



# Introduction

CSC 1200 - Principles of Computing



# What is Computer Science?

“Computer Science is no more about computers than astronomy is about telescopes.” (E.W. Dijkstra)

- **Computer science** (also called computing science) is the study of the theoretical foundations of information and computation and their implementation and application in computer systems.

Mathematical Foundations

Databases

Algorithms and Data Structures

Concurrent, Parallel, and Distributed Systems

Artificial Intelligence

Programming Languages and Compilers

Communication and Security

Scientific Computing

Computer Architecture

Software Engineering

Computer Graphics

Theory of Computation

# Top 15 Jobs in America According to Glassdoor for 2022

[https://www.glassdoor.com/List/Best-Jobs-in-America-LST\\_KQ0,20.htm](https://www.glassdoor.com/List/Best-Jobs-in-America-LST_KQ0,20.htm)

	Job Title	Median Base Salary	Job Satisfaction	Job Openings
#1	Enterprise Architect	\$144,997	4.1/5	14,021
#2	Full Stack Engineer	\$101,794	4.3/5	11,252
#3	Data Scientist	\$120,000	4.1/5	10,071
#4	Devops Engineer	\$120,095	4.2/5	8,548
#5	Strategy Manager	\$140,000	4.2/5	6,977
#6	Machine Learning Engineer	\$130,489	4.3/5	6,801
#7	Data Engineer	\$113,960	4.0/5	11,821
#8	Software Engineer	\$116,638	3.9/5	64,155
#9	Java Developer	\$107,099	4.1/5	10,201
#10	Product Manager	\$125,317	4.0/5	17,725
#11	Back End Engineer	\$112,384	4.2/5	6,221
#12	Cloud Engineer	\$118,999	4.0/5	10,689
#13	HR Manager	\$91,502	4.3/5	7,276
#14	Business Development Manager	\$89,496	4.2/5	9,263
#15	Information Security Engineer	\$116,919	4.1/5	7,264

# Employment in STEM Occupations 2022 - 2032

**Table 1.11 Employment in STEM occupations, 2022 and projected 2032**  
**(Employment in thousands)**

Occupation category	Employment, 2022	Employment, 2032	Employment change, numeric, 2022–32	Employment change, percent, 2022–32	Median annual wage, dollars, 2022 <sup>(1)</sup>
<b>Total, all occupations</b>	164,482.6	169,148.1	4,665.5	2.8	46,310
<b>STEM occupations<sup>(2)</sup></b>	10,365.0	11,487.4	1,122.4	10.8	97,980
<b>Non-STEM occupations</b>	154,117.6	157,660.7	3,543.1	2.3	44,670

<https://www.bls.gov/emp/tables/stem-employment.htm>

# Why Choose Computer Science?

**Computing is part of everything we do!**

- Expertise in computing enables you to solve complex, challenging problems.
- Computing enables you to make a positive difference in the world.
- Computing offers many types of lucrative careers.
- Computing jobs are here to stay, regardless of where you are located.
- Expertise in computing helps you even if your primary career choice is something else.
- Computing offers great opportunities for true creativity and innovativeness.
- Computing has space for both collaborative work and individual effort.
- Computing is an essential part of well-rounded academic preparation.
- Future opportunities in computing are without boundaries.



# You Might Like this Field If You...

- Pick up programming languages easily
- Enjoy being a lifelong learner
- Like thinking logically and problem-solving
- Embrace creativity and design aspects
- Act persistently to figure out solutions
- Have an eye for details



# Job Options in Computer Science

- Artificial intelligence and machine learning engineer
- Business analyst
- Chief information security officer
- Cloud computing engineer
- Researcher
- Data scientist
- Database administrator
- Full-stack developer
- Web developer
- Network architect
- Software tester
- DevOps engineers
- Automation engineer
- Many more!