



# WPI

Online Graduate Education in Systems Engineering

## SE BS/MS Program

## Online Information Session

29 October 2020 – 12:00 to 12:30 pm

Zoom: <https://wpi.zoom.us/j/5088316594>

## YOUR WPI TEAM



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Works with prospective students as they are making the decision about Graduate School.

Works to keep curriculum connected with industry trends.

Works with students once they join a degree program, remaining your main point of contact throughout your entire degree.

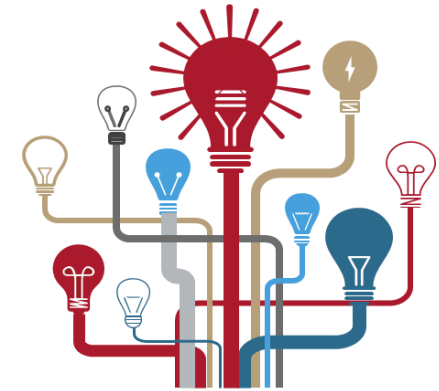
# AGENDA

- What is Systems Engineering? – Don
- Systems Engineering and Program Success – Don
- Career Paths – Don
- BS/MS Process – Don
- Course Overview – Don
- SYS 501 INCOSE Academic Equivalency – Don
- How Online Learning Works – Lisa
- Program Logistics – Lisa
- Q&A – Don, Lisa, Lori

