Accelerating the Pace…

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Accelerating the Pace of Engineering and Science
Accelerating the Pace of Discovery, Innovation, Development, and Learning in Engineering and Science
MathWorks Product Families

MATLAB
for technical computing

SIMULINK
for simulation and Model-Based Design
MathWorks at a Glance

Earth’s topography on a Miller cylindrical projection, created with MATLAB and Mapping Toolbox

Key markets

- Aerospace and defense
- Automotive
- Biotech and pharmaceutical
- Communications
- Education
- Electronics and semiconductors
- Energy production
- Financial services
- Industrial automation and machinery
- Medical devices
Trend: Computing resources in flux

- Assume students will have laptops and/or tablets, and want to work from anywhere
- Students may or may not be physically on campus to use labs
- Computer labs shrinking or disappearing, or reserved for physical experiments
- Servers and clouds (private and public) at various stages of implementation and use
Trend: Computing resources in flux
Response: Provide as much flexibility as possible

- Cluster
- Cloud
- Student laptop
- Computer lab PC
Trend: Computing resources in flux

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- iPhone
- iPad
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Trend: Hands-on is fun, engaging, and instructional
Accessible and low-cost real-time hardware
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Accessible and low-cost real-time hardware
Response: Personal real-time systems for students

- A built-in feature of Simulink, introduced March 2012
- Generates an executable application from a Simulink model and runs it on supported target hardware
- No add-on products required

- Arduino: $40-80
- BeagleBoard: $195
- LEGO® MINDSTORMS® NXT: $530
Trend: Hands-on is fun, engaging, and instructional
Accessible and low-cost real-time hardware
Response: Personal real-time systems for students

- A built-in feature of Simulink
- Included in MATLAB & Simulink Student Version
- Downloadable packages include:
  - Simulink block library
  - Help browser content
  - Demos and tutorials
  - Third-party software (build tools)
Trend: Proliferation of student competitions
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Response: More... smaller-scale, virtualized
Trend: Systems engineering emphasis in industry

Chevrolet Volt

Credit: General Motors LLC 2011
Trend: Systems engineering emphasis in industry

Engine
Generator

Control
Strategies

Electric
Drive Unit

Li-ion
Battery

Credit: General Motors LLC 2011
Trend: Systems engineering emphasis in industry
Response: Guidance and exposure to education
Trend: Curriculum development and other support

Response: Academic support possibilities

- Curriculum development in engineering, science, mathematics or finance
- Lab course development
- Faculty research projects
- Projects for undergraduates/graduates
- Industry advisory boards/programs
- Prizes for student-focused contests, projects, events
- Student competitions
- We are hiring!

- Over 200 openings

- [www.mathworks.com](http://www.mathworks.com)
What trends do **you** want to accelerate?