CS at WPI

- Programs
- People
- Projects
- Breadth
- Impacting Society
- Careers
CS Undergraduate Programs

- Computer Science (+ Conc. Cybersecurity)
- Interactive Media & Game Dev
- Robotics Engineering
- Bioinformatics & Computational Biology
- Data Science

and

- Minors in CS, IMGD, RBE, BCB, Data Sci
- BS/MS program (including Cybersecurity)
Computer Science:
The Hub of WPI
Interdisciplinary Programs

BCB: Bioinformatics &
Comp. Biology (BS/MS/PhD)
Cyber: Cybersecurity (BSConc, MS)
DS: Data Science (BS/MS/PhD)
IMGD: Interactive Media
& Game Development (BS/MS)
LST: Learning Sciences
& Technologies (MS/PhD)
Neu: Neuroscience (MS)
RBE: Robotics Engineering (BS/MS/PhD)
SysEngr: Systems Engineering (MS/PhD)

*Includes Math and School of Business
^includes BME, Math and SSPS
Flexibility

- **Wide choices** in courses, projects
- **Recommended background** for courses
- **7-week terms**
- **Frequent** course offerings:
  Over 60 Offerings, over 30 Courses in 2020–21
- **Sample courses:**
  Data Mining, Mobile Computing, Software Security Engineering, Machine Learning
Curriculum at a Glance
# Sample CS First Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CS 1101</td>
<td>Introduction to Program Design</td>
</tr>
<tr>
<td>MA 1021</td>
<td>Calculus I</td>
</tr>
<tr>
<td>EN 2231</td>
<td>American Literature: The Raven, The Whale, And The Woodchuck</td>
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<tr>
<td>CS 1102</td>
<td>Accelerated Intro to Program Design</td>
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<tr>
<td>MA 1023</td>
<td>Calculus III</td>
</tr>
<tr>
<td>FY 1100</td>
<td>Great Problems Seminar:</td>
</tr>
<tr>
<td>BB 1035</td>
<td>Introduction to Biotechnology</td>
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<tr>
<td>PE 1018</td>
<td>Co-Ed Volleyball</td>
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<tr>
<td>PE 1011</td>
<td>Touch Football</td>
</tr>
<tr>
<td>SP 1523</td>
<td>Elementary Spanish I</td>
</tr>
<tr>
<td>ECON 1110</td>
<td>Introductory Microeconomics</td>
</tr>
</tbody>
</table>
Course Planning Options

- Follow flow of recommended courses for structured program.
- Exploit flexibility for courses and projects that are the best fit for you.
- Pursue “themes” in the courses and projects that you choose, such as software and interface design, application development, cybersecurity, data analysis, health, ...
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People

Students

- Courses
- Projects

Faculty

- Research
- Advising
CS Faculty

- Faculty teach
- Graduate and Senior teaching assistants assist

Faculty Awards
- Innovative teaching
- Teaching technology fellowships
- Best paper – some with undergraduate students!
CS Student Organizations

- Association for Computing Machinery
  - BBQs, hackathons
- Women in CS
  - Networking Dinner
- CS Honor Society UPE
  - Mock technical interviews
- Cybersecurity Club
  - Competitions
- Game Development Club
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Projects

- **Real** solutions to **real** problems
- Many with **industry, govt labs**
- **Fun, challenging, professional**
- Course projects
CS Major Project Centers: Wall St

Deutsche Bank
Morgan Stanley
Bank of America
JPMorgan Chase
WPI
CS Major Project Centers: Si Valley
Other CS Project Sponsors

Microsoft

IBM

Fidelity Investments

GENERAL DYNAMICS

MTA SZTAKI
COMPUTER AND AUTOMATION RESEARCH INSTITUTE
HUNGARIAN ACADEMY OF SCIENCES

LINCOLN LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

AMD

ATI

Cisco Systems

EMC²

WPI
CS Projects 2020

Sample topic areas:
- Games & Multimedia Networking
- Security & Crypto
- Computer Networks
- Software Engineering
- Machine Learning
- Artificial Intelligence
- Cloud Computing
- Robotics & Embedded Systems
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Global Project Centers
CS Research Groups & Labs

- Center of Excellence in Cybersecurity Research
- Applied Logic and Security
- Artificial Intelligence
- Collaboration & Creativity Support
- Congestion Control
- Database Systems
- Human Interaction in Virtual Environments
- Human-Robot Interaction
- Image Science

More...
CS Research Groups & Labs

- Knowledge Discovery & Data Mining
- Mobile Graphics
- Performance of Distributed Systems (Networks)
- Research in Filtering & Recommendation
- Software Engineering
- Software Tools Technology
- Theory
- Tutoring
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WPI CS Impacting Society

Cyber–Physical Systems
Mobile Applications
Medicine & Health
Security & Privacy
Social Networking/Crowd Sourcing
Scientific Discovery
Energy/Sustainability
Weather Forecasting
Data Analytics
Transportation & Utility Systems
Online Education

SOCIETAL IMPACT

CORE CS

Computing Ring

Networks/Operating Systems
Software/Interface Design
Artificial Intelligence
Theory/Algorithms
Computational Science
Cloud Computing
Computational Science
Bioinformatics
Learning Sciences
Big Data
Intelligent Tutoring
Online Education

Augmented Reality
Video Games
Elder Care
Space Exploration
Manufacturing
Robotics
Interactive Media & Gaming

Science

Computing Ring

WPI
Utility and Health Systems

- Home water usage: Computer Science problems involve sensing, analytics, visualization, prediction.
- Looking for “signal” in apparent noise.

Social Networking
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Post-Graduation Opportunities

2019 WPI CS: Close to full placement, starting salary: $88,750.

Sep’19: CollegeFactual ranks WPI CS as 2nd best program in the U.S.

Students interested in Cybersecurity can earn scholarships as early as Junior year for BS or BS/MS program through NSF-supported grant.
Notable Employers

Microsoft
wayfair.com
MITRE

athenahealth
Google
United Health Group

KAYAK
Google
IBM

Dell
Draft Kings

AMD
ATI
Vistaprint

Fidelity

Lincoln Laboratory
Massachusetts Institute of Technology

hp
WPI
New Building: Interdisciplinary Programs and Student Services

More CS Info: http://web.cs.wpi.edu/admissions

Additional questions can be directed to:
Craig Wills, CS Professor and Dept Head, cew@wpi.edu