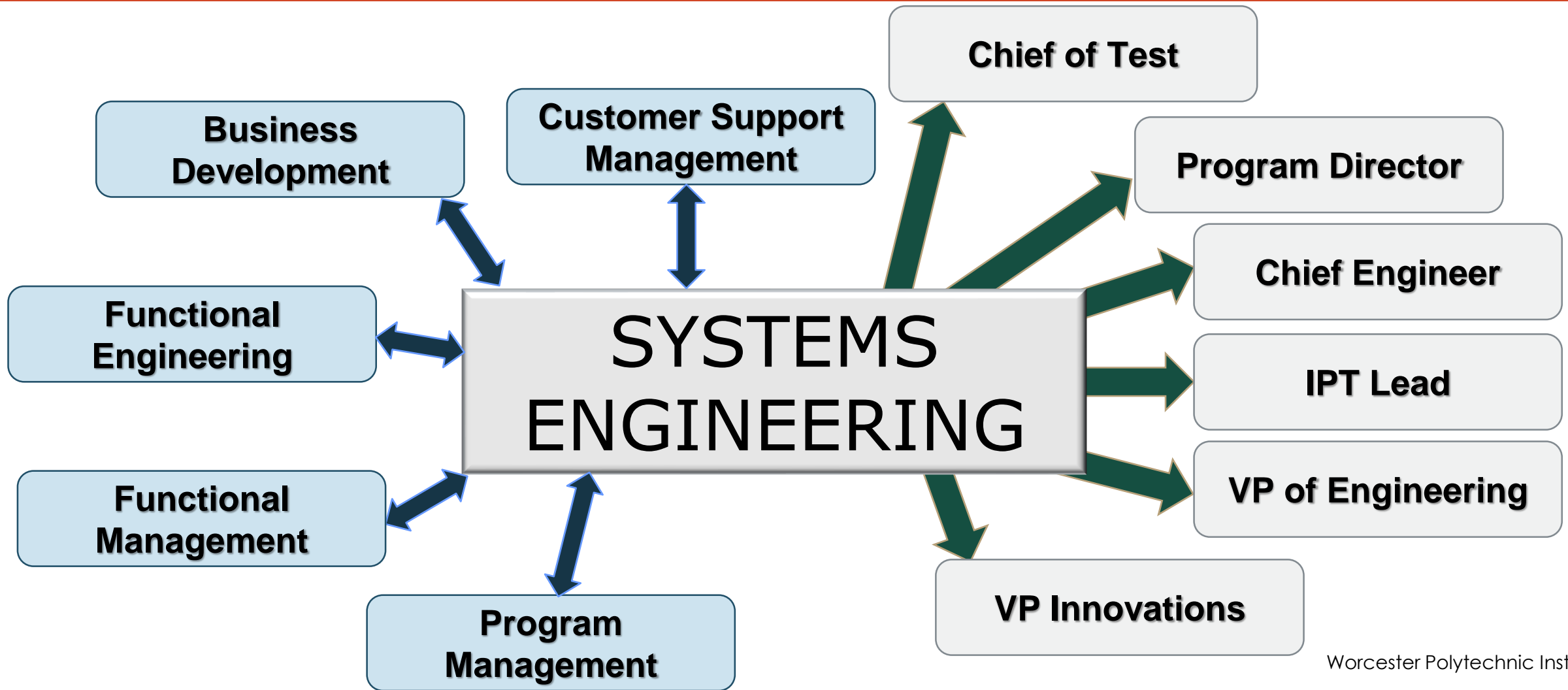


# SYSTEMS ENGINEERING AND PROGRAM SUCCESS

- There is tremendous potential for wasted effort on large projects, because their development requires many subsystems to be developed in parallel.
- Without a clear understanding of what must be done for each subsystem, the development team risks having inconsistent designs, conflicting interfaces, or costly duplication of effort.
- ***Systems engineering provides a systematic, disciplined approach to defining, for each member of the development team, what must be done for success.***
- ***Systems engineering can contribute significantly to successful systems, and to achieving the right balance of performance, cost, and schedule through the system life cycle.***
- ***As we work and evolve in this complex age of digitalization, the need for well trained and educated systems engineers is more critical than ever.***



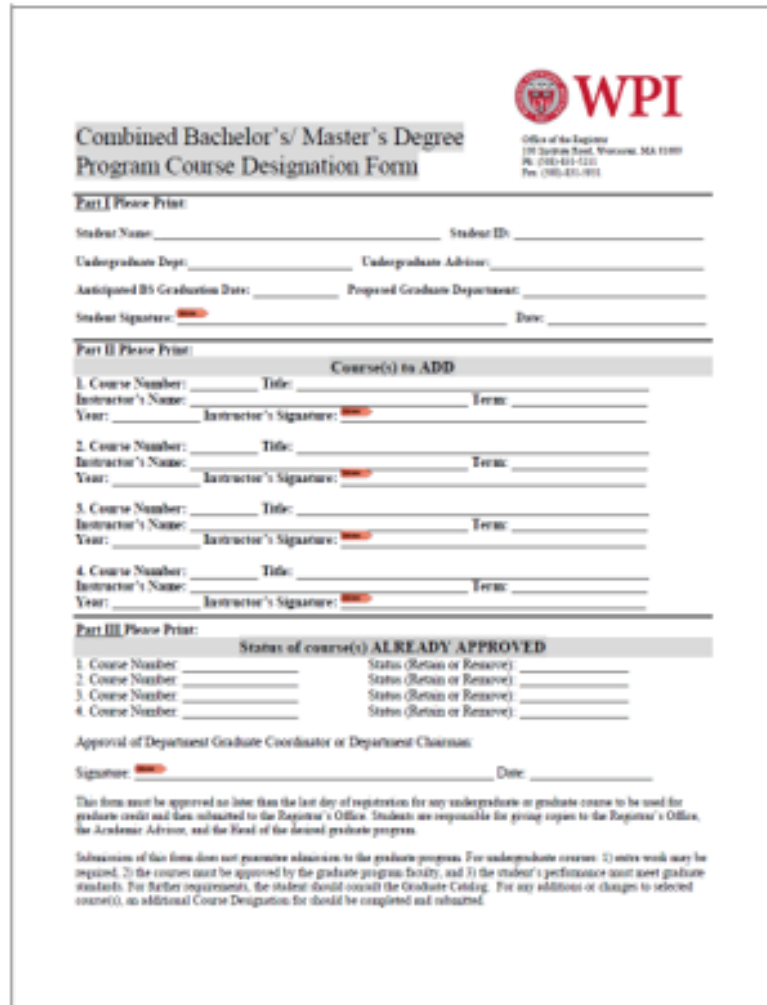
# CAREER PATHS



# BS/MS IN SYSTEMS ENGINEERING

- Bachelor's degree may be earned in any engineering major at WPI.
- Master's degree is awarded in System Engineering.
  - Note: Math or science majors with a minor in engineering should contact the Director of Systems Engineering to discuss their plans.
- Students may double count up to **12** credits.
- The following courses are recommended for double counting:
  - SYS 501 Concepts of Systems Engineering in 4<sup>th</sup> year of ug studies – 3 credits
  - MIS 576 Project Management in 4<sup>th</sup> year of ug studies – 3 credits
  - For SE Elective Courses, students may double count any approved combination of 4000 or 500 level engineering, science or math courses that total to at least 6 graduate credits.
- Students should apply for admission in their Junior year.
- Admitted SE B.S./M.S. program students must satisfy all of the requirements of their selected B.S. degree and all the program requirements of the M.S. SE degree.
- Interested students can learn more at:  
<https://www.wpi.edu/academics/undergraduate/bachelors-masters-degree>

# Combined Bachelor's/ Master's Degree Program Course Designation Form



**WPI**  
Office of the Registrar  
100 Worcester Road, Worcester, MA 01090  
Ph: (508) 851-1121  
Fax: (508) 851-9011

**Combined Bachelor's/ Master's Degree Program Course Designation Form**

**Part I Please Print:**

Student Name: \_\_\_\_\_ Student ID: \_\_\_\_\_  
Undergraduate Dept: \_\_\_\_\_ Undergraduate Advisor: \_\_\_\_\_  
Anticipated BS Graduation Date: \_\_\_\_\_ Proposed Graduate Department: \_\_\_\_\_  
Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Part II Please Print:**

**Course(s) to ADD**

1. Course Number: \_\_\_\_\_ Title: \_\_\_\_\_  
Instructor's Name: \_\_\_\_\_ Instructor's Signature: \_\_\_\_\_ Term: \_\_\_\_\_  
Year: \_\_\_\_\_

2. Course Number: \_\_\_\_\_ Title: \_\_\_\_\_  
Instructor's Name: \_\_\_\_\_ Instructor's Signature: \_\_\_\_\_ Term: \_\_\_\_\_  
Year: \_\_\_\_\_

3. Course Number: \_\_\_\_\_ Title: \_\_\_\_\_  
Instructor's Name: \_\_\_\_\_ Instructor's Signature: \_\_\_\_\_ Term: \_\_\_\_\_  
Year: \_\_\_\_\_

4. Course Number: \_\_\_\_\_ Title: \_\_\_\_\_  
Instructor's Name: \_\_\_\_\_ Instructor's Signature: \_\_\_\_\_ Term: \_\_\_\_\_  
Year: \_\_\_\_\_

**Part III Please Print:**

**Status of course(s) ALREADY APPROVED**

1. Course Number: \_\_\_\_\_ Status (Retain or Remove): \_\_\_\_\_  
2. Course Number: \_\_\_\_\_ Status (Retain or Remove): \_\_\_\_\_  
3. Course Number: \_\_\_\_\_ Status (Retain or Remove): \_\_\_\_\_  
4. Course Number: \_\_\_\_\_ Status (Retain or Remove): \_\_\_\_\_

Approval of Department Graduate Coordinator or Department Chairman:  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

This form must be approved no later than the last day of registration for any undergraduate or graduate course to be used for graduate credit and then submitted to the Registrar's Office. Students are responsible for giving copies to the Registrar's Office, the Academic Advisor, and the Head of the desired graduate program.

Submission of this form does not guarantee admission to the graduate program. For undergraduate courses: 1) extra work may be required, 2) the courses must be approved by the graduate program faculty, and 3) the student's performance must meet graduate standards. For further requirements, the student should consult the Graduate Catalog. For any additions or changes to selected course(s), an additional Course Designation form should be completed and submitted.

- Form can be accessed at the WPI Registrar page:
- [https://www.wpi.edu/sites/default/files/docs/Offices/Registrar/Combined BSMS Degree Course Designation Fillable PDF Form.pdf](https://www.wpi.edu/sites/default/files/docs/Offices/Registrar/Combined%20BSMS%20Degree%20Course%20Designation%20Fillable%20PDF%20Form.pdf)



# MASTER OF SCIENCE IN SYSTEMS ENGINEERING

## 30 CREDITS

### Core Requirements (12 credits)

- SYS 501. Concepts of Systems Engineering
- SYS 510. Systems Architecture and Design
- SYS 511. Systems Integration, Verification & Validation
- OIE 542. Risk Management and Decision Making

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### SE Depth Requirement (6 credits)

- Complete two additional 3-credit Systems Engineering graduate courses

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### Electives (6 credits)

- Course options may include Computer Science, Engineering, Business, and Mathematics, System Dynamics

### Leadership/Management Requirement (3 credits)

- MIS 576. Project Management
- MIS 582. Information Security Systems and Management
- OBC 506. The Heart of Leadership: Power, Reflection, and Interpersonal Skills
- OIE 554. Global Operations Strategy
- SD 550. System Dynamics Foundation: Managing Complexity
- BUS 546. Managing Technological Innovation

### SYS 585. Capstone Experience (3 credits)

# SYS 501 – INCOSE ADCADEMIC EQUIVALENCY

- During the 2019 International Symposium, the Certification Advisory Group for the International Council on Systems Engineering (INCOSE) approved Academic Equivalency for WPI's updated SYS 501 Concepts of Systems Engineering graduate course.
- Academic Equivalency allows any student who receives a final score of 85% or better to waive the Knowledge Exam for INCOSE's SE Professional certification program.
- The knowledge exam covers the INCOSE Systems Engineering Handbook 4th Edition and is required for the Associate Systems Engineering Professional (ASEP) and Certified Systems Engineering Professional (CSEP) certification levels.
- For more information on the certification program and how to apply, please see <https://www.incose.org/systems-engineering-certification/certification>.



# HOW ONLINE LEARNING WORKS

WPI

Account

Admin

Dashboard

Courses

Calendar

Inbox

Commons

Help

## Dashboard

**CW- American History**  
CW-American History 1

**Dingari Canvas Template**  
DINGARI-TEMPLATE

**Kristin Test Site**  
Shell

**Power Systems Analysis TEMPLATE**  
ECE5500-F12-TEMPLATE

**BUS 501 Spring 2017 UTC**  
BUS501-S17-100  
S17

**CONCEPTS OF SYSTEMS ENGINE...**  
SYS501-S17-100  
S17

### To Do

- 1 Grade A Closer Look: The United States Constitution Written Response 1  
CW-American History 1  
10 points • Dec 16, 2015 at 5pm
- 1 Grade New Assignment Oct 5  
CW-American History 1  
50 points • Oct 13, 2016 at 10:01pm
- 1 Grade End of Week 7 Quiz  
SYS501-F16-1960  
2 points • Oct 31, 2016 at 11:59pm
- 12 Grade Project preference form  
BUS501-S17-100  
100 points • May 4 at 9pm
- 1 Grade MBSE Midterm Exam  
SYS521-S17-103  
100 points • May 15 at 9pm

20 more...

### Coming Up

[View Calendar](#)

- Online Class Meeting  
SYS520-S17-102  
Jun 5 at 7:30pm
- Community Building Strategy  
FIOT-SP17  
0 points • Jun 5 at 11:55pm

- All online classes are housed in Canvas, a web-based Learning Management System.
- Asynchronous delivery allows you to complete your weekly assignments on your own schedule.
- Students should expect to spend an average of 15 hours per week on class work, in addition to lectures.

# PROGRAM LOGISTICS

- Schedule
  - Typically 3-4 courses a year (August, January, March/April, May)
  - 10 week terms
- Current WPI tuition (Academic Year ending June 30, 2021) is \$1,610 per credit, or \$4,830 per three-credit course.
  - Tuition will increase each academic year

**Tuition is due by the first day of course, even if utilizing tuition reimbursement via your employer.**

If you are unable to pay your tuition up-front, you may want to consider Tuition Management Systems (TMS), which allows you to pay in installments. TMS is a third-part service offered by WPI!

[www.wpi.afford.com](http://www.wpi.afford.com)

# THANK YOU!



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## Questions?

