

# USING THIS BULLETIN

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## Introduction

The Graduate Bulletin is Penn State's comprehensive source for graduate academic information and program requirements.

## New Features

### Program Page Layout

- Consistent layout of graduate major degree program information organized within the following tabs:
  - Overview (including the Program Code and Campus)
  - Admission Requirements
  - Degree Requirements
  - Dual-Titles (if any)
  - Integrated Undergrad-Grad Program (if any)
  - Joint Degrees (if any)
  - Student Aid
  - Courses
  - Learning Outcomes
  - Contact

Please note that the University may make changes to policies, procedures, educational offerings, and requirements.

### Changes Page

- Real-time amendments to information in the Bulletin will be tracked on the Changes page.
- The Bulletin is updated every semester. The Bulletin Archive (<http://undergraduate.bulletins.psu.edu/undergraduate/archive/>) contains previous versions of graduate program information.

### Course Bubble

When a course link is clicked, a course bubble will appear with important course information including, but not limited to:

- course title, description, and credits;
- prerequisites and recommended preparation;
- if the course is repeatable;
- if the course is cross-listed.

## Nondiscrimination Statement

The University is committed to equal access to programs, facilities, admission and employment for all persons. It is the policy of the University to maintain an environment free of harassment and free of discrimination against any person because of age, race, color, ancestry, national origin, religion, creed, service in the uniformed services (as defined in state and federal law), veteran status, sex, sexual orientation, marital or family status, pregnancy, pregnancy-related conditions, physical or mental disability, gender, perceived gender, gender identity, genetic information or political ideas. Discriminatory conduct and harassment, as well as sexual misconduct and relationship violence, violates the dignity of individuals, impedes the realization of the University's educational mission, and will not be tolerated. Direct all inquiries regarding the nondiscrimination policy to the Affirmative Action Office, The Pennsylvania State University, 328 Boucke Building, University Park, PA 16802-5901, Email: [aao@psu.edu](mailto:aao@psu.edu), Tel (814) 863-0471.

## Academic Authority

The Graduate Council has responsibility for, and authority over, all academic information contained in the Graduate Bulletin.

Each step of the educational process, from admission through graduation, requires continual review and approval by University officials. The University, therefore, reserves the right to change the requirements and regulations contained in this Bulletin and to determine whether a student has satisfactorily met its requirements for admission or graduation, and to reject any applicant for any reason the University determines to be material to the applicant's qualifications to pursue higher education.

MORE INFORMATION ABOUT ACADEMIC AUTHORITY (<http://gradschool.psu.edu/gradcouncil/>)

## Definitions and Abbreviations

Described below are definitions related to graduate major degree programs:

### Graduate / Postbaccalaureate Certificate Program

A graduate or postbaccalaureate credit certificate program is a group of courses that focuses upon an area of specialized knowledge or information and is developed, supervised, and evaluated by the faculty members of the academic unit offering the program. Postbaccalaureate credit certificate programs reflect emerging academic areas, and may supplement or enhance existing degree programs. Postbaccalaureate certificates and graduate certificates differ in the number of graduate credits required; see the Postbaccalaureate Credit Certificate Programs policy (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/postbaccalaureate-credit-certificate-programs/>) for more details.

### Graduate Dual-Title Degree Program

A dual-title program is a fully integrated program of study that integrates course work and research in the graduate major and dual-title fields early in the student's program. Dual-title programs are adopted by existing graduate major programs; after entering those graduate major programs, students can apply to the dual-title and earn a degree in both their graduate major and the dual-title field. See the Dual-Title Graduate Degree Program policy (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/dual-title-graduate-degree-programs/>) for more details.

### Graduate Joint Degree Program

A joint degree program allows students to pursue work simultaneously towards an existing, specific graduate degree and a professional degree (J.D. or M.D.) offered at Penn State. Joint degree programs enhance students' educational and research opportunities within the graduate and professional programs, provide students with valuable complementary training for a variety of career opportunities, and enable students to complete both degrees in less time than it would take to complete them separately. See the Joint Degree Programs policy (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/joint-degree-programs/>) for more details.

