Course Syllabus
Chaminade University Honolulu
3140 Waialae Avenue - Honolulu, HI 96816

Course Number: CIS-330-01-1
Course Title: Computer Architecture, Technology in Action
Department Name: Management Science, Business Analytics, Computer Information Systems (CIS)
College/School/Division Name: School of Business and Communication
Term: Fall 2021 Semester
Course Credits: 3
Class Meeting Days: Mondays, Wednesdays, and Fridays
Class Meeting Hours: 13:30AM – 14:20 AM HST
Class Location: Sullivan 201 Classroom

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Office Hours: MWF, 8:20AM-9:20AM; 11:45AM-12:45PM HST
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CHAMINADE UNIVERSITY MISSION STATEMENT
Chaminade University offers its students an education in a collaborative learning environment that prepares them for life, service, and successful careers. Guided by its Catholic, Marianist and liberal arts educational traditions, Chaminade encourages the development of moral character, personal competencies, and a commitment to build a just and peaceful society. The university offers both the civic and church communities of the Pacific region its academic and intellectual resources in the pursuit of common aims.

> ### DARE TO LEARN. DARE TO CHANGE.
> Digital learning removes limits and gives us the freedom to provide education anytime and anywhere, empowering us to overcome our most difficult challenges.[1]

INSTITUTE FOR THE FUTURE - FUTURE OF LEARNING[2]

"New technologies, work patterns, and practices are disrupting how we learn, where we learn, and what we need to learn. The definitions of teacher and student are becoming fluid, and education itself is moving out of episodic experiences in traditional institutions and their classrooms, into learning flows that course through our daily lives. People of all ages dip in and out of these flows, engaging in continuous learning channels that are contextually relevant and always available. Opportunities and resources for learners are no longer scarce but abundant; they are pervasive rather than localized. Such a transformation calls on educational institutions, learners, and our society to challenge the assumptions, structures, and principles that have worked thus far."

1. COURSE INTRODUCTION – WHY DO YOU NEED TO KNOW HOW COMPUTERS WORK?

Did you ever think what computers do, how they work and why scientists invented them? No, I am not going to answer these questions just yet but if you wonder and if you are curious, enroll in CIS330 course – Computer Architecture to explore, discover and experience Technology in Action.

This course uses technology to teach technology. It is a learning system that pushes our imagination of what is possible in technology and what is supportive in teaching. It provides with the way students are learning today.

Students should investigate the future from a different perspective and ask the question – what future skills, proficiencies and abilities are required to find a job that fulfills their dreams.

This course has been redesigned to address the needs of the liberal arts students to acquire computer architecture knowledge. A textbook that I am recommending, helps students gain the knowledge to understand why and how to use computers efficiently. Computers are the foundation for the richness of the applications which resides on the Internet. Because of the Internet, computers communicate and connect seamlessly Gmail of my friend in Hong Kong with my Outlook mail in Honolulu. This was not possible just about 40 years ago, in 1971 on the ARPANET.

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[1] Pearson Higher Ed

[2] The Institute for the Future (IFTF) is an independent, nonprofit strategic research group with more than 40 years of forecasting experience. The core of our work is identifying emerging trends and discontinuities that will transform global society and the global marketplace. The Institute for the Future is in Palo Alto, California.

Using myITlab portal students have everything they need in one place. Students can use the interactive eText that is fully integrated with all media. It provides immediate feedback on quizzes and other activities keeping students engaged and motivated.

You will learn how to build mobile applications, which you would use daily on your cell phones. MyITlab provides the MIT's App Inventor free tool which students will be able to use to gain knowledge and skills to create your own applications on the mobile apps.

 "Network management includes the deployment, integration, and coordination of the hardware, software and human elements to monitor, test, poll, configure, analyze, evaluate, and control the network and element resources to meet the real-time, operational performance and Quality of Service requirements at a reasonable cost."[3]

The Network Administrator manages the network using network application tools. A centralized network management station is in the Network Operations Center (NOC). Network Administrator controls the collection, processing, analysis, and/or display of network management information. NOC is the center of all actions that are initiated to control network behavior and interactions with the network devices.

