

PORTFOLIO 1

Computer science is the study of computers and computing, including their hardware, software, theoretical underpinnings, and applications in information processing. Studying algorithms and data structures, designing computers and networks, modeling data and information processes, and artificial intelligence are all included in the field of computer science. Since computer science has some roots in mathematics and engineering, it uses methods from fields like electronic circuit design, probability and statistics, and queueing theory. Similar to more conventional fields like **engineering, law, and medicine**, computing has developed into a separate career. It highlights that **computers is a science with its own theories**, methods, and applications rather than only a technology. Although reading and math have always been essential components of school, **digital literacy is now required in contemporary educational systems**. Digital literacy is an essential life skill that promotes academic and social success in addition to professional readiness. The importance of digital literacy is **increasing as technology becomes more pervasive in daily life**, and students must acquire these abilities in order to succeed in both personal and professional settings.

Computing Disciplines and Majors

1. Computer Engineering – builds a solid basis on mathematics and algorithms.

They are trained to find the most effective solutions for new issues, create new technology, and develop unique cutting-edge concepts. They develop and test software that applies. Putting theory into practice, creating advancements in domains such as robotics, computer vision, intelligent systems, and bioinformatics. It applies them to the problems of designing computers and computer-based devices.

Core Courses

- Computer Architecture and Organization
- Circuits and Electronics
- Data Structure and Algorithms
- Digital Design
- Embedded Systems
- Computer Networks
- Signal Processing
- Software Design
- Information Security

On the Job

- Design hardware for communication systems.

- Develops software-controlled hardware products including as iPods, smartphones, and gaming consoles.
 - Focuses solely on hardware design, including digital electronics, with minimal involvement in software design.
 - Evaluates and improves the usability (user experience) of computers.
 - Take existing equipment and modify it for unique applications.
2. Computer Science – spans a wide range, from its theoretical and algorithmic foundation to cutting-edge developments. Their studies integrate business and computing education, which may have a computing or managerial focus. They cooperate closely with clients determine how information and technology may provide competitive advantage.

Core Courses

- Data structures and algorithms
- Graphics and visualization
- Human-computer interaction
- Software development fundamentals
- Artificial intelligence
- Programming and programming languages
- Networking and communications
- Operating systems
- Parallel and distributed computing

On the Job

- Utilize new theories to generate cutting edge software.
 - Concentrate on the theoretical components of technology.
 - Apply theory to study and design software solutions.
 - Use a variety of basic knowledge for adapting to new technologies and concepts.
 - Apply mathematical and theoretical knowledge in order to compare create computational solutions and choose the best one.
3. Information systems - focus on integrating information technology solutions and business processes to meet the information needs of businesses and other enterprises, enabling them to achieve their objectives in an effective, efficient way. They provide computer technology solutions for many institutions, including businesses, governments, hospitals, and schools. They prioritize technology above content.

Core Courses

- Foundations of Information Systems
- Data and Information Management
- Enterprise Architecture
- IS Project Management
- Systems Analysis and Design
- Knowledge Management and

- Business Intelligence Systems
- IS Security, Privacy and Ethics
- IS Strategy, Management & Acquisition
- IT Infrastructure

On the Job

- Combines commercial and technical knowledge.
- Chooses computer systems to streamline corporate procedures.
- Focuses on information and sees technology as a tool for creating, processing, and disseminating it.
- Utilizes technology to provide a company a competitive advantage.
- Manages projects, software development teams, or a computer department.

4. Information Technology - refers to undergraduate degree programs that prepare students to meet the technology needs of business, government, healthcare, schools, and other kinds of organizations. IT, as an academic discipline, focuses on meeting the needs of users within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies.

Core Courses

- IT Fundamentals
- Programming Fundamentals
- Fundamentals of Networking

- Information Assurance and Security
- System Administration and Maintenance
- IT infrastructure and Project Management
- Fundamentals of Web Systems
- Database Systems

On the Job

- Integrates hardware and software.
- Uses technology to solve practical issues.
- Provides support within an organization to assist others in making the greatest use of the organizations technical and information capabilities.
- Adapts to new technologies and ideas by drawing on a broad foundation of knowledge.
- Understands both technology and business, but with a greater emphasis on the technical side.

