

# GRADUATE EDUCATION

Graduate Education  
Science Bldg. (52), Room E47  
Phone: 805.756.2328; Fax: 805.756.2299

## Prospective Graduate Students

Cal Poly offers over 50 master's degree programs covering all of our six colleges:

- College of Agriculture, Food and Environmental Sciences (CAFES)
- College of Architecture and Environmental Design (CAED)
- Orfalea College of Business (OCOB)
- College of Engineering (CENG)
- College of Liberal Arts (CLA)
- College of Science and Mathematics (CSM) & School of Education (SOE)

A complete listing of our graduate programs can be found on the Graduate Programs site at <http://grad.calpoly.edu/>.

## Application for Admission

An application for admission to a Master's program is available at [www.calstate.edu/apply](http://www.calstate.edu/apply) (<http://www.calstate.edu/apply>). The CSU Apply system allows students to browse through general information about CSU's twenty-three campuses, view multimedia campus presentations, send and receive electronic responses to specific questions, and apply for admission and financial aid.

All graduate and post-baccalaureate applicants (e.g., master's degree applicants, those seeking educational credentials, or graduate certificates) must file a complete graduate application as described in the graduate and post-baccalaureate admission materials at <https://admissions.calpoly.edu/>. Applicants who completed undergraduate degree requirements on a CSU campus and graduated the preceding term are also required to complete and submit an application and pay the \$55 nonrefundable application fee.

The CSU advises prospective students that they must supply complete and accurate information on the application for admission, residence questionnaire, and financial aid forms. Further, applicants must submit authentic and certified transcripts of all previous academic work attempted. Official transcripts must also be sent directly from the issuing institution to the Cal Poly Admissions Office. Failure to complete, accurate, and authentic application documents may result in denial of admission, cancellation of academic credit, suspension, or expulsion (Section 41301, Article 1.1, Title 5, *California Code of Regulations*).

Applicants for graduate programs should contact the Cal Poly Admissions Office (<https://admissions.calpoly.edu/applicants/graduate>) for program specific deadlines. All Cal Poly graduate programs require applicants to complete the GRE. However exceptions may be granted to specific programs; check with the Graduate Education website for requirements for each program <http://grad.calpoly.edu/>.

Applicants who earned a Cal Poly bachelor's degree within the last seven years will be granted an exemption from the GRE requirement; however, specific programs may waive this exemption and require the GRE for all applicants. Please keep in mind that any applicant (external or Cal Poly undergraduate) with an undergraduate GPA of 2.5 or lower will be required to take the GRE and demonstrate results that are at the

50-percentile or higher (Quant, Verbal & Writing) to be considered for admission.

## Admission to Professional Certificates

All professional certificate applicants must file a complete application by following the links provided on the Graduate Education website (<http://www.grad.calpoly.edu/program/featured.html>) for each certificate. Applications can be completed anytime through the year. Applicants must supply complete and accurate information along with un-official transcripts documenting academic work associated with their bachelor's degree. Failure to file complete, accurate, and authentic documents may result in denial of admission, cancellation of academic credit, suspension, or expulsion (Section 41301, Article 1.1, Title 5, *California Code of Regulations*).

Contact the Cal Poly Extended Education Office (<http://www.extended.calpoly.edu>) if you have questions about the application process. Extended Education does not guarantee that Professional Certificate courses will be offered unless adequate enrollments are realized.

## Graduate and Postbaccalaureate Admission Requirements

Graduate and post-baccalaureate applicants may apply for a degree objective, a credential or graduate certificate objective. Depending on the objective, the CSU considers an application for admission as follows:

- **General Requirements** – The minimum requirements for admission to graduate and post-baccalaureate studies at a California State University campus are in accordance with university regulations as well as Title 5, chapter 1, sub-chapter 3 of the *California Code of Regulations*.
- Specifically, a student shall at the time of enrollment:
- have completed a four-year college course of study and hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association, or shall have completed equivalent academic preparation as determined by appropriate campus authorities;
- be in good standing at the last college or university attended;
- have attained a grade point average of at least 2.5 (A = 4.0) in the last 60 semester (90 quarter) units attempted or have earned a grade point average of at least 2.5 on the last degree completed by the candidate; and
- satisfactorily meet the professional, personal, scholastic, and other standards for graduate study, including qualifying examinations, as appropriate campus authorities may prescribe. In unusual circumstances, a campus may make exceptions to these criteria.
- A student who meets the minimum requirements for graduate and post-baccalaureate studies may be considered for admission in one of the four following categories:
  - **Graduate Classified** – To pursue a graduate degree, applicants are required to fulfill all of the professional, personal, scholastic, and other standards, including qualifying examinations, prescribed by the campus.
  - **Graduate Conditionally Classified** – Applicants may be admitted to a graduate degree program in this category if, in the opinion of appropriate campus authority, deficiencies can be remedied by additional preparation.

- **Post-Baccalaureate Classified** – e.g., admission to an education credential program – Persons wishing to enroll in a credential or certificate program, will be required to satisfy additional professional, personal, scholastic, and other standards, including qualifying examinations, prescribed by the campus.
- **Post-Baccalaureate Unclassified** – To enroll in undergraduate courses as preparation for advanced degree programs or to enroll in graduate courses for professional or personal growth, applicants must be admitted as post-baccalaureate unclassified students. By meeting the minimum requirements, applicants are eligible for admission as post-baccalaureate unclassified students. Admission in this status does not constitute admission to, or assurance of consideration for admission to, any graduate degree or credential program. (Most CSU campuses do not offer admission to unclassified post-baccalaureate students).

