Software
Engineering

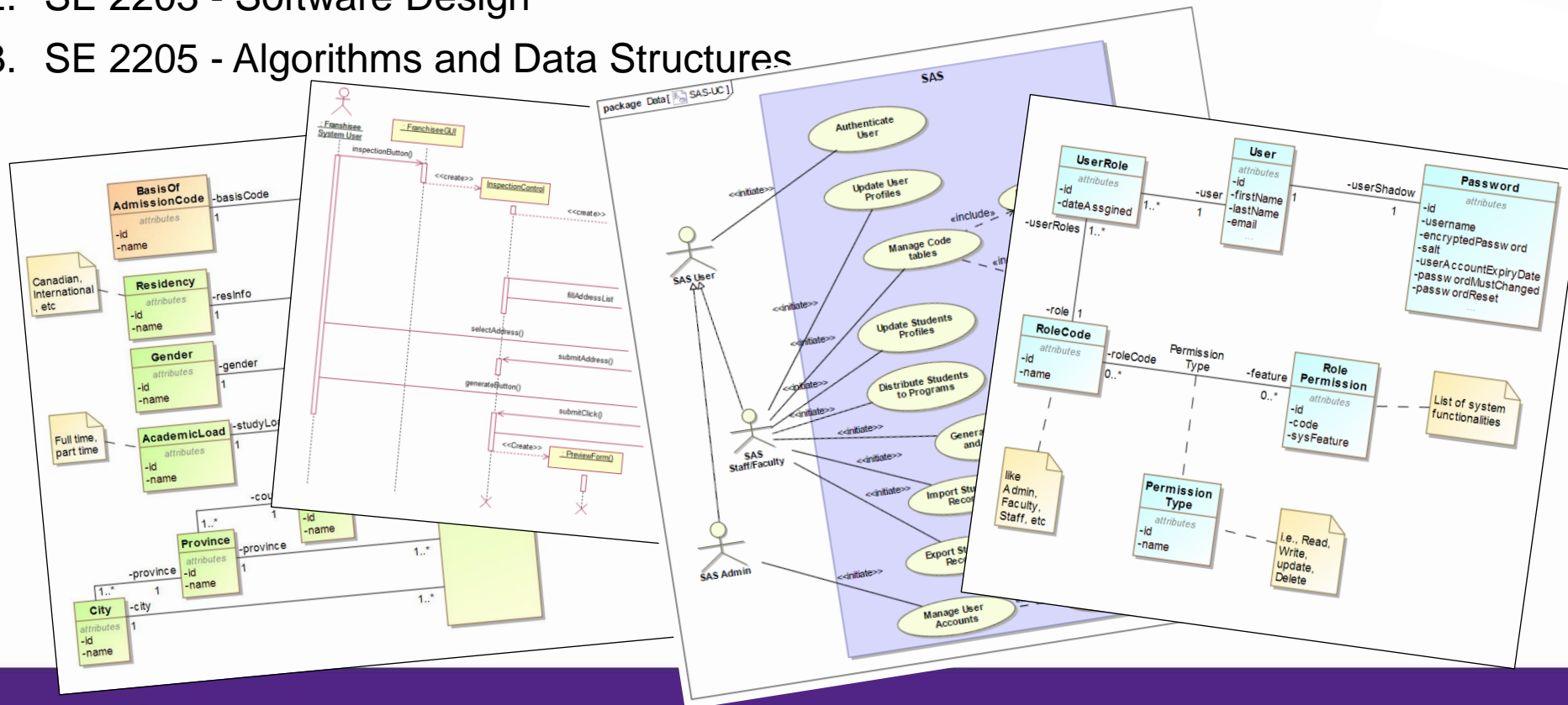# What is Software Engineering?

Software engineering is the application of knowledge, processes, technical skills, and managerial experience to develop software systems.