5. Software engineering - create and maintain large-scale software systems.

Software engineers use mathematical and computer scientific principles, as well as engineering methods, to create customer-focused software. Software engineers collaborate with customers, assess their needs, and manage complicated, safety-critical software projects. They concentrate on methods for ensuring software reliability creating and keeping up suitable software solutions.

Core Courses

- Mathematical and Engineering

- Fundamentals
- Programming Fundamentals
- Software Modeling and Analysis
- Software Design and Processes
- Software Quality Assurance
- Software Security
- Software Project Management
- Data Structures and Algorithms

On the Job

- Concentrates on large-scale systems development.
- Develops testing methodologies for large-scale systems.
- Uses theory to investigate and build software solutions.
- Creates software systems that are maintainable, dependable, efficient, and meet client expectations.
- Uses solid engineering methods to develop computer applications.
- Leads or manages a team of software developers.

ANALYSIS

What I've observed is that computer science provides solutions, innovations, and challenging problems. Many of them are transferable abilities that will help students study

in other disciplines while also enhancing their communication, critical thinking, and life skills needed to function in today's ever-changing digital world. Not just only computer science there are others like information technology, computer engineering, software engineering, and information systems. As a discipline, it covers the theoretical basis, design, and implementation of computational systems and algorithms for information processing. Students require to learn the disciplines to prove that they can build their own projects and provide teamwork with their group. If you are competent with your skills, you can be versatile on a certain scenario. Focusing on the five computing major disciplines that I mentioned, if you understand you can adapt to new technologies, create, and contribute to society's complex digital infrastructure, resulting in more satisfying and impactful professions. Learning different computing disciplines and majors can lay the groundwork for a successful and rewarding career in the technology business which it can help you develop a wide range of abilities, such as problem-solving, critical thinking, creativity, and adaptability, all of which are necessary for success in today's quickly changing technological scene. For example if you pick computer science and software engineering, you can develop a game, creating data structures and algorithms. While computer engineering, information systems, and information technology, it focuses on information, software and hardware. In conclusion, computer science as discipline is very important in our lives that they can find solutions to the world that we're facing problems. Without the skillsets, this would not help ourselves on finding the solution and we must communicate our people to solve the issues and problems. Technology is evolving in our lives that we must adapt the things that we don't understand fix the issues we had faced and not make the common mistakes.

Getting to Know Me

I am Marc Laurey B. Chu, I graduated elementary at St. Anne's Playschool, graduated junior and senior high at Ormoc Immaculate Conception School Foundation Inc. and ACLC College of Ormoc. My awards for elementary until senior high were With Honors. The reason I picked up BSCS is because when my brothers picked BSCE they focused on hardware and since there is no software, I will take the position to go for software and I want to know the apps behind the code itself and solve problems.

References

DENNING, P. J., & TEDRE, M. (2021). Computational Thinking: A Disciplinary Perspective. Informatics in Education. <https://doi.org/10.15388/infedu.2021.21>

Denning, P., & Rosenbloom, P. (2009). The profession of IT - Computing: the fourth great domain of science. Communications of the ACM, 52, 27–29. https://www.researchgate.net/publication/220420441_The_profession_of_IT_-_Computing_the_fourth_great_domain_of_science

Lunt, B., & Ekstrom, J. (2008). What Distinguishes Each of the Major Computing Disciplines? https://www.laccei.org/LACCEI2008-Honduras/Papers/CD092_Lunt.pdf

Belford, G. G., & Tucker, A. (2019). Computer science. In Encyclopedia Britannica. <https://www.britannica.com/science/computer-science>

Connolly, R., & Uzoka, F.-M. (2017). COMPUTING DISCIPLINES A QUICK GUIDE FOR PROSPECTIVE STUDENTS AND CAREER ADVISORS. <https://ceric.ca/wp-content/uploads/2018/06/Computing-Disciplines-A-Quick-Guide-for-Pro prospective-Students-and-Career-Advisors.pdf>