## Residency Status Determination

The campus Admissions Office determines the residency status of all new and returning students for nonresident tuition purposes. Responses to the application for admission and, if necessary, other evidence furnished by the student are used in making this determination. A student who fails to submit adequate information to establish a right to classification as a California resident is classified as a nonresident. For detailed explanation please refer to <https://admissions.calpoly.edu/applicants/mycalpoly/resinfo.html>.

## International (Foreign) Student Admission Requirements

The CSU must assess the academic preparation of foreign students. For this purpose, "foreign students" include those who hold U.S. temporary visas as students, exchange visitors, or in other non-immigrant classifications. The CSU uses separate requirements and application filing dates in the admission of "foreign students". All graduate and post-baccalaureate applicants, regardless of citizenship, whose native language is not English and whose preparatory education was principally in a language other than English must demonstrate competence in English. Those who do not possess a bachelor's degree from a post-secondary institution where English is the principal language of instruction must take either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing system (IELTS) exam.

The Office of Admissions completes an initial portfolio review that includes verification of an equivalent B.A./B.S. degree, a determination of the appropriate level of study and an evaluation of all work completed. The Office of Admissions notifies all applicants of the documents needed to complete their portfolios. Graduate coordinators may require additional documentation to assist them in determining an applicant's suitability for the program of study.

The process for filing an international application can be found at <https://admissions.calpoly.edu/applicants/international>.

## Master's Degrees

In graduate courses, students cope with more complex ideas, problems, techniques and materials than in undergraduate courses. Graduate study requires searching and exhaustive analysis, identification and investigation of theories and principles; application of theory to new ideas, problems, and materials; extensive use of bibliographic and other resource materials, with emphasis on primary sources for data; and

demonstration of competence in scholarly presentation of the results of independent study.

Regulations governing fees, grading, and financial aid are located elsewhere in the catalog. This section of the catalog reviews university policy and minimum requirements governing graduate studies. It is not, however, all inclusive.

*Within these general requirements there are specific departmental requirements for each degree. These are found in the descriptions of master's degree programs within each school's description. It is important that graduate students, in consultation with their advisors, familiarize themselves with these requirements. Failure to do so may result in a substantial delay in progress towards the degree and graduation. It is the responsibility of the student to ascertain and comply with all university, college and departmental procedures and requirements.*

- All available master's degree programs, graduate certificates and professional certificates can be found on the graduate education website <http://www.grad.calpoly.edu/program/featured.html>. (<http://grad.calpoly.edu/programs>)

## Master's Degree Programs

- Accounting, MS (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/msaccounting>)
- Aerospace Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/aerospaceengineering/#graduatetext>)<sup>1</sup>
  - Research Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/aerospaceengineering/msaerospaceengineeringresearch>)
- Agricultural Education, Master of (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/agriculturaleducationcommunication/masterofagriculturaleducation>)
- Agriculture, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/#graduatetext>)
  - BioResource and Agricultural Systems Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/bioresourceagriculturalsystems>)
  - Animal Science Specialization ([http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/ms\\_animalscience](http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/ms_animalscience))
  - Crop Science Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/cropscience>)
  - Dairy Products Technology Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/dairyproductstechnology>)
  - Environmental Horticulture Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/environmentalhorticultralscience>)
  - Food Science Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/foodscience>)<sup>1</sup>

- Irrigation Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/irrigation>)
- Plant Protection Science Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/plantprotectionscience>)
- Soil Science Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/soilscience>)
- Architectural Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofarchitectureandenvironmentaldesign/architecturalengineering/msarchitecturalengineering>)<sup>1</sup>
- Architecture, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofarchitectureandenvironmentaldesign/architecture/masterofscienceinarchitecture>)
- Biological Sciences, MA (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/biologicalsciences/mabiologicalsciences>), MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/biologicalsciences/msbiologicalsciences>)
  - Specialization in Regenerative Medicine (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/biologicalsciences/msbiologicalsciencespecializationinregenerativemedicine>)
- Biomedical Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/biomedicalengineering/msbiomedicalengineering>)<sup>1</sup>
  - Specialization in Regenerative Medicine (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/biomedicalengineering/msbiomedicalengineeringsspecializationinregenerativemedicine>)
- Business Administration, MBA (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/#graduatetext>)
  - General Management Specialization (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/generalmanagement>)
  - Graphic Communication Document Systems Management Specialization (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/graphiccommunication>)
- Business Analytics, MS (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/msbusinessanalytics>)
- City and Regional Planning, MCRP (<http://catalog.calpoly.edu/collegesandprograms/collegeofarchitectureandenvironmentaldesign/cityregionalplanning/masterofcityandregionalplanning>)
- Civil and Environmental Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/civilenvironmentalengineering/mscivilandenvironmentalengineering>)<sup>1</sup>
- Computer Science, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/computersciencesoftwareengineering/mscomputerscience>)<sup>1</sup>
- Curriculum and Instruction, MA (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/macurriculumandinstruction>)
- Dairy Products Technology, MPS (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/animalscience/mpsdairyproductstechnology>)
- Education, MA ([http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/#master\\_of\\_arts\\_in\\_education](http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/#master_of_arts_in_education))
  - Counseling and Guidance Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/maeducationspecializationincounselingandguidance>)
  - Curriculum and Instruction Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/maeducationspecializationcurriculuminstruction>)
  - Educational Leadership and Administration Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/maeducationspecializationineducationalleadershipandadministration>)
  - Special Education Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/maeducationspecializationinspecialeducation>)
- Educational Leadership and Administration, MA (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/macurriculumandinstruction/maeducationalleadershipadministration>)
- Electrical Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/electricalengineering/mselectricalengineering>)<sup>1</sup>
- Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/#graduatetext>)<sup>1</sup>
  - Biomedical Engineering Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/msengineeringsspecializationinbiomedicalengineering>)
  - Integrated Technology Management Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/msengineeringsspecializationinintegratedtechnologymanagement>)<sup>1</sup>
  - Water Engineering Specialization (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/msengineeringsspecializationinwaterengineering>)
- Engineering Management, MS (<http://catalog.calpoly.edu/collegesandprograms/interdisciplinaryprograms/mbamsengineering/#graduatetext>)
- Engineering, Specialization in Transportation Planning MCRP/MS (<http://catalog.calpoly.edu/collegesandprograms/interdisciplinaryprograms/mcrpmsengineeringtransportationplanning/#graduatetext>)
- English, MA (<http://catalog.calpoly.edu/collegesandprograms/collegeofliberalarts/english/maenglish>)<sup>1</sup>
- Fire Protection Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/msfireprotectionengineering>)
- Forestry Sciences, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/naturalresourcesmanagementenvironmentalsciences/msforestrysciences>)