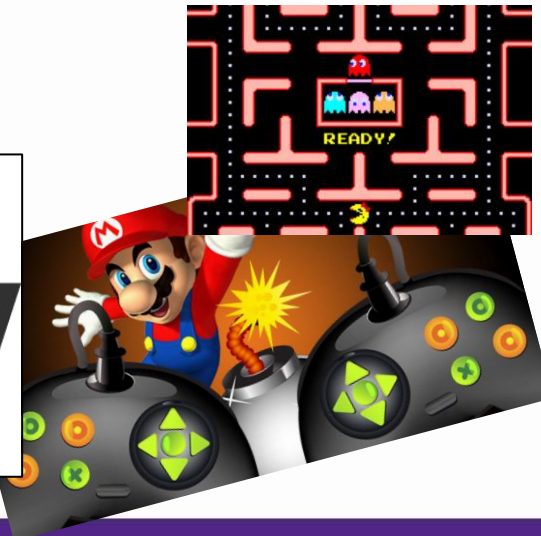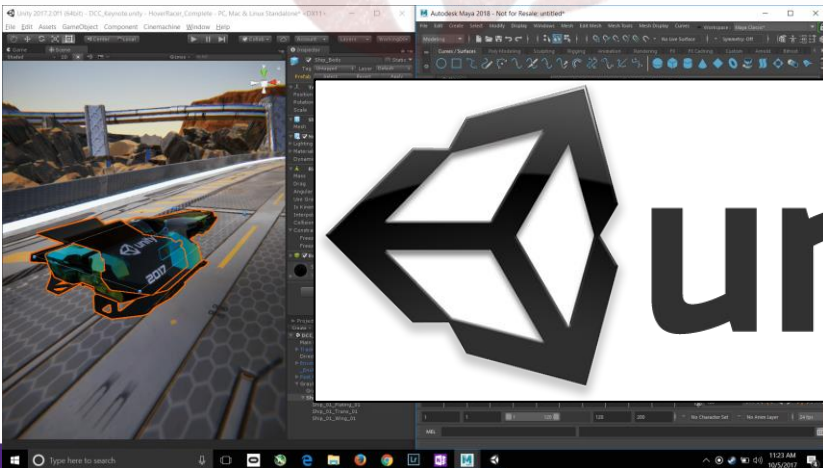# knowledge, processes, technical skills, and managerial experience

1. SE 2202 - Scripting Programming Language
2. SE 2203 - Software Design
3. SE 2205 - Algorithms and Data Structures

knowledge, processes, technical skills, and managerial experience
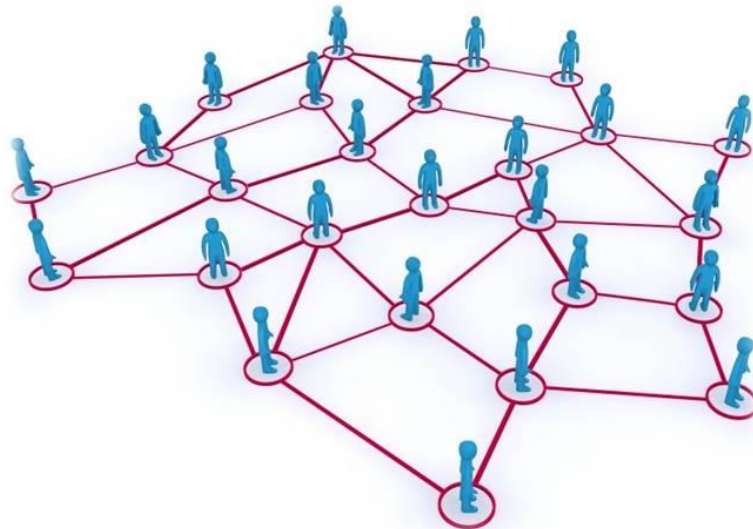
1. SE 2250 - Software Construction
2. SE 3310 - Theoretical Foundations of Software Engineering
3. CS 3346A/B - Artificial Intelligence I (TE)
4. CS 4442A/B - Artificial Intelligence II (TE)
5. CS 3388A/B - Computer Graphics I (TE)
6. CS 4482A/B - Game Engine Development (TE)

