



***Master of Professional Studies***

# **Renewable Energy and Sustainability Systems**

**RESS Student Handbook**

Updated: 1/15/2026

<https://www.ress.psu.edu/>

# Admission

This section of the student handbook is intended for students who have already gained acceptance into one of Penn State's online Master's in RESS or Graduate Certificate programs. If you are a prospective student who would like to learn more about our offerings and application process, please check [World Campus website](#).

## Admission Checklist

Before you start the program, we recommend that you do the following:

- Make sure you have an active [Penn State Access Account](#), user ID, and password (not your Limited Access account).
- Fill out the *Intake Survey* provided by the program office – this will help us assign your academic adviser and recommend the coursework.
- Check Penn State academic calendar and take notes of the key dates for the upcoming semester.
- Understand the financial considerations and deadlines for dropping or adding a course.
- Check your Penn State email.
- Log in to [Canvas](#). Classes you are registered for will show on your Canvas dashboard about a week before the start of the semester.
- Read through this handbook to make sure you are familiar with the policies and requirements of your specific certificate or degree program.
- Make an appointment with your academic adviser to discuss any outstanding questions before the semester starts.

## Students Currently in the MPS Program

- ***Do you want to receive a certificate while working on your degree?***

Students pursuing Master's degree in RESS may consider acquiring one or more of the Graduate Certificates in addition to their diploma. You can double-count the track courses in MPS for the Certificate (no additional coursework needed). To receive the Certificate upon graduation, you will need to apply for it and pay the graduate school application fee for it prior to your graduation semester.

## Students Currently in a Certificate Program

- ***Do you want to apply for the RESS Master's degree?***

Credits earned in any of our certificate programs can be applied toward the requirements of one the RESS MPS degree. In this case, students must apply for the RESS Master's before acquiring a total of 15 credits of certificate or non-degree classes.

## Credit Transfers

Transfer credits for the program from external institutions are reviewed on a case-by-case basis. Students should discuss transferring credits with their academic advisers. The following are important criteria for external credit transfer consideration:

- A maximum of 10 credits earned from an accredited graduate institution may be transferred and counted toward the RESS master's degree.
- To be eligible for transfer, academic work must have been completed within five years prior to the date of first degree registration at the Graduate School of Penn State (as a degree-seeking or non-degree graduate student).
- The earned credits must not be used towards a completed graduate degree at the external institution.
- The grade for the course transferred must be at least B (3.0) quality and must appear on an official graduate transcript.
- The course syllabus or another authoritative description must be provided to the program for the evaluation of the suitability of the course for the RESS requirements.

Students should direct requests for credit transfers to [ress.advising@ress.psu.edu](mailto:ress.advising@ress.psu.edu) together with respective course syllabi and transcripts. Credit transfer process can only be started after you have begun taking classes in our program. Approval to apply any transferred credits toward a certificate or degree program must be granted by the program and the Graduate School. The Graduate School policy statement for transfer of credits can be found at [GCAC-309: Transfer Credit](#).

# Academics

# I. Master's of Professional Studies (MPS)

## General Requirements

The MPS degree in Renewable Energy and Sustainability Systems (RESS) is conferred upon students who earn a minimum of **33 credits** of course work at the 400-, 500-, or 800- level, including at least 18 credits at the 500- or 800- level, while maintaining the grade-point average of 3.0 or better. RESS Program students must also complete a culminating experience (capstone course or scholarly paper) as part of their coursework to be eligible for graduation.

The program curriculum includes:

- 12 credits of core courses
- 12 credits of track courses
- 6 credits of electives
- 3 credits of culminating experience: Capstone course or Scholarly Paper

## Program Tracks

There are two distinct tracks within the MPS RESS program:

- (i) Renewable Energy Systems and
- (ii) Sustainability Management and Policy,

which are typically recommended to students based on their professional focus and career goals. Students may choose to follow a specific track when selecting their coursework, although this is not a requirement, and mixing courses between the two tracks is allowable.