### Graduate Minor Program

A graduate minor may be taken in any of the approved graduate major degree programs. In addition, there are stand-alone graduate minors which are unaffiliated with a graduate major. Graduate minors are available for both master's and doctoral degrees; see the following Graduate Minors policies for more details: Minor - Research Doctorate

(<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/minor-research-doctorate/>), Minor - Professional Doctoral Degrees (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/doctoral-minor-professional-doctorate/>), Minor - Research Master's Degrees (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/minor-research-masters/>), Minor - Professional Master's Degrees (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/minor-professional-masters/>).

## Integrated Undergraduate-Graduate (IUG) Degree Program

An Integrated Undergraduate-Graduate (IUG) degree program combines a Penn State baccalaureate degree with a master's degree as a continuous program of study. An IUG program allows qualifying students to:

- create a cohesive plan for baccalaureate and master's degree studies, with advising informed by requirements for both degree programs;
- complete the combined degree program in less time than it would take to complete each program separately;
- become familiar with the expectations of graduate studies in their programs;
- access the resources of the Graduate School; and
- learn from current graduate students who share academic interests.

See the Integrated Undergraduate-Graduate (IUG) Degree Programs policy (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/integrated-undergraduate-graduate-degree-programs/>) for more details.

## Option

An option is a distinct curricular specialization within a graduate major. It is the only formal curricular specialization within a graduate major that is recognized on the transcript and diploma for students in the major. Options are defined by certain minimum requirements related to the distinctiveness and commonality of the course work in the major; see the Degree Program Options policy (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/degree-program-options/>) for more details.

## Abbreviations, Acronyms, and Codes

Described below are common codes, abbreviations, acronyms, and other types of academic shorthand used at Penn State, along with a brief explanation of each.

Code	Explanation
A	Special topics (course suffix; indicates different versions of the same course, e.g., CAS 100A, CAS 100B, CAS 100C)
A & A	Arts and Architecture (college abbreviation)
AA	Arts and Architecture (college code)
AAPP	Academic Administrative Policies and Procedures Manual
AB	Abington (campus code)
AB	Abington (college code)
ACUE	Administrative Council on Undergraduate Education
AG	Agricultural Sciences (college code)
AL	Altoona (campus code)

AL	Altoona (college code)
AP	Advanced Placement Program
APPL	Course requires an application with the School of Music (course characteristic)
APPT	By appointment (class meeting time)
AU	Audit, attended regularly (grade reporting symbol)
AUDN	Course requires an audition (course characteristic)
AUU	Audit, did not attend regularly (grade reporting symbol)
B	Special topics (course suffix; indicates different versions of the same course, e.g., CAS 100A, CAS 100B, CAS 100C)
BA	Business, Smeal College of (college code)
BC	Behrend (college code)
BK	Berks (campus code)
BK	Berks (college code)
BR	Beaver (campus code)
BW	Brandywine (campus code)
C	Special topics (course suffix; indicates different versions of the same course, e.g., CAS 100A, CAS 100B, CAS 100C)
CA	Capital (college code)
CALC	Course requires a calculator (course characteristic)
CAMP	College Assistance Migrant Program
CAT	Online catalog, University Libraries
CC	Commonwealth Campuses
CCP	College Contact Person
CCRR	College Contact and Referral Representative
CCSG	Council of Commonwealth Student Governments
CE	Continuing Education
CGPA	Cumulative grade-point average
CIC	Committee on Institutional Cooperation
CLEP	College-Level Examination Program
CM	Communications (college code)
CNCR	Course is scheduled concurrently with another course (course characteristic)
CNTL	Course is controlled (course characteristic)
COMM	Communications (college abbreviation)
CORD	Course is coordinated with other course(s) (course characteristic)