knowledge, processes, technical skills, and managerial experience

1. ECE 4436 - Networking: Principles, Protocols, and Architecture
2. SE 3314 - Computer Networks Applications
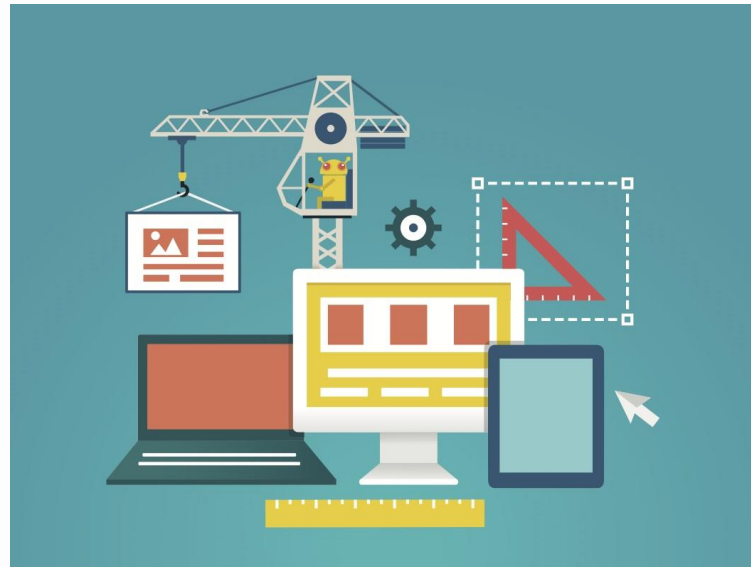3. SE 3313 - Operating Systems for Software Engineering

Will learn how to develop networking and mobile applications

knowledge, processes, technical skills, and managerial experience

1. SE 3316 - Web Technologies
2. SE 3309 - Database Management Systems
3. SE 3353 - Human-Computer Interface Design
4. SE 4455 - Cloud Computing
5. SE 4472 - Information Security

Will learn the state of the art of the Web and Desktop applications

knowledge, processes, technical skills, and managerial experience

- SE 3352 - Software Requirements and Analysis
- SE 3351 - Software Project and Process Management
- SE 3350 - Software Engineering Design I
- SE 4450 - Software Engineering Design II

knowledge, processes, technical skills, and managerial experience

- Programming Languages

and many more …

Opportunities in Software Engineering

Sample Careers

- Software Engineer
- Applications Analyst
- Application Programmer
- Information Systems Manager
- Chief Information Officer
- Data Modeling Specialist
- Video Game Developer
- Website Developer
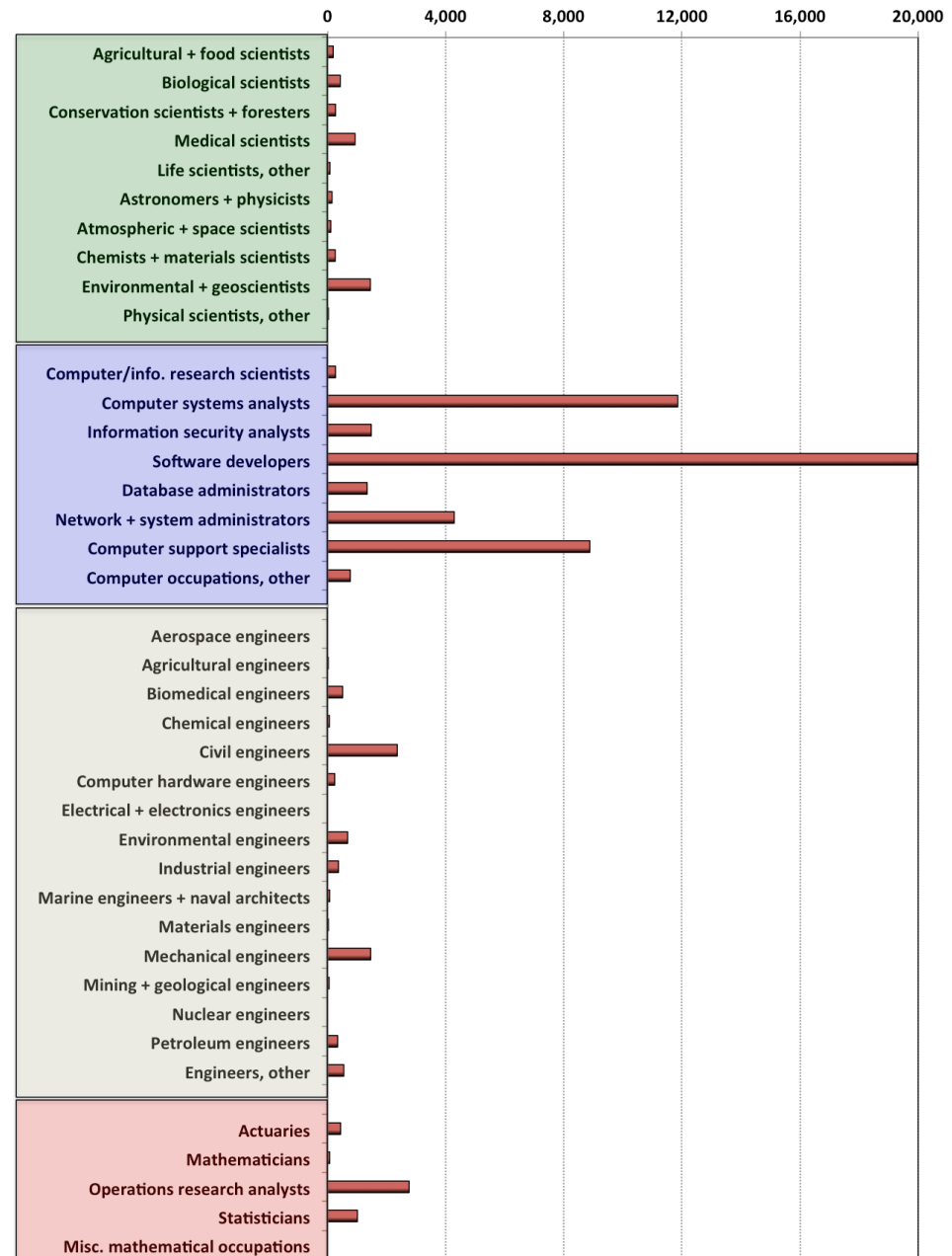- User Interface Designer
- Network Systems Engineer