## Renewable Energy Systems Track

The Renewable Energy Systems track is recommended for students who aim for careers in energy industry, business, and consulting. Students in this track acquire expertise in project development, resource assessment, and technical knowledge pertinent to the implementation of renewable energy systems. The Master's level skills for renewable energy project development include solar resource assessment, knowledge of technology principles and innovations, understanding the policy landscape and broader impacts of energy transition. Developed competencies also include effective communications to maximize the economic utility of renewable energy to the client/stakeholders, and the social context of solar systems project design. Courses in renewable energy track address the specifics for both utility-scale and distributed generation systems.

For the Renewable Energy Systems track, a background in science, engineering or professional experience in energy industry is recommended.

This track includes the following courses:

**Core courses** (required 12 credits):

- EME 504: Foundations in Sustainability Systems (3 cr.)
- EME 801: Energy Markets, Policy and Regulation (3 cr.)
- EME 802: Renewable and Sustainable Energy Systems (3 cr.)
- BIOET 533: Ethical Dimensions of RESS (3 cr.)

**Track courses** (choose 12 credits out of the following courses):

- EME 810: Solar Resource Assessment and Economics (3 cr.)
- AE 878: Solar Project Development and Finance (3 cr.)
- AE 868: Commercial Solar Electric Systems (3 cr.)
- EME 812: Utility Solar Power and Concentration (3 cr.)
- AERSP 886: Engineering of Wind Project Development (3 cr.)
- EME 897: Solar Energy Integration and Economics (3 cr.)

**Electives** (required 6 credits)

Elective courses can be selected from the other track of RESS or from other Penn State programs in consultation with student's academic adviser.

**Capstone Experience** (3 credits)

- EME 589 – Management and Design of Renewable Energy and Sustainability Systems; or
- EME 596 – Scholarly Paper Option

## **Sustainability Management and Policy Track**

The Sustainability Management and Policy Track is designed for students who aim to lead sustainability project planning and policy development, given the systems approach of sustainability in business and government. The demand is already high for graduate leaders with deep understanding of the science of sustainability, combined with systems acumen to assess risk and plan for renewable energy projects, and communication skills to develop new policy implementation. The expanded fields of renewable energy, energy trading, and sustainability systems management dictate that master's level education be centralized to the science of sustainability, analysis of market and non-market strategies, communication to facilitate energy policy development, and systems thinking approaches to unify the project development approach.

This track includes the following courses:

**Core courses** (required 12 credits):

- EME 504: Foundations in Sustainability Systems (3 cr.)
- EME 801: Energy Markets, Policy and Regulation (3 cr.)
- EME 802: Renewable and Sustainable Energy Systems (3 cr.)
- BIOET 533: Ethical Dimensions of RESS (3 cr.)

**Track courses** (12 credits of following courses):

- EME 803: Applied Energy Policy (3 cr.) or EME 432: Energy Policy
- EME 805: Renewable Energy and Nonmarket Enterprise (3 cr.)
- EME 807: Technologies for Sustainability Systems (3 cr.)
- BA 850: Sustainability Driven Innovation (3 cr.)

**Electives** (required 6 credits)

Elective courses can be selected from the other track of RESS or from other Penn State programs in consultation with student's academic adviser.

**Capstone Experience** (3 credits)

- EME 589 – Management and Design of Renewable Energy and Sustainability Systems; or
- EME 596 – Scholarly Paper Option

**Capstone Experience**

All MPS RESS students are required to have 3 credits of the Capstone Experience as a final milestone for the Master's degree. There are two options to fulfill this requirement: (a) Capstone Course – EME 589 and (b) Scholarly Paper – EME 596.

**(a) Capstone Course – EME 589 Management and Design of RESS**

The Capstone course should be scheduled during the last or second to last semester in the program. Enrollment in the Capstone is by program approval. Students need to send a request to register to [ress.advising@ress.psu.edu](mailto:ress.advising@ress.psu.edu) – during the preceding semester.