Technology is continuously evolving, and students must have knowledge and acquiring skills that will be used in the future. The six drivers of change are the reasons that the future is tomorrow:[4]

1. Extreme longevity: Increasing global life spans changes the nature of careers and learning. http://www.ted.com/talks/henry_markram_supercomputing_the_brain_s_secrets?language=en ← fascinating!

2. Rise of the smart machines and systems: Workplace automation nudges human workers out of rote, repetitive tasks.

3. Computational world: Massive increases in sensors and processing power make the world a programmable system.

4. New media ecology: New communication tools require new media literacies beyond text.

5. Super-structed organizations: Social technologies drive new forms of production and value creation.

6. Global mobility: No boundaries on anywhere and anytime. Global interconnectivity and social networking puts diversity and adaptability at the center of organizational operations.

TEXTBOOK:

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[3] T. Saydam, T. Magedanz "From Networks and Networks Management into Service and Service Management," *Journal of Networks and Network Management,* Vol.4, No.4 (Dec.1996), p345-348
[4] Future Work Skills 2020, The Institute for the Future (IFTF)

CIS 330 Computer Architecture (3 Credits)

Textbook ONLY: Alan Evans, Kendall Martin and MaryAnn Poatsy "Technology in Action", 15e ISBN-13: 978-013-4834801

Minimum requirements for this course are an access code with eText. Visit CUH bookstore for a competitive pricing.
More info students receive a week before course start's date.

2. COURSE DESCRIPTION FROM CUH CATALOG

The course covers the following fundamentals: CPU, main memory, I/O devices and system interconnections. The course defines the concept of computer architecture versus computer organization. Four basic functions of the computer: data processing, data storage, data movement and control are taught. Designing computers for performance leads to examining various modern architectures and techniques such as chip architecture and parallelism. Prerequisite: None. Offered fall semester.

3. COURSE LEARNING OUTCOMES. AFTER COMPLETION OF THE COURSE STUDENT WILL BE ABLE:

1. Recall a brief history of the computer (knowledge).

2. List and define computer components, terminology and concepts (knowledge).

3. Distinguish concepts of computer architecture versus computer organization (comprehension).

4. Name and describe 3 major components of the computer architecture: processor, memory and Input / Output devices and answer question what's inside my computer (comprehension and synthesis).

5. Demonstrate the role and function of each component allowing for applications to run and transfer information from the source to destination. For example, Google Gmail on Google Chrome sends data and displays information on the Microsoft Internet Explorer as Outlook email (comprehension and application).

6. Discover how easy is to make your own mobile app through participation in the project using MIT's App Inventor free tool (knowledge, skills and applications).

7. Introduced to the nature of services provided by the computer: the client-server, mobile devices (iPhone, iPad) and peer-to-peer paradigm and will analyze which paradigm should be used based on its characteristics (analysis).

8. Formulate components and functions of the network management and evaluate and prepare high level network management strategies in a data center networking (synthesis and evaluation).

9. Gain proficiency in understanding wireless, mobile networks and multimedia networking (knowledge and comprehension).

10. Learn how the use of the technology is changing the World (knowledge and comprehension).

4. PROGRAM LEARNING OUTCOMES
1. Desire to teach students about information technology (Computer Information Systems, CIS Minor) to gain the knowledge about our digital world and feel confident about getting a dream career/job tomorrow.

2. Proficiency in understanding how computers change our lives every day and subsequently how technology changing the World.

3. Knowledge of the Internet Apps, pros and cons of using them, ethics and responsibilities to protect Internet Neutrality for the future generation.

5. INSTITUTIONAL LEARNING OUTCOME (CUH)
1. Written communication
2. Oral communication
3. Critical thinking
4. Information literacy
5. Quantitative reasoning

6. MARIANIST VALUES
This class represents one component of your education at Chaminade University of Honolulu. An education in the *Marianist Tradition* in marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:[5]

1. Educate for formation in faith
"As higher educational institutions, Marianist universities have kept, along with education in the disciplines, a commitment to the development of the whole person, which includes the dimension of religious faith and its personal appropriation and practice."

2. Provide an integral quality education
"In the Marianist approach to education, "excellence" includes the whole person, not just the technician or rhetorician. It also includes people with their curricular and extra-curricular experiences, their intellectual and spiritual development, understood and supported best in and through community."