COST	Course requires an additional fee (course characteristic)	GN	Natural Sciences (General Education code)
D	Special topics (course suffix; indicates different versions of the same course, e.g., HIST 297D, HIST 297E)	GPA	Grade-point average
DAA	Dean/Director of Academic Affairs	GQ	Quantification (General Education code)
DF	Deferred grade (grade reporting symbol)	GR	Graduate (level code)
DN	Dickinson School of Law (campus code)	GR ND	Graduate non-degree (college code)
DS	DuBois (campus code)	GS	Social and Behavioral Sciences (General Education code)
DU	Division of Undergraduate Studies (college code)	GV	Great Valley (campus code)
D U S	Division of Undergraduate Studies (college abbreviation)	GV	Great Valley (college code)
E	Special topics (course suffix; indicates different versions of the same course, e.g., HIST 297D, HIST 297E)	GWS	Writing/Speaking (General Education code)
ECoS	Eberly College of Science	H	Honors course or section (course suffix)
ED	Education (college code)	HB	Harrisburg (campus code)
EM	Earth and Mineral Sciences (college code)	H H D	Health and Human Development (college abbreviation)
EM SC	Earth and Mineral Sciences (college abbreviation)	HH	Health and Human Development (college code)
EN	Engineering (college code)	HN	Hazleton (campus code)
ENGR	Engineering (college abbreviation)	HY	Hershey Medical Center (campus code)
EOP	Educational Opportunity Program	I	Incomplete (grade reporting symbol)
EPR	Early Progress Report	I	Special topics (course suffix; indicates different versions of the same course, e.g., HIST 297I, HIST 297K)
EPS	Educational Planning Survey	I COL	Intercollege programs (college abbreviation)
ER	Behrend (campus code)	IB	International Baccalaureate Program
ESL	English as a Second Language	IC	Intercollege programs (college code)
EVEX	Course has evening exams (course characteristic)	IL	International Cultures (General Education code)
F	Special topics (course suffix; indicates different versions of the same course, e.g., HIST 297F, HIST 297G)	INCP	Incomplete (grade reporting symbol)
FE	Fayette (campus code)	INTG	Course is integrated with other courses (course characteristic)
FINL	Course has a final exam (course characteristic)	IS	Information Sciences and Technology (college code)
FL	Failure under pass/fail option (grade reporting symbol)	IST	Information Sciences and Technology (college abbreviation)
FYS	First-Year Seminar	ITS	Information Technology Services
G	Special topics (course suffix; indicates different versions of the same course, e.g., HIST 297F, HIST 297G)	IUG	Integrated undergraduate/graduate degree programs
GA	Arts (General Education code)	IVID	Course uses interactive video (course characteristic)
GA	Greater Allegheny (campus code)	J	Individualized instruction (course suffix)
GH	Humanities (General Education code)	K	Special topics (course suffix; indicates different versions of the same course, e.g., HIST 297I, HIST 297K)
GHW	Health and Wellness (General Education code)		
GN	Graduate non-degree (college code)		