**(b) Scholarly Paper**

When choosing the scholarly paper option of the Capstone experience, students will follow these steps:

1. Student will identify and work with a Penn State faculty member who would provide supervision and guidance for the student through the period until Capstone completion.
2. The terms for this collaboration and the topic of the paper should be discussed and agreed upon among the student, faculty, academic adviser and capstone coordinator one semester prior to engagement of the student in the project.

3. Student will only register for EME 596 when they have research project and supervisor identified and cannot switch from Capstone course (EME 589) to Scholarly Paper (EME 596) without prior approval, as explained in #2.
4. The suggested timeline for completing the research project and producing the final deliverable is at least 2 semesters.
5. The final paper should be submitted to the Capstone Instructor and faculty adviser for review and grading by a decided-upon deadline during the semester when student is registered for the Capstone course (EME 589).

*Requirements for the main deliverable:*

1. The paper should address a topic relevant to renewable energy and sustainability fields and fit the general RESS scope.
2. The paper should contain original research results (not just being a literature review on a topic), for example, data from calculations, simulation, experiments, field work, or other new work.
3. The paper must be a new and original writing, not something that was produced in the past (as part of previous jobs or previously taken courses).
4. The paper should follow a scholarly paper format (e.g. that of a particular scientific journal) and could potentially constitute a publication, but it does not have to be published to be accepted as a final deliverable for Capstone Experience.

### **Capstone Course Pass/Fail Policy (RESS Program)**

Successful completion of the RESS Capstone Course (EME 589) demonstrates a student's ability to synthesize and apply sustainability and renewable energy concepts to complex, real-world challenges. A passing grade reflects mastery of technical analysis, systems thinking, professional communication, and ethical decision-making consistent with Penn State's Graduate School standards. Students who do not meet these expectations will receive a failing grade and must re-enroll in the Capstone in a subsequent semester. In such cases, faculty will provide written feedback identifying deficiencies. After two unsuccessful attempts, the student's standing in the RESS program will be terminated but this decision is subject to review and/or appeal.

### **Ethical Research Requirement (SARI)**

Students in the RESS MPS program must complete the university's [Scholarship and Research Integrity \(SARI\) requirements](#) by taking the course BIOET 533: *Ethical Dimensions of Sustainability (3 credits)*. This course is one of the core courses in the RESS Program – it examines the social, political, legal, and ethical issues that arise in the context of sustainable development. Upon earning credits for this course, your SARI milestone will be checked on your university account before graduation.

## Course substitutions

Substitutions for required courses, either with alternative online courses, resident-instruction courses, or courses from other institutions, will be considered on a case-by-case basis and must be petitioned and approved by the Program Chair, with an input from the student's adviser. Petitions should be emailed to [ress.advising@ress.psu.edu](mailto:ress.advising@ress.psu.edu)

## II. Graduate Certificates

### Solar Energy

The graduate certificate in Solar Energy requires completion of 12 credits from the following list of courses:

#### Required courses:

- [EME 810: Solar Resource Assessment and Economics](#) (Fall and Spring)
- [AE 878: Solar Project Development and Finance](#) (Fall and Spring)
- [EME 812: Utility Solar Power and Concentration](#) (Summer)
- [AE 868: Commercial Solar Electric Systems](#) (Fall and Spring)

Also, the special topics course [EME 897: Solar Energy Integration and Economics](#) (Summer) can be taken as part of the Solar Energy certificate and substituted for the above-listed courses, except EME 810.

The Certificate students who consider applying for the RESS Master's program can count those certificate course credits towards their Master's degree.

MPS students who have completed the above courses with grades B- or higher as part of their Master's coursework can also request the Certificate in addition to their Master's diploma. To obtain the certificate, students will still need to formally apply for it before, during, or after completion of the said courses.

The Graduate Certificate in Solar Energy can be completed over two to four semesters, depending on your pace.