- … AND many more!

Types of Employers

- Computer Consulting Firms
- Government Departments and Agencies (all levels)
- Educational Institutions
- Information Technology Industries
- Financial Institutions
- Computer and Software Industries
- Robotics Industries
- Hi-tech Industry
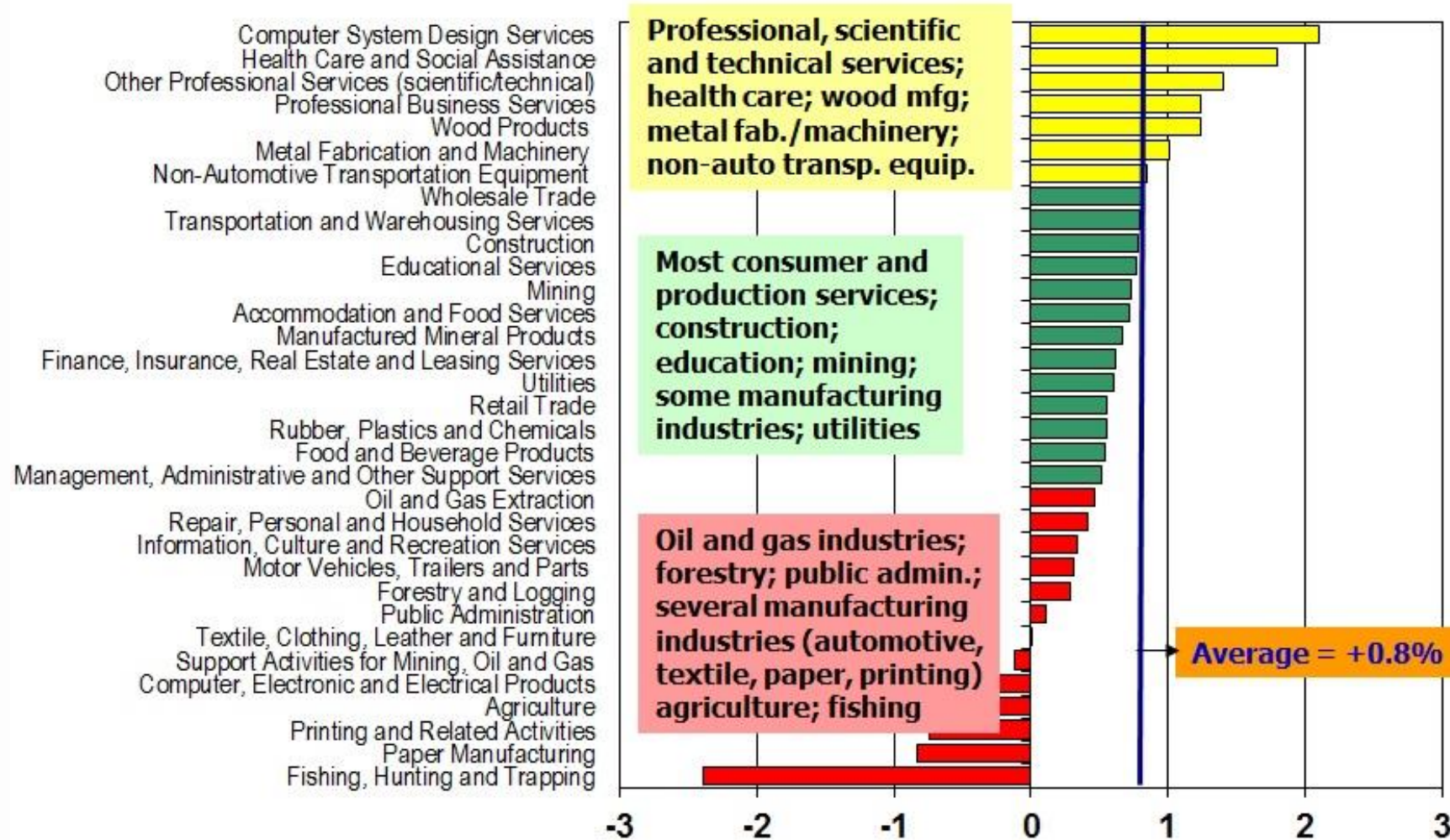- Information Processing Industries

According to the U.S. Bureau of Labor Statistics (BLS), Software related jobs have the highest employment growth rate.

US-BLS Annual New U.S. STEM Jobs Thru 2024

Data Source: US-BLS Employment Projections (www.bls.gov/emp/ep_table_102.htm)

Western Engineering

Projected employment growth, covered by the Canadian Occupational Projection System (COPS), over the period 2015-2024
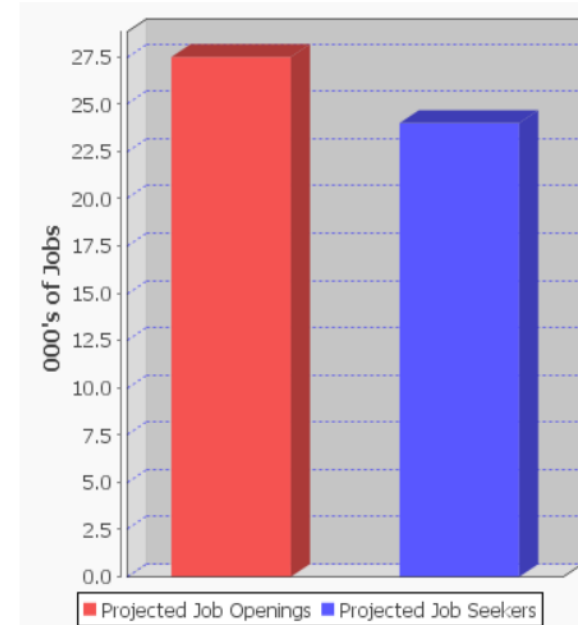
Based on the Canadian Occupational Projection System (COPS), Software Engineers positions are expected to face labour shortage conditions over the period of 2019-2028 at the national level.

Projection of Cumulative Job Openings and Job Seekers over the Period of 2019-2028

	Level	Share
Expansion Demand:	14,800	54%
Retirements:	9,700	35%
Other Replacement Demand:	1,600	6%
Emigration:	1,400	5%
Projected Job Openings:	27,500	100%

	Level	Share
School Leavers:	25,200	105%
Immigration:	16,500	69%
Other:	-17,600	-73%
Projected Job Seekers:	24,000	100%

Legend: ■ Projected Job Openings ■ Projected Job Seekers

Western Engineering

Software Engineering Options

- Software Engineering and Business
- Software Engineering and Law
- We also offer many other dual degrees

Western
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