- Higher Education Counseling and Student Affairs, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/mshighereducationcounselingstudentaffairs>)
- History, MA (<http://catalog.calpoly.edu/collegesandprograms/collegeofliberalarts/history/mahistory>)
- Industrial Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/industrialmanufacturingengineering/msindustrialengineering>)<sup>1</sup>
- Kinesiology, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/kinesiology/mskinesiology>)
- Mathematics, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/mathematics/msmathematics>)<sup>1</sup>
- Mechanical Engineering, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/mechanicalengineering/msmechanicalengineering>)<sup>1</sup>
- Nutrition, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/foodsciencenutrition/msnutrition>)
- Packaging Value Chain, MS (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/mspackagingvaluechain>)
- Polymers and Coatings Science, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/chemistrybiochemistry/msinpolymersandcoatingscience>)<sup>1</sup>
- Psychology, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofliberalarts/psychologychilddevelopment/mspsychology>)
- Public Policy, MPP (<http://catalog.calpoly.edu/collegesandprograms/collegeofliberalarts/politicalscience/masterofpublicpolicy>)
- Quantitative Economics, MS (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/msquantitativeeconomics>)
- Special Education, MS (<http://catalog.calpoly.edu/collegesandprograms/collegeofsciencemathematics/schoolofeducation/msspecialeducation>)
- Taxation, MS (<http://catalog.calpoly.edu/collegesandprograms/orfaleacollegeofbusiness/mstaxation>)

<sup>1</sup> Blended BS+MS programs available. See individual program for information.

## Graduate Certificate Programs

An academic graduate certificate program declares that a student has satisfactorily completed a sequence of advanced academic courses that provide instruction in a stand-alone, coherent body of specialized knowledge. It is designed to meet requirements for professional competence, expand access to specialized knowledge, or meet occupational needs for advanced interdisciplinary work.

Specific Requirements:

- Admission to a graduate certificate program requires a Bachelor's degree from an accredited institution with a major in a relevant field of study. The applicant must have attained a minimum GPA of 2.5 in the last 90 units attempted or have earned a GPA of at least 2.5 in the last degree completed. Work experience may substitute (at the discretion of the program) for the relevancy of the Bachelor's degree and for the minimum GPA requirements.

- Courses taken to satisfy the requirements of a graduate certificate program may be applied to the requirements of a graduate degree program; however, students must apply separately for admission into a graduate degree program. No course-work for the certificate may be below the 400 level. One 4-unit course in transfer credit, from a regionally accredited institution, may be allowed as determined by the graduate certificate program advisor.
- A minimum GPA of 3.0 is required for successful completion of a graduate certificate program. Students may not elect to take courses required for the certificate as credit/no credit. A graduate certificate program must be completed within three years.
- Students who are enrolled only in a graduate certificate program are exempt from the continuous enrollment requirement for graduate students.

### Certificate Programs:

- Fire Protection Engineering Applications (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/fireprotectionengineeringapplicationsgraduatecertificate>)
- Fire Protection Engineering Science (<http://catalog.calpoly.edu/collegesandprograms/collegeofengineering/fireprotectionengineeringssciencegraduatecertificate>)

## Academic Requirements Graduate Student Continuous Enrollment Policy

Effective Fall Quarter 2009, graduate students are required to maintain continuous enrollment from the time of first enrollment in a graduate program until completion of the degree (AS-692-09). Continuous enrollment is defined as being enrolled during Fall, Winter, and Spring quarters each year. All graduate students must be enrolled during the quarter in which they graduate. Therefore, a student graduating Summer quarter must be enrolled during the summer. Students can maintain continuous enrollment by being enrolled as regular students; obtaining approval for an education or medical leave prior to the quarter when such a leave would begin; or registering in a special course designated for this purpose during quarters in which they are not regularly enrolled. The special course, GS 597, is listed in the University catalog and is taken through Cal Poly Extended Education. GS 597 is a one-unit course, offered credit/no credit; credits in GS 597 do not count toward meeting degree requirements. Students who fail to fulfill this continuous enrollment requirement will not be permitted to graduate—even if all degree requirements have been completed—until payment has been made for all quarters of non-enrollment. This requirement is not retroactive to terms prior to Fall 2009.

For further information and a registration form, visit the Extended Education website at: <http://www.grad.calpoly.edu/policies/continuous.html>

## Degree Requirements

The following conditions and academic requirements are common to all Master's degrees:

- All student must attempt to satisfy the **Graduation Writing Requirement** (EO 665.11.0) during the first quarter of enrollment. Master's students must successfully pass this requirement before their degree can be awarded.