### Sustainability Management and Policy

The graduate certificate in Sustainability Management and Policy requires completion of the following four courses:

- [EME 803: Applied Energy Policy](#) (Fall) or [GEOG 432 Energy Policy](#) (Summer)
- [EME 805: Renewable Energy and Nonmarket Enterprise](#) (Summer)

- [EME 807: Technologies for Sustainability Systems](#) (Spring or Summer)
- [BA 850: Sustainability Driven Innovation](#) (Fall or Spring)

The Certificate students who consider applying for the RESS Master's program can count those certificate course credits towards their Master's degree.

MPS students who have completed the above courses with grades B- or higher as part of their Master's coursework can also request the Certificate in addition to their Master's diploma. To obtain the certificate, students will still need to formally apply for it before, during, or after completion of the said courses.

The Graduate Certificate in Sustainability Management and Policy can be completed over 2 or 3 semesters.

## **Energy Transition Strategies**

The graduate certificate in Energy Transition Strategies requires completion of the following three courses:

- EGEE 401 Energy in a Changing World
- EME 504 Foundations in Sustainability Systems
- EME 802 Renewable and Sustainable Energy Systems

The Certificate students who consider applying for the RESS Master's program can count those certificate course credits towards their Master's degree.

MPS students who have completed the above courses with grades B- or higher as part of their Master's coursework can also request the Certificate in addition to their Master's diploma. To obtain the certificate, students will still need to formally apply for it before, during, or after completion of the said courses.

The Graduate Certificate in Energy Transition Strategies can be completed over 2 semesters.

## **Sustainable Energy Development**

The graduate certificate in Sustainable Energy Development requires completion of the following three courses:

- EME 444 Global Energy Enterprise
- BIOET 533 Ethical Dimensions of Renewable Energy and Sustainability Systems
- EME 801 Energy Markets, Policy, and Regulation

The Certificate students who consider applying for the RESS Master's program can count those certificate course credits towards their Master's degree.

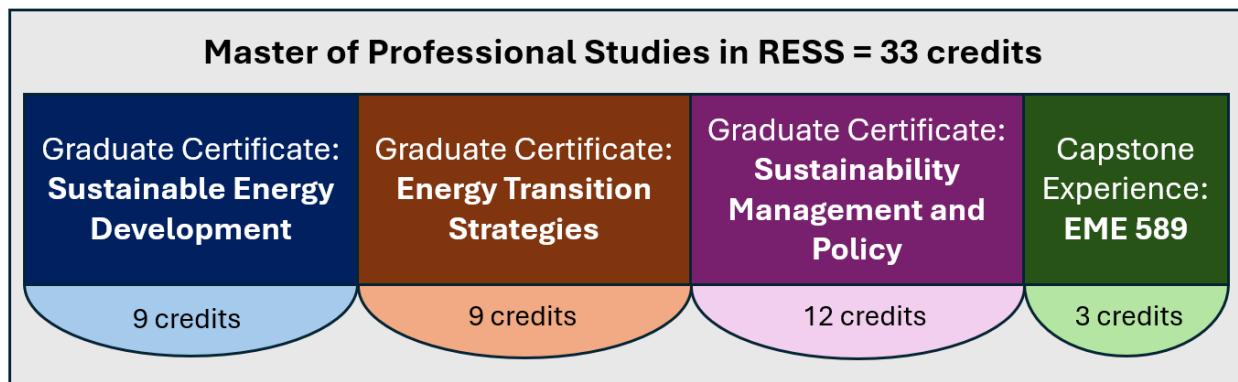
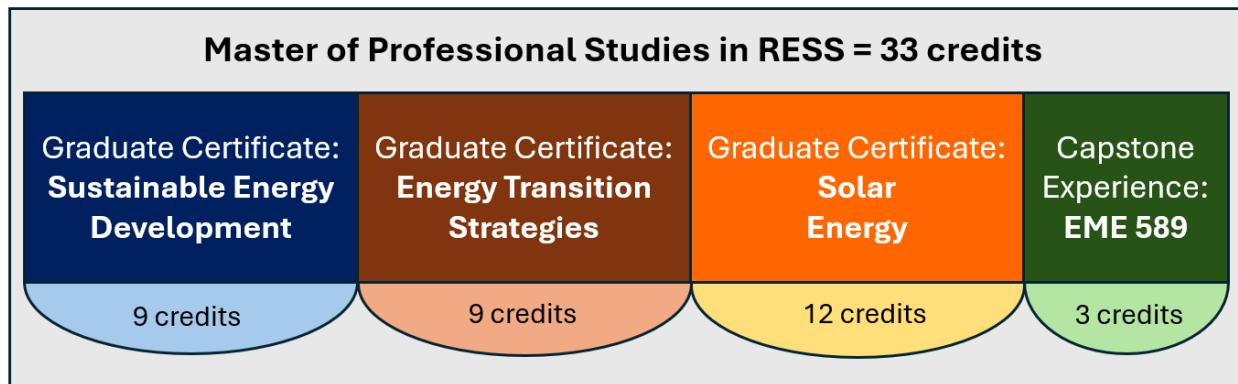
MPS students who have completed the above courses with grades B- or higher as part of their Master's coursework can also request the Certificate in addition to their Master's diploma. To obtain the certificate, students will still need to formally apply for it before, during, or after completion of the said courses.