L	Lecture section (course suffix)	SATL	Course is offered at multiple locations via satellite uplink (course characteristic)
LA	Liberal Arts (college code)	SC	Science, Eberly College of (college code)
LEAP	Learning Edge Academic Program	SCIEN	Science, Eberly College of (college abbreviation)
LIAB	Course has liability attendance policy (course characteristic)	SEGM	Course is segmented (course characteristic)
LV	Lehigh Valley (campus code)	SGPA	Semester grade-point average
LW	Law (level code)	SH	Shenango (campus code)
M	Writing Across the Curriculum and Honors (course suffix)	SI	Supplemental Instruction
MA	Mont Alto (campus code)	SITE	Schreyer Institute for Teaching Excellence
MAC	Morgan Academic Center (for Student-Athletes)	SL	Schuylkill (campus code)
MD	Medical (level code)	SLO	Special Living Options
MD	Medicine (college code)	SOTP	Student Orientation and Transition Programs
MED	Medicine (college abbreviation)	SRTE	Student Ratings of Teacher Effectiveness
MEP	Multicultural Engineering Program	SSSP	Student Support Services Program
MRC	Multicultural Resource Center	T	First-Year Seminar and Honors (course suffix)
MS	Military Science (ROTC) (college code)	TMDT	Course has additional meeting times/dates (course characteristic)
NACADA	National Academic Advising Association	U	United States Cultures/International Cultures and Honors (course suffix)
NC	Non-credit (level code)	UAO	Undergraduate Admissions Office
NDEGR/C/H	Nondegree Regular/Conditional/High School (Classification of Undergraduate Students)	UC	University College (college code)
NG	No grade (grade reporting symbol)	UE	Undergraduate Education
NK	New Kensington (campus code)	UFO	University Fellowships Office
NR	Nursing (college code)	UG	Undergraduate (level code)
NSO	New Student Orientation	UG ND	Undergraduate non-degree (college code)
OCLC	Course meets at an off-campus location (course characteristic)	UN	Undergraduate nondegree (college code)
ODS	Office for Disability Services	UN	Unsatisfactory achievement (grade reporting symbol)
OSA	Office of Student Aid	UP	University Park (campus code)
OUR	Office of the University Registrar	UPUA	University Park Undergraduate Association
P	Pass (noncredit course) (grade reporting symbol)	US	United States Cultures (General Education code)
P	Practicum (or laboratory) section (course suffix)	W	Official withdrawal (grade reporting symbol)
PC	Penn College (Pennsylvania College of Technology; campus code)	W	Writing Across the Curriculum (course suffix)
PREQ	Course has prerequisites (course characteristic)	WB	Wilkes-Barre (campus code)
PS	Pass (pass/fail option) (grade reporting symbol)	WC	World Campus
PSU	Pennsylvania State University	WEB	Web course; offered entirely through the Internet (course characteristic)
R	Recitation section (course suffix)	WEP	Women in Engineering Program
R	Research (grade reporting symbol)	WF	Withdrew failing (grade reporting symbol)
RAP	Recommended Academic Plan		
RI	Resident Instruction		
ROTC	Reserve Officers' Training Corps		
S	First-Year Seminar (course suffix)		
SA	Satisfactory achievement (grade reporting symbol)		

WISE	Women in the Sciences and Engineering
WN	Withdrew no grade (grade reporting symbol)
WP	Withdrew passing (grade reporting symbol)
WS	Worthington Scranton (campus code)
X	Writing Across the Curriculum and First-Year Seminar (course suffix)
XC	State College Continuing Education (campus code)
XF	Failure, academic dishonesty (course grade)
XS	Foreign studies program (campus code)
Y	Writing Across the Curriculum course and United States Cultures/ International Cultures (course suffix)
YK	York (campus code)

Common abbreviations for course attributes and suffixes can be found in the University Course Descriptions (<https://bulletins.psu.edu/university-course-descriptions/>) section.

## Changes to the Graduate Bulletin

Changes to the Graduate Bulletin will be tracked in real-time and listed below. At the end of every semester, these updates will be incorporated into the Bulletin.

### Program Changes Effective Summer 2023

#### Business Administration (Intercollege)

Change residency experience.

#### Corporate Finance

Change graduate program name to Finance.

#### Education

Add new online graduated degree program offering the Doctor of Education (D.Ed.) degree.

#### Supply Chain Management

Change degree requirements.

### Certificate Changes Effective Summer 2023

#### Accounting Foundations Graduate Credit Certificate Program

Certificate renewed.

#### Counterterrorism Graduate Credit Certificate Program

Certificate renewed.

#### Dietetic Internship Postbaccalaureate Certificate Program

Certificate renewed.

#### Geospatial Programming and Web Map Development Graduate Credit Certificate Program

Certificate renewed.

#### Global Health Graduate Credit Certificate Program

Certificate renewed.

#### Hospitality Management Graduate Credit Certificate Program

New certificate offering.

#### Human Factors Engineering and Ergonomics Graduate Credit Certificate Program

Drop certificate program.

