitted in accordance with university regulations.* • *An oral thesis defense must be successfully completed.* *4. The Geology MS curriculum balances classroom theory, modern technology and laboratory application with field experiences that incorporate industry-standard equipment, and offers opportunities for faculty-mentored research. We have a strong record of obtaining state-of the art equipment through faculty research grants. Students gain valuable and practical skills utilizing such equipment individually and in teams. Our applied approach to learning and career training is directed by faculty who can provide personal guidance specific to each student. Much department effort goes toward recruiting and retaining the highest quality faculty who are current in their field.*
Quality of the Degree	**Responses**
This section is about the alignment of the degree program with the expectations. 5. Describe (don't just list) your learning outcomes, the levels that you have set for graduates, and how they align with your expectations. 6. Describe how the curricular and co-curricular	*5. Below we link specific Geology MS to our seven learning outcomes for the degree. Expectations for achieving these outcomes, and corresponding course grades are described in the Expanded Course Outlines for individual courses.* **SLO 1)** Participate effectively in seminar-style discussions of current Geoscience topics. *GSC 501, 534, 545, 551, 564, 568, 575, 599* **SLO 2** Synthesize details of published Geoscience literature and present oral synopsis to graduate peers and faculty. *GSC 410, 501, 534, 545, 551, 564, 568, 575, 599* **SLO3)** Utilize contemporary equipment, laboratory techniques and computer technology to solve geologic problems. *GSC 401, 411, 432, 450, 503L, 534, 545, 551, 564, 568, 575, 599*

components of the program help students to meet the expectations and learning outcomes.	**SLO 4)** Develop and present scientific proposal for Master's thesis. *GSC 600* **SLO 5)** Conduct original research related to Master's thesis. *GSC 694* **SLO 6)** Write Master's thesis document. GSC 696 **SLO 7)**Defend results of Master's thesis research with a formal oral presentation to graduate peers and thesis committee. *GSC 696* *6. Learning outcomes are met through classroom theory, modern technology and laboratory application with field experiences that incorporate industry-standard equipment obtained through faculty research grants. Students gain valuable and practical skills utilizing such equipment individually and in teams. Faculty-mentored research projects provide additional capstone experiences. Our applied approach to learning and career training is directed by faculty who can provide personal guidance specific to each student.*
Integrity of the Degree **This section is about the assurance that the degree is meeting the expectations.**	**Responses**
7. Describe the assessment that you have put into place to measure whether the curricular and co-curricular components are meeting their purposes. 8. Describe the assessment that you have put into place to measure to what extent the program is achieving its expectations and learning outcomes at the desired levels. 9. Describe the feedback that you collect, internally and externally, to support your assessment.	*7. The Geology MS program is still in its infancy (Year 3) so we do not have a formal Assessment Plan in place at this time. Most efforts have been directed toward implementing the program, developing course content, teaching the program, focusing graduate students on their research, and working out the many logistical glitches related to course scheduling, admissions, fee structure, financial aid, and academic advising. We have learned much from this process and will build on our experiences during the ongoing semester conversion* *8. Integrity of the Geology MS program is gauged through a series of assessment tools. Individual faculty members use observations analyzed through embedded exam questions, pre-test/post-test results, and rubrics applied to student presentations and homework sets to evaluate student achievement of learning outcomes. Those tools that have been especially informative include:* • *Mapping of specific GSC courses against Program Learning Outcomes* • *Development of rubrics for the Master's thesis presentations (GSC 600 and GSC 696) and other courses requiring student presentations (GSC 501, 534, 545, 551, 564, 568, 575, 599)* • *Pre-test / Post-test analyses conducted in several classes* • *Advising efforts that include one-on-one advising of*