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[5] Characteristics of Marinist Universities: Chaminade University of Honolulu, St. Mary's University, University of Dayton, A Resource Paper, published in 1999, Republished in 2006

3. Educate in family spirit

"Marianist educational experience fosters the development of a community characterized by a sense of family spirit that accepts each person with loving respect and draws everyone in the university into the challenge of building community. Community support for scholarship, friendship among faculty, staff and students, and participation in university governance characterize the Marianist University."

4. Educate for service, justice and peace

"The Marianist approach to higher education is deeply committed to the common good. The intellectual life itself is undertaken as a form of service in the interest of justice and peace, and the university curriculum is designed to connect the classroom with the wider world. In addition, Marianist universities extend a special concern for the poor and marginalized and promote the dignity, rights and responsibilities of all peoples."

5. Educate for adaptation and change

"In the midst of rapid social and technological change, Marianist universities readily adapt and change their methods and structures so that the wisdom of their educational philosophy and spirituality may be transmitted even more fully."

7. COURSE LEARNING OUTCOME (CLO) ALIGNMENT TABLE

CLO	Knowledge	Skill	Disposition	Program LO	CUH LO	WASC Core Competency	Marianist Values
1.	M	M		1, 2, 3	1-4	Written Communication	Educate for formation in faith
2.	M	M		1, 2, 3	1-4	Oral Communication	Provide an integral quality education
3.	C	C		1, 2, 3	1-5	Quantitative Reasoning	Educate in family spirit
4.	M	M		1, 2, 3	1-4	Critical Thinking	Educate for service, justice and peace
5.	C	C		1, 2, 3	1-5	Information Literacy	Educate for adaptation and change
6.	D	D		2, 3	1-4		
7.	C	C		1, 2. 3	1-4		
8.	C	D		2, 3	1-4		
9.	C	D		2, 3	1-4		
10.	M	M		1, 2, 3	1-4		

Legend: **I**= Introduced to the concept; **D**= Developing; **C**=Competent; **M**=Mastered

8. KEYS TO COURSE SUCCESS

⇒ Attend the course, poor attendance yields poor results
⇒ Be present in the classroom: listen, pay attention and participate in the conversations
⇒ Learn in the classroom; 50 minutes wasted cannot be ever recovered; it is gone
⇒ Complete and submit your work within the time frame allotted

$\Rightarrow$ Be on time and attend each class; manage your time before entering the classroom because once class is in session late arrivals is disturbance to other students

$\Rightarrow$ Prepare yourself to become a professional in today's business world; be a contributor

$\Rightarrow$ Get in the game, success is an objective to be achieved through a hard work and not due to good luck

9. COURSE TEACHING APPROACH

In the world of instant communication, it is paramount to understand the role computer plays in business and our personal life. A new technology, such as cloud computing, mobile computing and analytics is continually evolving and being widely discussed in universities, organizations and various government and business forums.

This course is designed to promote student participation through discussions of current events in computers. Students will study and apply process thinking to tackle the complexity of the information technology in general.

This course will be taught, using all or some of the pedagogy resources listed below:

a) **Active learning through integrated media** using interactive and engaging activities which are integrated within the text, so students are engaged in active learning throughout the chapter. At the end of each chapter, students can view the *Replay Video* for a summary and auto-graded quiz for immediate feedback.

b) **Real-World Training** is presented in the classroom to illustrate concepts and develop critical thinking skills:
   - **Active Helpdesks** provide students with a realistic experience of how to deliver help via live chat, FAQ searches, etc. Students play the role of a helpdesk technician, answering technology questions using these different approaches. A new *SoundBytes*: "Using the Arduino Microcontroller" and "Programming with the Processing Language."

c) **Projects** provide a hands-on way to address the hot area of mobile app creation. Each chapter includes a *"Make This Mobile App"* project using *MIT's App Inventor* free tool. By the end of the course, students will have completed 11 small mobile app projects that provide them with the skills to create their own apps. If students don't have an Android device, they can use the emulator and still pick up the skills.

d) **Review and tests preparation** are provided to students to aid in understanding of the computer's architecture as ever-changing technology in action:
   - **Check Your Understanding** sections give students the opportunity to see they are progressing at the end of each chapter. Students can get immediate feedback on the *Check Your Understanding* quiz on the Companion Website, the eText or in MyITLab.