#### International Affairs Graduate Credit Certificate Program

Certificate renewed.

#### International Development and Policy Graduate Credit Certificate Program

Certificate renewed.

#### International Public Policy Graduate Credit Certificate Program

Certificate renewed.

#### International Security Studies Graduate Credit Certificate Program

Certificate renewed.

#### Public Health Graduate Credit Certificate Program

Certificate renewed.

#### Translational Science Graduate Credit Certificate Program

Certificate renewed.

#### Teaching and Learning Online in K-12 setting Postbaccalaureate Certificate Program

Expiration of certificate program.

### Program Changes Effective Fall 2023

#### Accounting Analytics

Add a new graduate program offering the Master of Accounting (M.Acc.) degree.

#### Agricultural and Biological Engineering

Change degree requirements.

#### Applied Linguistics

Adopt dual-title in African Studies for the Ph.D. degree.

#### Applied Statistics

Add IUG pairing the B.S. in Data Sciences with the M.A.S. degree.

#### Business Administration (Smeal)

Add Doctor of Business Administration (D.B.A.) degree.

#### Civil Engineering (Capital)

Add IUG pairing the B.S. in Civil Engineering with the M.S. degree.

#### Finance

Change degree requirements.

#### Geographic Information Systems

Change degree requirements.

#### Lifelong Learning and Adult Education

Change admission and degree requirements.

#### Political Science

Change degree requirements.

## **Certificate Changes Effective Fall 2023**

### **Geospatial Intelligence Applications Postbaccalaureate Certificate Program**

Drop certificate program.

### **Gerontology Postbaccalaureate Credit Certificate Program**

Expiration of certificate program.

### **Weather and Climate Analytics Graduate Credit Certificate Program**

Expiration of certificate program.

## **Program Changes Effective Spring 2024**

### **Accounting (Great Valley)**

Add IUG pairing B.S. in Accounting with the M.P.Acc. degree.

### **Anthropology**

Adopt dual-title in Microbiome Sciences.

### **Business Administration (Smeal)**

Change degree requirements.

### **Ecology**

Adopt dual-title in Microbiome Sciences for the Ph.D. degree.

### **Enterprise Architecture and Business Transformation**

Change degree title to Master of Enterprise Architecture (M.A.E.) and change degree requirements.

### **Forensic Science**

Change degree requirements.

### **Hospitality Management**

Discontinue offering the M.S. degree.

### **Management and Organizational Leadership**

Drop graduate program.

### **Physics**

Change degree requirements.

### **Social and Behavioral Neuroscience**

Change dual-title requirements.

### **Software Engineering**

Add IUG pairing B.S. in Computer Science with the M.S.E. degree.

## **Certificate Changes Effective Spring 2024**

### **AI Engineering Graduate Credit Certificate Program**

New certificate offering.

### **Business Analytics Graduate Credit Certificate Program**

Certificate renewed.

### **Business Sustainability Strategy Graduate Credit Certificate Program**

Change requirements and renew certificate.

### **Computer Vision Graduate Credit Certificate Program**

New certificate offering.

### **Data Analytics Graduate Credit Certificate Program**

Change requirements and renew certificate.

### **Data Analytics and Engineering Graduate Credit Certificate Program**

New certificate offering.

### **Data Engineering for Analytics Graduate Credit Certificate Program**

New certificate offering.

### **Diversity and Inclusion as Strategy Graduate Credit Certificate Program**

Change requirements and renew certificate.

### **Diversity, Ethics, and Leadership Postbaccalaureate Credit Certificate Program**

New certificate offering.

### **Foundations of Artificial Intelligence Graduate Credit Certificate Program**

New certificate offering.

### **Foundations of Data Science Graduate Credit Certificate Program**

New certificate offering.

### **Human Resources and Employment Relations Foundations Graduate Credit Certificate Program**

Change certificate title from "Human Resources and Employment Relations", change requirements, and renew certificate.

### **International Human Resources and Employment Relations Graduate Credit Certificate Program**

Change requirements and renew certificate.

