PROFESSIONAL MASTER'S IN APPLIED SYSTEMS ENGINEERING

The Professional Master's in Applied Systems Engineering (PMASE) is a comprehensive system engineering program designed to give practicing engineers the mathematical, scientific, and engineering foundation to develop, deploy, and evaluate various modeling and analysis strategies. PMASE students explore these skills by engaging in real-world projects and practical examples while engaging with faculty who are practitioners in the field.

It is a rigorous graduate degree designed to build deep expertise. PMASE gives engineers an effective blend of business, leadership, and in-depth advanced systems engineering domain knowledge through application-based exercises, labs, case studies and capstone group projects. The degree program's learning outcomes include how to:

- **Develop systems thinking skills** that support employing various analytic strategies to develop a holistic perspective of the relationships among systems components and the environment.
- Develop the capacity to **apply modeling and simulation** to determine and apply the best modeling and simulation approaches.
- Apply **Model-Based Systems Engineering (MBSE)** techniques through system lifecycle.
- **Assess tools and techniques, resources, organizational systems, and decision-making processes** for the successful management of projects.
- Leverage skills and knowledge from PMASE program to **learn and incorporate emerging systems engineering methods** and technologies.
- Create a foundation for the SE Professional Certification through the International Council on Systems Engineering (ICSE).

The PMASE program is a collaborative effort led by Georgia Tech's College of Engineering, with the Georgia Tech Research Institute, and the Scheller College of Business at Georgia Tech. It is delivered via Georgia Tech Professional Education (GTPE), the Institute's continuing and professional education unit.

The flexible, innovative curriculum allows you to learn while you stay in your current job. Program highlights include:

- A hybrid format taught mostly online, requiring three in-person sessions in Atlanta, throughout the course of the program
- A mini-mester structure, offered each fall and spring, so you can focus on one course at a time
- A student cohort model that encourages collaboration, networking, and community building
- A team-based, hands-on capstone where you receive input from and collaborate with an industry sponsor to solve a real-world problem, and synthesize your learning
- Mandatory live video conference sessions two to three times during the course on Friday (1-5 p.m.) and Saturday (10 a.m. - 5 p.m.). You will receive specific dates before starting the program via our two-year schedule.

For PMASE admission requirements, application deadlines, tuition detail, course descriptions, and other info, visit pe.gatech.edu/degrees/pmase.

The PMASE program is a two-year program divided into core curriculum courses and complex systems courses and is delivered in a cohort model. A cohort is a group of students working towards a common degree and taking the same classes on the same schedule through completion of the degree. During the Fall Term of the cohort's second year in the program, the students select a domain elective from the options available. Currently the elective options available are in the domains of sensors systems (ASE 6111), information systems (ASE 6121) and human systems integration (ASE 6131). The prerequisite for the domain electives is ASE 6006, Systems Engineering Laboratory.

Code	Title	Credit Hours
Core Curriculum:		
ASE 6001	Fundamentals of Modern Systems Engineering	3
ASE 6002	Systems Design and Analysis	3
ASE 6003	Modeling and Simulation for Systems Engineers	3
ASE 6005	Advanced Topics in Systems Engineering: Systems Modeling with SysML	3
ASE 6006	Systems Engineering Laboratory	3
ASE 8803	Special Topics (Leadership Development)	3
Complex System Sequence:		
Domain Electives (Choose one):		3
ASE 6111	Sensor Systems Analysis and Synthesis	
ASE 6121	Information Systems Analysis and Synthesis	
ASE 6131	Analysis and Synthesis: Human Systems Integration	
ASE 6102	System of Systems and Architecture	3
ASE 6103	Complex System Lifecycle and Integration	3
ASE 6104	Complex System Design and Integration (Capstone)	3
Total Credit Hours		**30**