- **Replay Videos** provide an author-narrated video review of each chapter part in an easy-to-use format student can view on their phones, tablets or computers. Each video includes a brief auto-graded quiz so students can receive immediate feedback.

e) **Try this interactive session** allow students to understand capabilities in one of the first steps towards computer literacy. In this exercise students will learn how to explore the components of your window computer.

f) **Hands-on activities** will be made available to students through:
- **Try this** project let students apply what they've been learning in a step-by-step activity. One project per chapter covers real-world activities such as Organizing Tiles, Skyping, Citing Website Sources and more. Each activity includes a video walkthrough to showing the steps.
- **Solve this** project put the concepts into action with real-world problem solving with a Microsoft Office application or other technology tool. These projects also available as Grader capstone projects in MyITLab.

g) **Games** such as *Jeopardy Game and Crossword Puzzles* give students a fun way to challenge their knowledge.

10. RECOMMENDED LEARNING STRATEGIES

1. **Be prepared** for each class**.**

2. **Review** examples and solutions within each chapter to reinforce the understanding of presented concepts.

3. **Complete** and **submit** assignments to reinforce the learning material.

4. **Contribute** and **participate** in team projects. You will learn to become a confident public speaker and improve your presentation skills.

5. **Take part** in classroom discussions and ask questions.

6. **Review** supplementary materials in preparation for midterm and final exams.

11. TENTATIVE SCHEDULE

WEEK #	CH #	SUBJECT
WEEK 1	1	The Impact of Technology in Changing World
WEEK 2	2	Looking at the computers: Understanding the Parts
WEEK 3	3	Using the Internet: Making the Most of the Web's Resources
WEEK 4	4	Application Software: Programs That Let You Work and Play
WEEK 5	5	System Software: The Operating System, Utility Programs, and File Management
WEEK 6	6	Understanding and Assessing Hardware: Evaluating Your System
WEEK 7	7	Networking: Connecting Computing Devices
WEEK 8	8	Managing a Digital Lifestyle: Media and Ethics
WEEK 9	9	Securing Your System: Protecting Your Digital Data and Devices
WEEK 10		The History of the Personal Computer
WEEK 11		Behind the Scenes: How the Internet Works
WEEK 12		Careers in IT
WEEK13		The Future of IT

12. GRADING

Class sessions are designed to promote student participation through the discussion of current events in the business world as they relate to the cyberspace and network systems security.

GRADING YOUR ACCOMPLISHMENTS:	GRADE SCALE:
Homework assignments	A = 90% – 100%
Quizzes & tests	B = 80% – 89%
Exams	C = 70% – 79%
Class participation ⬅➡ Priceless	D = 60% – 69%

13. POLICIES

Attendance
Attendance is required and class participation is priceless. Unexcused and an excessive (3 and more) lack of attendance will negatively affect your final grade. Chronic tardiness is not acceptable.

Assignments
Homework and other assignments will be posted on myITlab portal.

Assignments must be completed within assigned dates. Students will not be penalized for being late assignments however it should not become a habit. A request to make up exams will be allowed only with prior approval from the instructor. You must request a makeup date before the scheduled examination date. In the event of illness, a doctor's note will be expected. Contact me if you have any questions.

Group work
You are encouraged to work together on the projects. All graded assignments must be your own. You are also expected to have read and to abide by the "Student Rules of Conduct" which is available in your copy of Chaminade University's Student Handbook.

Policy on cell phones and music devices
A use of the music, other devices and cellular phones when the class is in session is prohibited. Ignoring this policy may leads to losing your phone for the duration of the class.

ADA Accommodations
Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the CUH Counseling Center counselingcenter@chaminade.edu by the end of the third week of classes. Failure to provide written documentation will prevent your instructor from making necessary accommodations.

8. Title IX Compliance
Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH.

If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

Other Polices
Please refrain from eating in class. You cannot use email and website surfing not connected with class activities. Students must adhere to the CUH policies listed in the Student Handbook.

Miscellaneous Student Notes: