

SYSTEMS ENGINEERING

DESCRIPTION

Systems engineering is an interdisciplinary field of engineering focusing on how to design and manage complex engineering projects over their life cycles. Issues such as reliability, logistics, team coordination, evaluation, and other disciplines become more difficult when dealing with large, complex projects. SE deals with work processes, optimization methods, and risk management tools in such projects. It overlaps technical and human-centered disciplines such as control engineering, industrial engineering, organizational studies, and project management.

TOPICS

Automation	Neuroinformatics
Control and Robotics	Petroleum and Oil
Communication & Networks	Production Systems
Cryptography	Risk Management
Information Science	Safety and Efficiency
Information Systems	Supply Chain Management
Development Life Cycle	Systems Design
Energy Systems	Systems Development
Environmental Concerns	Transportation
Military Specification Testing	Quality Assurance

SAMPLE WORK SETTINGS

Communication	Manufacturing
Construction	Non-Profit Organizations
Facilities Management	Pharmaceuticals
Government Consulting	Transportation
Governmental Entities	Utilities/Energy
Information Technology	Waste Management

SAMPLE OCCUPATIONS

Process Control Technology	Systems Engineer
Principal Corporate SE	Associate Systems Engineer
IT Systems Engineer	Control Systems Engineer
Advisory Systems	Systems Engineer Supervisor
Technical Consultant	Computer Systems Engineer

ONLINE RESOURCES

SAMPLE EMPLOYERS

Accenture	General Dynamics
ADP Payroll Services	Hewlett-Packard
Allstate Insurance	IBM
Amazon	Lockheed Martin
BAE Systems	Louis Berger Group
Boeing	Microsoft
Booz Allen Hamilton	MITRE
CACI International	Northrop Grumman
Dell	Oracle
FDA	Raytheon
Fluor	SAIC
GE Energy Management	US Department of State
	Verizon

JOB SEARCH RESOURCES

www.engcen.com
www.engineerjobs.com
www.graduatingengineer.com
www.thecareerengineer.com
www.mechanicalengineer.com
www.incose.org

PROFESSIONAL ORGANIZATIONS

[International Council of Systems Engineers](#)
[National Defense Industrial Engineers](#)
[Institute of Industrial Engineers](#)
[National Society of Professional Engineers](#)
[National Society of Black Engineers](#)
[Society for Engineering and Management Systems](#)

STUDENT ORGANIZATIONS

[National Society of Black Engineers](#)
[Engineers Without Borders](#)
[Institute of Electrical and Electronics Engineers \(IEEE\)](#)
[Society of Women Engineers](#)
[GWU E-Council](#)



Center for
Career Services

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EDUCATION

The George Washington University, Washington, DC

Bachelor of Science in Systems Engineering; Minor in Computer Science

May 2015

TECHNICAL SKILLS

Languages: C, C++, Java, Javascript, COBOL, SQL, FORTRAN, XML, HTML, JCL, Ruby, Python

Applications: Cadence, Verilog

Operating Systems: Windows, Unix, Linux, Mac OS

Database Systems: SQL Server, MySQL

Software: Adobe Photoshop, Illustrator, Dreamweaver, Microsoft Office

TECHNICAL PROJECTS

Pizza Simulator (team of 3)

January - April 2012

- Simulated a real-life pizza shop given specification and constraints to analyze variable process options and ultimately determine and present the optimal pizza configuration
- Created multiple process configurations to analyze the outputs of each to determine significant factors

Accomplishment: Wrote project report to describe and validate each step of the simulation and provide a proposal for an optimal solution to the production problem

Introduction to Electrical/Computer/Systems Engineering (team of 4)

September - November 2011

- Utilized InteractiveC to create a code for fluid separator
- Built website to allow for printable ticket purchasing, viewing of current movies showing links to movie websites, listing of concession stand items and prices, and application submission for employment

Accomplishment: Introduced a cost-effective improvement in the fluid separator process

PROFESSIONAL EXPERIENCE

ChemRisk, San Francisco, CA

June - August 2013

Health Science Intern

- Provide creative and scientifically rigorous approaches to answering questions about the human health hazards posed by chemical, biological, pharmaceutical, and radiological agents
- Reorganized main company website to ensure integrity

Accomplishment: Completed the revised company website in 30 days

ABC Corporation, Washington, DC

Software Engineer Intern

January - May 2013

- Managed production support issues and ensured quick, timely resolution
- Developed modules and wrote design documents
- Tested plans and user documentation

Accomplishment: Produced a report to document post-test production design changes

ACTIVITIES

GW Engineers without Borders, Member, September 2012-Present