### **Labor and Collective Bargaining Postbaccalaureate Credit Certificate Program**

New certificate offering.

### **Labor and Employment Law Graduate Credit Certificate Program**

New certificate offering.

### **Life-cycle System Design Graduate Credit Certificate Program**

New certificate offering.

### **Marketing Analytics Graduate Credit Certificate Program**

Certificate Renewed.

### **Natural Language Processing Graduate Credit Certificate Program**

New certificate offering.

### **Negotiation and Influence Graduate Credit Certificate Program**

Certificate Renewed.

### **People Analytics and Artificial Intelligence Graduate Credit Certificate Program**

New certificate offering.

### **Project Quality Management Graduate Credit Certificate Program**

New certificate offering.

### **Psychology of Ethical Leadership Graduate Credit Certificate**

New certificate offering.

### **Psychology of Leadership Foundations Graduate Credit Certificate Program**

New certificate offering.

### **Psychology of Team Leadership Graduate Credit Certificate Program**

New certificate offering.

### **Quality Management Across Product Lifecycle Graduate Credit Certificate Program .**

New certificate offering.

### **Quantitative Decision Making for Engineering Managers Graduate Credit Certificate Program**

New certificate offering.

### **Software Architecture and Design Graduate Credit Certificate Program**

New certificate offering.

### **Strategic Human Resources and Workplace Ethics Graduate Credit Certificate**

New certificate offering.

### **System Modeling and Analysis Graduate Credit Certificate Program**

New certificate offering.

### **System Quality & Risk Evaluation Graduate Credit Certificate Program**

New certificate offering.

### **Systems Data Analytics Graduate Credit Certificate Program**

New certificate offering.

### **Talent Management Graduate Credit Certificate Program**

New certificate offering.

### **Technical Management Graduate Credit Certificate Program**

New certificate offering.

### **Technical Management and Leadership Essentials Graduate Credit Certificate Program**

New certificate offering.

### **Trauma-Informed Psychotherapy Graduate Credit Certificate Program**

Certificate Renewed.

## **FAQs**

1. Where can I find the Undergraduate Bulletin?
  - The Undergraduate Bulletin is located at <http://bulletins.psu.edu/undergraduate> (<http://bulletins.psu.edu/undergraduate/>).
2. Where can I find a list of courses and course descriptions?
  - You may find courses and descriptions several different ways within the Bulletin. You may navigate to the full listing of courses and descriptions from the Courses (<https://bulletins.psu.edu/university-course-descriptions/>) link in the top navigation menu. You may also scroll over any course number within the Bulletin to see the course description in a course bubble. Search for specific courses through the search option on the homepage or in the search functions throughout the Bulletin.
3. Where can I find past Bulletins?
  - Past Bulletins can be found on the Archive page (<https://bulletins.psu.edu/graduate/archive/>), which can be accessed from any page in the Bulletin's top navigation menu.
4. When will the Graduate Bulletin be updated?
  - The Bulletin will be updated at the beginning of each semester (fall, spring, and summer). Changes that occur between updates are identified on the Changes page.
5. Why are there are some courses listed in the Bulletin that I can't schedule?

- The Bulletin Course Description section displays all courses that are currently active at Penn State. Not all of these courses are taught every academic semester or year. To view courses that are available for enrollment by semester, please view the LionPATH Class Search ([https://www.lionpath.psu.edu/psc/CSPRD/EMPLOYEE/HRMS/c/SA\\_LEARNER\\_SERVICES.CLASS\\_SEARCH.GBL?Page=SSR\\_CLSRCH\\_ENTRY&Action=U](https://www.lionpath.psu.edu/psc/CSPRD/EMPLOYEE/HRMS/c/SA_LEARNER_SERVICES.CLASS_SEARCH.GBL?Page=SSR_CLSRCH_ENTRY&Action=U)).

Have a question we didn't include? Please let us know by emailing [bulletins@psu.edu](mailto:bulletins@psu.edu).