The Graduate Certificate in Sustainable Energy Development can be completed over 2 semesters.

### **Stackable credentials**

Students that earn multiple RESS certificates can “stack” them to build their Master’s degree. While the above certificates can serve as a stand-alone credentials, they are part of the stackable model for the Master of Professional Studies in Renewable Energy and Sustainability Systems. Stackable credentials recognize skills and knowledge in a certain area or specialization and allow students to earn multiple certificates within their degree program without incurring multiple application fees.

These are the two stackable models currently available in RESS:



# Advising

Once accepted into the MPS RESS program, students are assigned an academic adviser after completion of an onboarding entry survey. You would meet with your adviser once a semester to touch base on any matters related to your academic progress and plans.

## **Recommended course load**

The RESS courses are offered over the Fall, Spring, and Summer semesters. Students can choose their coursework based on the [course offering schedule](#).

The recommended course load for part time students sharing graduate studies with other work / family commitments is 1-2 courses per semester. Students seeking full time enrollment may register for 3 courses (9 credits). There is no minimum or maximum credit requirement, and the pace students go through the program is flexible.

## **Advising communications**

Regular communication with your academic adviser is an essential component of success in the RESS Program. Students are responsible for initiating and maintaining contact with their assigned adviser at least once per academic year, or more frequently as needed to discuss academic progress, course planning, and professional goals.

If personal, financial, or health-related issues arise that may affect academic performance, students are expected to notify their adviser as early as possible. Timely communication allows for proactive guidance, minimizes potential academic or financial consequences, and supports a coordinated approach to student success within the Penn State Graduate School framework.

# Graduation

## MPS Program

Students who are planning to graduate must file an [intent to graduate](#) early in the graduation semester. Missing the deadline for the intent may delay your graduation and receipt of your diploma until next semester.

Students who have filed an intent to graduate and who plan to come to the in-person Commencement on the University Park campus must reserve a seat at the ceremony. Master's candidates planning to attend the ceremony must go to [Commencement Registration](#) and sign up.

Students who are attending graduation should secure lodging as early as possible. Students who are attending in-person commencement need to purchase regalia. You may purchase caps and gowns from the [Penn State Bookstore](#). If you need assistance, contact the bookstore at 814-863-3589.

RESS MPS students are Energy and Mineral Engineering majors receiving a master's degree; the color of the graduation hood is **orange**. Like other graduate degrees, RESS degrees will be awarded in the Graduate School ceremony. The Department of Energy and Mineral Engineering is part of the College of Earth and Mineral Sciences, but the College of EMS ceremony is for undergraduate students.