- A student must file an approved Working [Formal Study Plan](#) with a minimum of **45 quarter units** (Title 5, Article 7, 40510 b.2.) before the twelfth unit of graduate study is completed.
  - A student must maintain an overall **grade point average of 3.0** (grade of B on a scale where A = 4.0), or better, based on all courses listed in the Formal Study Plan. A course in which a 'CR' is assigned shall not be used in computing the grade point average. (Title 5, Article 7, 40510 b.4.)
    - Only individual graded courses with C- or higher can be used on the Formal Study Plan. See the grade section for more details.
  - A student must maintain **satisfactory scholarship and professional standards**. Only those graduate students who continue to demonstrate a satisfactory level of scholastic competence and fitness, as determined by the appropriate university authorities, shall be eligible to continue in such curricula. Students whose performance is judged to be unsatisfactory by the authorities of the University may be required to withdraw from all graduate degree curricula offered by the University.
  - A student must successfully complete a **culminating experience** (thesis, project, and/or comprehensive examination). (Title 5, Article 7, 40510 b.3.)
  - A student must complete all of the graduate degree requirements within **seven years** (Title 5, Article 7, 40510 b.2.) of being matriculated, even conditionally, into *that* Master's degree-seeking program.
  - A student may elect to meet the **catalog** graduation requirements in effect at the time the student was admitted to graduate standing (conditional or classified) provided that continuous enrollment was maintained (AS-692-09), or at the time of graduation. The student may be required to make substitutions for discontinued courses by submitting a new Formal Study Plan.
  - Graduate level courses (**500-level**) should make up no fewer than **50%** of the units required for the degree (Title 5, Article 7, 40510 b.2.B.); note that per Academic Senate Resolution AS-825-17 ([https://content-calpoly.edu.s3.amazonaws.com/academicsenate/1/images/AS-825-17\\_0.pdf](https://content-calpoly.edu.s3.amazonaws.com/academicsenate/1/images/AS-825-17_0.pdf)) all students admitted starting Fall 2019 will be required to have 60% of their Formal Study Plan courses at the 500-level.
  - The majority of the Formal Study Plan coursework should be taken while enrolled through Cal Poly's state-supported system (Title 5, Article 7, 40510.A). Cal Poly requires that at least 33 units of a 45-unit program must be completed while in residence at Cal Poly; a limit of 12 units out of residence can be taken. In programs with more than 45 units an equivalent proportion (33/45 or 73%) of units must be taken in residence at Cal Poly.
    - In residence
      - Cal Poly undergraduate courses
      - Cal Poly summer session ('S') courses (EO 1099 9.1 & 10.2)<sup>1</sup>
      - Only up to 12 units of Cal Poly Open University ('P') courses<sup>1</sup>
    - Out of Residence (max 12 units)
      - Extended Education ('E') courses (EO 1099 9.2)<sup>1</sup>
      - Credit by exam units
      - Transfer units<sup>2</sup>
  - The majority of Formal Study Plan coursework should be taken *after* having been matriculated at Cal Poly as a Graduate Classified or Graduate Conditionally Classified (both seeking a master's degree), or Post-baccalaureate Classified (credential or academic certificate) student. Therefore, **only 12 units** can be taken while **unclassified, and only 12 units** can come from **Cal Poly undergraduate** enrollment; no more than a combined total of 24 units from both categories.
    - Post-baccalaureate or Graduate Classified
      - Courses taken (here or in transfer<sup>2</sup>) *after* having been matriculated into a Cal Poly master's, credential, or academic certificate program
    - Unclassified (max 12 units)
      - All transfer<sup>2</sup> and Cal Poly post-baccalaureate enrollment *before* being matriculated into a Cal Poly's master's, credential, or academic certificate program
    - Cal Poly Undergraduate enrollment (max 12 units)
      - Coursework taken as a Cal Poly undergraduate student
  - No more than 24 quarter units of approved Cal Poly **Extended Education** [a combination of Summer Session (S), Open University (P), or Special Session (E) courses] courses shall be accepted for the Master's degree. (EO 1099 10.1.2)
  - No more than nine quarter units shall be in **student teaching**.
  - No more than nine quarter units shall be allowed for a **thesis or project** (Title 5, Article 7, b.2.C.).
    - Enrollment in these units must be as a Master's matriculated student, therefore cannot be enrolled through Extended Education.
  - Note: Some programs/departments set independent study limits on courses, found in the course description. Typically there is a 12-unit combined maximum of independent study units allowed.
- <sup>1</sup> No more than 24 quarter units of approved Cal Poly Extended Education [a combination of Summer Session (S), Open University (P), or Special Session (E) courses] courses shall be accepted for the Master's degree. (EO 1099 10.1.2)
- <sup>2</sup> Transfer units must come from a regionally accredited institution.

## Time Limit for Degree

The time allowed to successfully complete all Master's requirements, including the Master's Culminating Experience Approval Form, is seven years (Title 5, Article 7, 40510 b.2.) from the time the student is matriculated, even conditionally, into that Master's degree-seeking program.

The University, at its option, and in exceptional cases, may extend the time frame. Students who wish to extend the seven-year limit must submit a Graduate Petition for Special Consideration to Graduate Education. The petition must include:

- An explanation of the reasons why the extension is necessary.
- Evidence to support the student's currency in the field of study.
- A copy of the student's Final Formal Study Plan that indicates any additional coursework that needs to be completed as part of this petition and which of those courses will be over seven years old at the proposed time of completion.
  - If the extension is necessary for completion of the culminating experience, list the specific experience being used (thesis, project, or comprehensive exam).
- Indicate the current progress made on the culminating experience and when final degree requirement completion is expected.

- The seven-year rule cannot be extended indefinitely; the student must specify in the petition what quarter and year they will be completing all degree requirements, thus indicating precisely how far the seven-year rule will be extended.

## Graduation Writing Proficiency (GWR)

The Board of Trustees of the California State University has mandated that all students earning undergraduate or graduate degrees in the CSU must be certified as proficient in writing (EO 665-11). In accordance with this mandate, all Cal Poly students must demonstrate competency in writing skills as a requirement for graduation.

Graduate students seeking a Master's Degree or credential should fulfill the GWR during their first quarter at Cal Poly. Note: Students who do not complete the GWR will not be Advanced to Candidacy. Also note that Blended program students must satisfy the GWR before they will be advanced to graduate standing.

The GWR may be satisfied, at the discretion of the Writing & Rhetoric Center, if certain criterion was met prior to post-baccalaureate enrollment. See the center's website (<https://writingcenter.calpoly.edu>) for more details.

Graduate students who cannot submit materials suitable for GWR substitution should review their program requirements and determine which of the following GWR completion pathways is appropriate:

1. Pass the Writing Proficiency Exam (WPE). Details can be found on the Writing & Rhetoric Center's website (<https://writingcenter.calpoly.edu/content/gwr/wpe/wpe>).
2. Earn *both* a grade of C or better (C- does not qualify) *and* a certification of writing proficiency based on a 500- to 800-word, in-class essay in a GWR-approved course selected from the eligible classes listed on PASS.
  - Note: Although students can take the course on a CR/NC basis, they are discouraged from doing so because the student must then earn a B- or better instead of a C or better in order to earn GWR and course credit.

Further information on the GWR may be obtained from the Writing & Rhetoric Center at 805.756.2067 or on their webpage at <https://writingcenter.calpoly.edu/>.

## General Policies Advisement

Master's students should make an appointment with their graduate advisor during their first quarter of being enrolled in that program to develop a Working Formal Study Plan for their Master's degree: an agreement between the student and the university on the specific coursework to be completed in order to fulfill the requirements for the Master's degree (minimum 45 units). A Working Formal Study Plan must be submitted to the Graduate Education Office (Bldg. 52-E47) for review by the end of the 1<sup>st</sup> quarter of starting that program at Cal Poly. It is understood that changes may occur to this plan as students make progress with their studies; changes in the Working Formal Study Plan do not need to be submitted to the Graduate Education Office. However, students must submit a Final Formal Study Plan within the first 3 weeks of the quarter in which they expect to graduate. This Final Formal Study

Plan must accurately reflect the courses that have been completed to satisfy their program requirements.

Each Master's degree program has specific prerequisites, both in courses and in grade-point average. Deficiencies in prerequisites must be defined by the graduate coordinator in the conditional acceptance offer, and the graduate coordinator is responsible for verifying prerequisite compliance prior to the submission of the Advancement to Candidacy. Courses taken for this purpose normally do not count toward fulfillment of the unit requirement for the degree.

Departmental advisors and graduate coordinators share the responsibility for advising Master's degree students throughout their work toward a degree. Students are urged to maintain a personal file of transcripts and other records of all undergraduate and graduate work undertaken, and to make this file available whenever they seek advising.

## Post-Baccalaureate Change of Objective

If students wish to change their post-baccalaureate objective, they must formally file this intention by completing a Post-baccalaureate Change of Objective (PBCO) form, available at [www.grad.calpoly.edu](http://www.grad.calpoly.edu). Students applying to blended Bachelor's/Master's programs need to follow the guidelines under that section. A student must be enrolled for one quarter in the program that they were admitted before filing PBCO.

## Formal Study Plan

The student should make an appointment with their Graduate Program Coordinator during their first quarter of graduate study to develop a Working Formal Study Plan for the Master's degree. A formal study plan is an agreement between the student and the college on the specific coursework to be completed in order to fulfill the course requirements for the Master's degree. The student should always consult with their advisor to ensure that only approved courses are selected, since departmental requirements vary and some courses are excluded. A copy of the study plan must be submitted to Graduate Education for review and final approval.

Courses below the 400-level may not constitute any part of the approved units on the Formal Study Plan (AS-313-89). However, in those programs where specific courses below the 400-level may be essential for a student's success, the student may be conditionally admitted to the program contingent upon completing those courses. Do not list any prerequisite courses on the Formal Study Plan.

## Graduate Courses Taken by Undergraduates for Graduate Credit

Cal Poly undergraduates may take courses in the 400 or 500 series for graduate credit while still matriculated as undergraduates. If they subsequently enter a Cal Poly Master's, credential, or academic certificate program, they may have such course credit applied toward that program, only if the units were not used for the baccalaureate degree. Students must list these courses taken as an undergraduate in the appropriate place on the Formal Study Plan. No more than 12 units of Cal Poly undergraduate work is allowed on the Formal Study Plan.

Cal Poly's Office of the Registrar will validate if Cal Poly undergraduate courses listed on the Formal Study Plan were not needed to meet any undergraduate degree requirement. However, students who want to use undergraduate courses from another institution must provide Cal Poly's Office of the Registrar with an official letter from the other regionally

accredited institution indicating that the coursework was not needed to meet any undergraduate degree requirement.

## Advancement to Candidacy

Advancement to Candidacy (Title 5, Article 7, 40510a & 41011) recognizes that the student has, so far, sufficiently demonstrated the ability to operate at and sustain a level of scholarly competence that is satisfactory for successful completion of the degree requirements. The student is then cleared for the final stages of the program, which, in addition to any remaining coursework, includes the thesis, project, and/or comprehensive examination.

The Advancement to Candidacy form must be submitted by the end of the third quarter of enrollment. A student's signature on the form signifies understanding of the 3.0 GPA requirement for Formal Study Plan courses and compliance with the Continuous Enrollment Policy. The form will be processed only when:

- A Working Formal Study Plan has been submitted and approved.
- The Graduate Writing Requirement (GWR) has been satisfied.
- The Culminating experience has been identified as either a thesis, a project, and/or an exam.
  - For a thesis, all members of the thesis committee must be identified.
  - For a project, the project advisor must be identified.