	each MS student each quarter. New graduate contract worksheets were developed in 2014-15 that enable students to track student progress toward degree. These advising efforts allow faculty to make suggestions for efficient scheduling, and rectify academic performance problems before they become untenable. • *Constructive discussions between MS thesis committee members and students during MS thesis proposals (GSC 600) and MS thesis defenses (GSC 696)* • *Tracking of MS graduate placement in industry jobs or PhD programs. So far 100% of our MS graduates are gainfully employed or have moved on to very prestigious PhD institutions.* *9. Each faculty member analyses data yielded by various assessment tools to gauge student achievement and knowledge gaps that can be addressed in future course offerings. Feedback from employers that hire our MS graduates indicates that students perform at a high level in the workplace. Interactions with alumni at our annual reunion are also informative.* ***Additional evidence of our program success and integrity*** *Although no formal assessment data has been tabulated and analyzed, we are pleased with our students' ability to meet the learning outcomes listed above. One important measure of the program success is that 5 out of 9 of our inaugural class graduated in two years; 2 additional students graduated during Winter and Spring quarters of 2015. The Geology MS program is rapidly growing and on track for continued success.*

M.S. in Geological Sciences	Program Outcomes (posted at http://www.cpp.edu/~sci/geological-sciences/about/academic-goals.shtml)						
University Core Values and Learning Outcomes	**1. Participate effectively in seminar-style discussions of current Geoscience topics**	**2. Synthesize details of published Geoscience literature and present oral synopsis to graduate peers and faculty**	**3. Utilize contemporary equipment, laboratory techniques and computer technology to solve geologic problems**	**4. Develop and present scientific proposal for Master's thesis**	**5. Conduct original research related to Master's thesis**	**6. Write Master's thesis document**	**7. Defend results of Master's thesis research with a formal oral presentation to graduate peers and thesis committee**
Global Citizenship to understand the responsibilities of being a global citizen and the role of civic engagement in fostering a democratic society	X						
Ethical Understanding To understand and apply ethical considerations in professional, personal and social life	X						
Interpersonal Skills to apply teamwork and leadership skills to achieve common goals in a diverse multicultural environment	X	X			X		X
Communication Skills to apply verbal, written, visual and listening skills to communicate persuasively and coherently to diverse audiences	X	X		X		X	X
Critical Thinking to think clearly and logically, analyze and interpret information, evaluate ideas, and draw inferences through reasoning	X	X	X	X	X	X	X
Problem Solving to identify, formulate, assess, investigate, evaluate and solve problems effectively and creatively		X	X	X	X	X	X
Quantitative Reasoning to apply quantitative reasoning to understand, analyze and explain evidence		X	X	X	X	X	X
Integrating and Transferring Learning to make connections across disciplines and between current and new knowledge; and to apply their knowledge in professional and community life	X	X				X	X
Lifelong Learning to exercise Cal Poly Pomona's learn-by-doing approach in real-world situations, and as a basis for lifelong learning	X		X	X		X	X
21st Century Literacies to apply 21st century literacies including information, quantitative and scientific, to locate, evaluate, use and communicate among a wide variety of sources and tools	X	X	X	X	X	X	X
Liberal Learning to demonstrate knowledge and appreciation of the physical and natural world, and of the development and legacies of diverse world cultures	X					X	X

Intentional Learning to employ self-knowledge of the social and cognitive factors influencing their learning, and engage in ongoing reflection and exploration for the purpose of personal development	**X**						**X**
Disciplinary Learning to apply fundamental information, concepts, theories and methods in their principal disciplines; and to successfully integrate, adapt and apply their disciplinary knowledge	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Global Leaders Global Citizenship; Ethical Understanding; Interpersonal Skills; Communication Skills	**X**						
Integrative Thinkers Critical Thinking; Problem Solving; Quantitative Reasoning; Integrating and Transferring Learning	**X**						
Active Learners Lifelong Learning; 21st Century Literacies; Liberal Learning; Intentional Learning	**X**						
Practitioners Disciplinary Learning	**X**	**X**	**X**	**X**	**X**		**X**