## Certificate Programs

Certificate students automatically receive a certificate if they have applied to the program and satisfied all the requirements. Certificate students do not need to file an intent to graduate. Certificates are mailed by the university to student's mailing address on file several weeks after completion.

# Program Policies

## Academic Integrity

Academic integrity is the pursuit of scholarly activity in an open, honest, and responsible manner. Academic integrity is a basic guiding principle for all academic activity in the College. All students should act with personal integrity, respect other students' dignity,

rights, and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts. (Please see [Senate Policy 49-20](#).)

Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation, fabrication, or deception. Such acts of dishonesty violate the fundamental ethical principles of the EMS and Penn State community and compromise the worth of work completed by others.

To protect the rights and maintain the trust of honest students and support appropriate behavior, EMS faculty will regularly communicate high standards of integrity and reinforce them by taking reasonable steps to anticipate and prevent acts of dishonesty in all assignments. At the beginning of each course, the instructor will provide students with a statement clarifying the application of EMS academic integrity policies to that course.

Although it is the prerogative of the individual course instructor to pursue violations of academic integrity, the College strongly encourages all faculty to inform their students of the College policy on academic dishonesty and to include a definitive statement in their course syllabi describing unacceptable behavior and the sanctions to be applied should a violation occur. In the case of the latter, a sanction might indicate that a first cheating infraction would lead to a score of zero on the examination or assignment in which the violation occurred, and a second incident would result in an F grade (failure) in the course. A more extensive list of possible sanctions relevant to specific violations may be found in the [Precedent Guidelines for Academic Integrity Violations](#). Moreover, faculty statements also should include conditions or criteria that uniquely apply to the course. For example, large and crowded classrooms require the need for extra care and civility on the part of students to avoid irritation to their neighbors. It is of the utmost importance that students be reminded frequently and clearly about the importance of academic integrity to educational and scientific enterprise, and the consequences for those who chose to violate basic rules of honest behavior. Please review Penn State's Senate [Policy G-9 Academic Integrity](#). More details can be found on the [EMS Academic Integrity of Graduate Students webpage](#).

## **Research Ethics**

Both graduate and undergraduate students should carefully review [Penn State's Policy AD47 General Standards of Professional Ethics](#), which pertains to the expectation of integrity and ethical, scholarly behavior for their entire period of study.

## **Pause Your Studies**

There is nothing you need to do to take time off from your studies, but students who take an entire spring or fall term off will need to apply to resume their studies (see below for more detail). Taking the summer term off does not require the resume-study application.

## **Resume Your Studies**

If you have taken an entire fall or spring term off, you will need to apply to resume your studies. The [resume studies information](#) is found on the Graduate School website.

While it will appear that you are applying again, once you start the process, the system will determine that you are resuming, and you will not have to pay an application fee.

Students who take more than one year off must supply additional documentation to the Graduate School during the resume studies process. Although it will seem, at first, that you need to submit new letters of recommendation, you do not. Please consult your academic adviser if you intend to pause your studies for more than one year.

Students who have GPA below 3.0 may need program's support memo to be supplied to the Graduate School to ensure approval. Talking to your academic adviser prior to pausing your study is highly encouraged if your GPA is below 3.0.

RESS Master's students are allowed up to eight years from the date of admission to complete all requirements for the degree.

## **Drop a Course**

Dropping a course means removing a course from your current schedule. Students can drop a course from their schedule during a drop period, without penalty. There are two course drop deadlines each semester: the regular drop deadline and the late drop deadline. Courses dropped during the regular drop period will not appear on your academic record. Courses you late drop will be entered with a notation of the late drop on your academic record. There are academic and financial implications for dropping a course before each of these deadlines, and your adviser and financial aid representative can help you consider how dropping a course may impact you. Information from the Registrar's Office about dropping courses can be found here: [Adding, Dropping, and Auditing Courses](#). Course add and drop periods can be found on the Academic Calendar or in LionPATH. For specific World Campus procedures regarding dropping a course, please see [Dropping a Course](#).