## Culminating Experience/Research

The student must successfully complete the culminating experience required by the specific program (thesis, project, and/or comprehensive examination) to be granted a graduate degree (Title 5, Article 7, 40510 b.3.). The quality of work accomplished, including the quality of the writing, is the major consideration in judging the acceptability of the thesis, project, and/or comprehensive examination. Note: The degree award date is based on the submission of the Master's Culminating Experience Approval Form to the Graduate Education Office.

## Thesis

"A thesis is the written product of a systematic study of a significant problem. It identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. The finished product evidences originality, critical and independent thinking, appropriate organization and format, and thorough documentation. Normally, an oral defense of the thesis is required." (Title 5, Article 7, 40510 b.3.A.)

The following are requirements for a thesis committee: 1) that the graduate student have a thesis advisor who is a permanent full-time faculty member from the student's program; 2) that the thesis advisor and the student recommend, for approval by the graduate coordinator and/or department head, a thesis committee comprising of at least three faculty members; 3) that two of these members, one of which is the committee chair, be from the student's program. Exceptions to the thesis committee composition must be approved by the College Dean.

If a thesis report is required in a Master's degree program, a committee-approved copy must be completed in accordance with university specifications. Guidelines to be followed in preparing a final copy for filing with the University can be obtained from Graduate Education, or online at [www.grad.calpoly.edu](http://www.grad.calpoly.edu).

All Master's theses must go through Graduate Education's Thesis Formatting Review Process wherein an Editor reviews and provides the student with needed corrections. Upon completion of any corrections required by the Editor or thesis committee, the student submits the electronic thesis report to the [DigitalCommons@CalPoly](mailto:DigitalCommons@CalPoly), a digital archive for the University.

## Project

"A project is a significant undertaking appropriate to the fine and applied arts or to professional fields. It evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a written report that includes the project's significance, objectives, methodology, and a conclusion or recommendation. An oral defense of the project may be required." (Title 5, Article 7, 40510 b.3.B.)

The following are requirements for a project: 1) that the graduate student have a project advisor who is a permanent full-time faculty member from the student's program; 2) a project may also include a committee that must be approved by the graduate coordinator and/or department head. Project reports do not have to be submitted to Graduate Education and typically are not uploaded to the Digital Commons@CalPoly.

## Comprehensive Examination

"A comprehensive examination is one of the possible culminating experiences for the Master's degree and assesses "the student's ability to integrate knowledge of the area, show critical and independent thinking, and demonstrate mastery of the subject matter. The results of the examination should provide evidence of these abilities and achievement. A record of the examination questions and responses shall be maintained..." (Title 5, Article 7, 40510 b.3.C.).

## Research Involving Special Conditions

Research that involves the use of human subjects, vertebrate animals, hazardous materials, or information and materials subject to export-control regulations requires special campus review before the study begins. If your research involves any of these special conditions, check with your Graduate Coordinator and Graduate Education for procedures.

## Grades/Repeats

### Report In Progress (RP) Grades

The grade of RP is used in connection with courses that extend beyond one academic term. It indicates that work is in progress and has been evaluated and found to be satisfactory to date, but that assignment of a grade must await completion of additional work. Work is to be completed within a time period stipulated by the instructor. The RP symbol shall be replaced with the appropriate final grade within one year for all courses or will convert to an F for graded courses or NC for CR/NC-only courses.

There is an exception for graduate degree theses or project courses (539/596/598/599) for which the time may be up to seven years, but may not exceed the overall time limit for completion of all Master's degree requirements (AS-647-06). Failure to complete the assigned culminating experience work will result in the RP, only in these courses, being converted to an NC (AS-443-95).

### Earned D+ or Lower

If a student earns a D+ or lower, the course can be retaken with the permission of the student's program and both grades will be averaged into the Formal Study Plan. Alternately, if the course is not required, it

can be removed from the Formal Study Plan and replaced with a suitable alternative.

## Repeating a Course

Students may enroll in a course for credit more than once only if the catalog course description states that the course may be repeated for credit. An exception to this policy allows the repeating of a course in cases where a grade of D or F was received. Unlike for undergraduates at Cal Poly, a graduate student repeating a course cannot qualify for the removal of a lower letter grade from the overall GPA calculation on the student's transcript. See the [Earned D+ or Lower](#) section above for more information.

## Credit/No Credit Grading

Courses which are offered only on a credit/no credit basis also satisfy the unit requirement if a credit grade is earned. The equivalent of an A or a B (including a B-) is required to earn credit in such courses (AS-8-76). Graduate students may elect to take courses that are not part of their Formal Study Plan on a credit/no credit basis.

## Registration

The schedule and instructions for registration and payment of fees are available through the registration and enrollment tab at the MyCalPoly web portal. Detailed descriptions of courses can be found here (<http://catalog.calpoly.edu/coursesaz>).

## Enrollment/Prerequisites

To enroll in a 500-level graduate course a student must have post-baccalaureate/graduate standing or the permission of the instructor. Note, prerequisites are not waived for 400-level courses; a graduate student may need to get a permission number from the instructor teaching that course to enroll in a 400-level course.

## Credit by Exam for Coursework

See Evaluation of Transfer Credit (<http://catalog.calpoly.edu/academicstandardsandpolicies/evaluationoftransfercredit>).

## Status

### Full-Time Status

A full-time graduate student is defined as one taking 8 or more units in a quarter. Students receiving financial aid may need to meet different requirements to be considered full-time and should consult with the Financial Aid Office. Graduate students are not permitted to enroll in more than 22 units each quarter.

### Leaves of Absence

Educational, medical and military leaves are permitted if students meet the eligibility requirements and submit a Leave of Absence form with the required signatures and documentation to the Office of the Registrar. The maximum duration for any single Leave of Absence is 6 academic quarters (not including summer).

See undergraduate section (<http://catalog.calpoly.edu/academicstandardsandpolicies/registration>).

### Discontinuation

Matriculated students who have not registered for three consecutive quarters and have not been on an approved Leave of Absence will be discontinued and will not be allowed to enroll. To enroll again, students must apply for readmission before the deadline dates listed below for

each quarter. An application fee must accompany the application for readmission. <https://admissions.calpoly.edu/applicants/returning/>

A graduate student who has been discontinued but has completed all required degree requirements except for their culminating experience (thesis, project, and/or exam) may be able to return to Cal Poly to receive their Master's degree without reapplying to their Master's program. The student is encouraged to speak directly with the Graduate Education Office for more information.

Matriculated students who have not registered for one quarter or two consecutive quarters are entitled to their registration priority without applying for readmission.

Application Deadlines for Returning Students (<https://admissions.calpoly.edu/applicants/returning>)

## Graduation

A student planning to graduate must file a Request for Graduation Evaluation form with the Graduate Education Office the quarter before the student intends to participate in the appropriate commencement ceremony (either in December or June). The student should only submit the form after both the Working Formal Study Plan and Advancement to Candidacy have been approved. A student cannot graduate without this application, available at [www.grad.calpoly.edu](http://www.grad.calpoly.edu). **It is the student's responsibility to ensure that all of their necessary forms have been signed and approved.**

Students can confirm that they will appear on the bookstore list (which allows them to purchase a cap and gown) and the Commencement Bulletin by checking their status on Poly Profile only after all of their paperwork has been received in and processed by the Office of the Registrar. On the Poly Profile, under the Career Program Plan section and the Postbaccalaureate Graduate career, students will see an "Expected graduation is..." notation once the paperwork has been processed. Corresponding deadlines for these items are communicated to students via email from Graduate Education.

**Note that, despite participation in commencement ceremonies, students are not official Cal Poly graduates until they have completed ALL degree requirements satisfactorily and have received a 'Congratulations' email from the Office of the Registrar, Evaluations Unit.**

## Academic Excellence

Master's degree candidates who are academically in the top 10 percent of their program and are recommended by their Graduate Program Coordinator are eligible to be recognized for Academic Excellence. Nominations must be approved by the appropriate College Dean. If approved, the student will be permitted to wear "**honor cords**" at Commencement. Students can contact their Graduate Program Coordinator for details.

Note that Latin honors (summa, magna, cum laude) are only for undergraduate degrees.

## Distinction

Graduation with Distinction will be determined by the Office of the Registrar only at the time of degree posting. **It will NOT be noted or awarded at the Commencement Ceremonies.** Instead, the designation will appear on a student's final transcript and diploma. The criterion for graduation with distinction is a Final Formal Study Plan grade point average of 3.75 or better.



## June Only Commencement Awards

Faculty in each Master's program should make recommendations for the *Outstanding Graduate Student* and the *Outstanding Graduate Thesis* awards to the appropriate Graduate Coordinator by May 1. For a program having more than 50 students, two nominations per award can be made. Finalists for the awards may be asked to supply additional information or material to a review committee appointed by the Dean of Graduate Education. The students selected for these awards will be recognized only at the Spring Commencement ceremony.

## Conduct/Probation/Disqualification/Dismissal

### Student Conduct and Discipline

It is expected that all Cal Poly students are enrolled for serious educational pursuits and that they conduct themselves so as to preserve an appropriate atmosphere of learning. It is also expected that all students who enroll at Cal Poly are willing to assume the responsibilities of citizenship in the campus community. Association in such a community is voluntary, and students may withdraw from their graduate programs any time they consider the obligations of membership disproportionate to the benefits. While enrolled, students are subject to campus authority that includes the prerogative of dismissing those whose conduct is inimical to the aims of an institution of higher education. While enrolled, students are subject to the regulations governing discipline stated in Education Code Section 66017 and in Title 5 of the California Code of Regulations, Sections 41301–41302, and to such rules and regulations as have been approved and promulgated by authority of the University President. Students are subject to other applicable regulations contained in this Catalog, in the Campus Administrative Policies, the Standards for Student Conduct, Rights and Responsibilities, and in other official university publications, including the Cal Poly website.

### Academic Probation

A student who is enrolled in a graduate degree program in conditionally classified or classified standing may be placed on academic probation for failure to maintain a cumulative grade point average of at least 3.0 (grade of B on a scale where A = 4.0) in all courses in the Formal Study Plan for the degree.

A student who has been admitted as post-baccalaureate classified in order to pursue a credential program shall be subject to academic probation for failure to maintain a cumulative grade point average of at least 3.0 in all units taken in the credential program.

A post-baccalaureate unclassified student (one who has not been admitted to either a credential or graduate degree program) shall be subject to academic probation for failure to maintain a cumulative grade point average of at least 2.5 in all units attempted subsequent to admission to post-baccalaureate standing.

### Academic Disqualification

A graduate or post-baccalaureate student who has been placed on academic probation may be disqualified from further attendance in a program by action of the Dean of the college (or the Dean's designate) in which the student is enrolled and in consultation with the Dean of Graduate Education for any of the following reasons:

1. The conditions for removal of academic probation are not met within the period specified.

2. The student goes on administrative probation while on academic probation.
3. The student is subject to administrative probation for the same or similar reason for which the student has been placed on academic probation previously, although not currently in such status.

When such action is taken, the student is notified via email from the Dean of Graduate Education that includes an explanation of the basis for the action. Disqualification may be either from further registration in the program or from further enrollment at the University as determined by the Dean of Graduate Education.

### Administrative Probation

A graduate student may be placed on administrative-academic probation by action of the Dean of the College (or the Dean's designate) in which the student is enrolled for any of the following reasons:

1. Withdrawal from all or a substantial portion of a program of study in two successive quarters or in any three quarters. (Note: a student who is on an approved Leave of Absence is not subject to administrative-academic probation for such withdrawal.)
2. Repeated failure to make progress toward the stated degree or program objective when such failure appears to be due to circumstances within the control of the student.
3. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students (for example, failure to complete a required campus or program examination, failure to complete a required practicum, failure to complete a required internship, failure to comply with professional standards appropriate to the field of study, failure to make satisfactory progress in the academic program, etc.).

When such action is taken, students are notified via email and are provided with the conditions for removal from probation and the circumstances that would lead to disqualification, should probation not be removed.

### Administrative Disqualification

A graduate student who has been placed on administrative probation may be disqualified from further attendance in a program by action of the Dean of the college (or the Dean's designate) in which the student is enrolled and in consultation with the Dean of Graduate Education for any of the following reasons:

1. The conditions for removal of administrative probation are not met within the period specified.
2. The student goes on academic probation while on administrative probation.
3. The student is subject to administrative probation for the same or similar reason for which the student has been placed on academic probation previously, although not currently in such status.

When such action is taken, the student is notified via email from the Dean of Graduate Education that includes an explanation of the basis for the action. Disqualification may be either from further registration in the program or from further enrollment at the University as determined by the Dean of Graduate Education.

### Dismissal from University

This is an administrative action that prevents students from enrolling at Cal Poly for any future quarters. Dismissal may result from academic

disqualification, administrative disqualification, or from a disciplinary action.

## Blended Bachelor's + Master's Programs Overview

Blended programs may provide an accelerated route to a graduate professional degree, with simultaneous conferring of both Bachelor's and Master's degrees. Some blended programs with undergraduate degrees that exceed the 180 unit requirement may allow for the possibility of students' earning graduate credit for several of their senior electives, effectively decreasing the summed unit requirements for both degrees. In addition, blended BS+MS programs may provide an opportunity for students to integrate their senior project more seamlessly with their graduate thesis/project. Students must still complete all undergraduate requirements and must have a minimum total of 225 discrete units between the two degrees.

Blended program students can progress from undergraduate to graduate status with an Approved Admission to Blended Programs form, a Post-baccalaureate Change of Objective form (both forms available through the Graduate Education website), and a verification of successful completion of the GWR; blended program students do not need to apply through the Admissions Office. This eliminates the need to pay the application fee.

Students who are interested in pursuing blended programs should submit a request to the appropriate department head or Graduate Coordinator for all required paperwork. The department head/Graduate Coordinator, with assistance of the Graduate Education Office, determines whether each student meets the eligibility criteria detailed below. Graduate Education performs a final review of the Post-baccalaureate Change of Objective before forwarding the information on to the Office of the Registrar. After the form is processed, students can see their change in status on their Poly Profile.

### Eligibility

1. The following are minimum eligibility criteria; *individual departments may have more stringent requirements.*
2. Students must successfully complete a minimum of 180 / maximum 192 undergraduate degree-applicable units (for engineering programs, the maximum number of units is 196). Degree-applicable units are those counted towards the undergraduate degree, and are determined using Expected Academic Progress criteria.
3. Students must be matriculated at graduate standing for a minimum of two quarters before degrees are completed.
4. Students must have a minimum 2.5 GPA in the last 90 quarter units attempted. *(Note that students, once admitted to graduate standing, must maintain a 3.0 GPA or better in courses counting toward the graduate degree.)*
5. Students must complete the Graduation Writing Requirement (GWR) or demonstrate that this requirement was satisfied during their undergraduate program.

### Process to Graduate with Both Degrees

1. Students must be matriculated at graduate standing for a minimum of two quarters prior to graduation.
2. Students must submit all required graduate paperwork to the Graduate Education Office and maintain a minimum 3.0 GPA for courses counting toward the completion of the Master's degree.

3. When all requirements are met for both the undergraduate and graduate programs, both degrees will be awarded at the same time and graduation ceremony.
4. If a student fails to complete the MS program requirements, the BS degree may be granted when all requirements for that degree are met. A new Post-baccalaureate Change of Objective is required to transition back to baccalaureate standing before the Bachelor's degree can be conferred.

## Second Master's Degree

A student can earn only one Master's degree in any one of the programs offered at Cal Poly. A student who wishes to complete a second Master's degree in another discipline, or two Master's degrees simultaneously, must complete all requirements for both degrees. For students admitted Fall 2017 and after, there will be no double-counting of any units for students who are pursuing a second Master's degree<sup>1</sup>. Units taken toward a degree that was never earned either at Cal Poly or elsewhere will not be considered double-counting. Cal Poly's Office of the Registrar will validate if Cal Poly post-baccalaureate/graduate enrollments listed on the Formal Study Plan were not needed to meet any previously awarded master's degree. However, students who want to use post-baccalaureate/graduate enrollment from another institution must provide Cal Poly's Office of the Registrar with an official letter from a regionally accredited institution indicating that the coursework was not needed to meet any master's requirements.

To add a second Cal Poly's Master's degree, a student must complete a Post-baccalaureate Change of Objective form, secure all signatures, and submit the completed form to the Graduate Education office.

<sup>1</sup> This limit does not apply to any programs that have Chancellor's Office preapproved unit reductions such as the Engineering Management (EMP) and MCRP/Transportation degrees.