Please also see the [Tuition Adjustment Schedule](#). Students can drop courses during the first 6 days of the semester without penalty. After that deadline you will owe a part of full tuition for the course.

## **Withdraw From a Semester**

Withdrawing means to unregister for the entire semester. Students who wish to drop the last/only course from their schedule should go through the withdrawal process. The process of a withdrawal is defined as dropping all registered courses for the current semester or session. A withdrawal will delay normal degree progress, may affect academic programming, and may have financial implications for students with loans or financial aid. It is suggested that a degree-seeking student contact his/her academic program of study to discuss alternatives to withdrawing before proceeding. Information from the Graduate School about the withdrawal process can be found at: [Withdrawal Process](#).

Students who choose to withdraw for a semester, or who are absent from their academic career for one spring or fall semester, are required to file to resume their studies to be able to take courses again. The application to resume studies can be found here: [Resume Study](#).

## **Defer a Grade**

If a major life event makes you unable to complete course assignments on schedule, Penn State policy allows instructors to temporarily defer grades (see the [Graduate School Grading System Policy](#)).

To request a deferred grade ("DF"), submit your request in writing to your instructor by e-mail. Important points of emphasis to keep in mind:

- What constitutes an extenuating circumstance worthy of a deferred grade is at the instructor's discretion. What one instructor sees as worthy, another may not.
- You and the instructor will agree to a revised schedule of deadlines (up to a maximum of 12 weeks from the end of the term).
- A deferred grade automatically reverts to an F if no grade update has been provided after 12 weeks.
- Students who obtain a grade deferral should avoid enrolling in other courses until the DF is resolved.
- Do not wait until the end of the course to request a deferred grade.

## **How Many Courses Can I Take at One Time?**

If you're a typical student working full-time, we strongly recommend registering for no more than two courses per semester. Starting your first semester with just one course to allow yourself to adjust to the graduate level studies is a good strategy. While some students have successfully navigated more than two courses in the same term, it proved to be difficult and may jeopardize quality of learning and student's grade.

## Is There a Time Limit to Finish a Certificate or Degree?

The [certificate programs](#) offered by Penn State do not have a time limit for completion. Those who complete a certificate program and subsequently gain admission to one of our master's degree programs may count up to 15 credits earned in nondegree status toward that degree. To be eligible for transfer, academic work must have been completed within five years prior to the date of first degree registration at the Graduate School of Penn State.

The RESS Master's degree takes approximately 2-2.5 years on average to complete the 33 required credits (11 courses).

The Graduate School allows eight years for completion of the RESS MPS degree. The [Graduate Degree Programs Bulletin](#) of the Graduate School is an important source of information. Please read it thoroughly.

# Technology and Communication Requirements

## Technical requirements

Make sure your computer meets the [technical requirements](#). The instructors of your courses will let you know what software is needed. Access to a reliable Internet connection is required for taking online courses. A problem with your Internet access may **not** be used as an excuse for late, missing, or incomplete coursework. If you experience problems with your Internet connection while working on this course, it is your responsibility to find an alternative Internet access point, such as a public library or Wi-Fi® hotspot and alert your instructors of any issues.

## Requesting Help

If you are experiencing issues with Penn State learning platforms or portals, contact the [Penn State IT Service Desk](#). It is in your own best interest to be as specific as you possibly can. Vague descriptions of a problem only delay assistance. Try to include information such as:

- the specific webpage
- screenshots
- the exact language of any error message displayed on your screen,
- date and time the problem occurred

That will help the specialist to resolve the problem quickly.

## Communication Requirements

Check your Penn State email through [Outlook in Office 365](#). It is important to check regularly, as all essential course communications will be sent through that account. You can also [forward your Penn State email](#) to your personal email account.