UNIVERSITY OF HAWAI'I SYSTEM
COURSE ARTICULATION AGREEMENT

Information and Computer Science (ICS)
Leeward Community College – AS Degree

Information Technology (IT)
Hawai'i Community College – AAS Degree
Kapi'olani Community College – AS Degree

September 2017

UNIVERSITY OF HAWAI'I SYSTEM COURSE ARTICULATION AGREEMENT

Information and Computer Science (ICS)
Information Technology (IT)

INTRODUCTION

The University of Hawai'i (UH) Community Colleges are comprised of seven campuses located on four islands in the State of Hawai'i. While each campus has a unique identity and mission, the seven campuses are part of one system.

During the course of their education, students may decide to transfer from one UH Community College to another. The development of an articulated program of study supports the transfer of earned academic credits within the UH Community College system.

PURPOSE

The primary purpose of this articulation agreement is to facilitate the matriculation of students and the transfer of courses across the UH Community College system. Moreover, it is intended to inform students whose program of study requires ICS or ITS courses as part of their degree requirements of the program opportunities that are available to them throughout the UH Community College system.

AGREEMENT AND PROCEDURES

1. **Scope of Agreement**. This Articulation Agreement applies among the UH Community Colleges and the University of Hawai'i Maui College.

2. **General Guidelines for the Application of Award of Transfer Credits**

    A. <u>Student Eligibility</u>: Students must be currently enrolled at a participating UH campus to be eligible for the award of any transfer credit.

    B. <u>Timeline for Application</u>: Students should apply for transfer credits during their first year of attendance at the receiving campus.

    C. <u>Transferability</u>: Credits awarded within the guidelines established in this Agreement will transfer between and among designated University of Hawai'i Community Colleges. However, students should be informed by both "sending" and "receiving" campuses that transferred credits may **not** be applicable to programs outside this Agreement.

    D. <u>Campus Procedures</u>: Each UH Community College that is a party to this Agreement will be responsible for establishing procedures that detail the timeline and deadlines for

application, review requests for award of transfer credit, and the appeals process for such credit.

The table below in this document lists all ICS and ITS courses that are equivalent within the University of Hawai'i Community College. If a course is unique to a campus and, hence, does not have an equivalent course within the UH Community College, then it is not listed in the table. Also, the course number, course title, course abbreviation, schedule type, credit hours, contact hours, teaching equivalencies, course descriptions, and course learning outcomes, in this document have been approved by the faculty and administrations of all campuses represented in this signed agreement

This Course Articulation Agreement will remain in effect until December 2022. It will be subject to review in December 2021, and may be continued, revised, or discontinued with the consent of all faculty members and administration of all campuses represented in this agreement. The Articulation Agreement remains in effect while review continues.

This document lists all 100, 200, and 300-level courses in Information and Computer Science (ICS) at Hawai'i CC, Kapi'olani CC, Kaua'i CC, Leeward CC, Honolulu CC, UH Maui College, and Windward CC), and Information Technology (ITS) at Hawai'i CC and Kapi'olani CC) courses that are equivalent within the University of Hawai'i Community College system.

Note: Effective Fall 2018, each community college campus offering the courses listed below has agreed upon the course alpha, course number, course title, course abbreviation, credits, prerequisites, schedule type, credit hours, contact hours, workload, course description, and Course Learning Outcomes as listed below.

Note: Each campus must meet the agreed upon Course Learning Outcomes (CLOs), but can add additional outcomes.

Note: If **a course** with the same Course Learning Outcomes (CLOs) is offered at another campus, it articulates, as well."

Catalog Course Titles	HawCC	HonCC	KapCC	KauCC	LeeCC	MauC	WinCC
Computing Literacy and Applications	ICS 100 (3)	ICS 100 (3)	ICS 100 (3)		ICS 100 (3)		ICS 100 (3)
Digital Tools for the Information World	ICS 101 (3)	ICS 101 (3)	ICS 101 (3)	ICS 101 (3)	ICS 101 (3)	ICS 101 (3)	ICS 101 (3)
Introduction to Programming	ITS 103 (3)	ICS 110 (Alpha) (3)	ICS 110 (Alpha) (3)		ICS 110 (Alpha) (3)	ICS 110 (Alpha) (3)	
Introduction to Computer Science I	ITS 118 (3)	ICS 111 (3)	ICS 111 (3)	ICS 111 (3)	ICS 111 (3)	ICS 111 (3)	ICS 111 (3)
Introduction to Databases	ITS 151 (3) to change to ITS 129 (3)		ITS 129 (3)		ICS 129 (3)		ICS 113 (3) to change to ICS 129
Discrete Mathematics for Computer Science I		ICS 141 (3)	ICS 141 (3)		ICS 141 (3)	ICS 141 (3)	ICS 141 (3)
Introduction to Computer Security	ITS 221 (3) to change to ITS 122 (3)		ITS 122 (3)		ICS 171 (3)	ICS 171 (3)	ICS 171 (3)
Introduction to Networking	ITS 284 (3) to change to ITS 124 (3)		ITS 124 (3)		ICS 184 (3)	ICS 184 (3)	ICS 184 (3)
Website Design and Development			ITS 227 (3)			ICS 200 (3)	
Introduction to Computer Science II		ICS 211 (3)	ICS 211 (3)		ICS 211 (3)	ICS 211 (3)	ICS 211 (3)
Program Structure			ICS 212 (3)		ICS 212 (3)	ICS 212 (3)	ICS 212 (3)

Introduction to Scripting					ICS 215 (3)		ICS 215 (3)
Discrete Mathematics for Computer Science II			ICS 241 (3)		ICS 241 (3)	ICS 241 (3)	ICS 241 (3)
Ethical Hacking	ICS 281 (3)		ITS 222 (3)		ICS 281 (3)	ICS 281 (3)	ICS 281 (3)
Computer Forensics	ICS 282 (3)				ICS 282 (3)	ICS 282 (3)	ICS 282 (3)
Topics in Information Technology: Computer Forensics and Investigations			ITS 381F (3)				

Agreed upon course number, course title, course abbreviation, schedule type, credit hours, contact hours, teaching equivalencies, course descriptions, and course learning outcomes.

ICS 100 – Computing Literacy and Applications

Course alpha and number:
ICS 100 - (HawCC, HonCC, KapCC, LeeCC, WinCC)

Course title:
Computing Literacy and Applications

Course abbreviation (only 30 characters allowed):
Computing Literacy & Apps

Prerequisites:
None

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:

An introductory survey of computers and their role in the information world emphasizing computing terminology, hardware, and software. Opportunities for "hands on" experience using applications software may include spreadsheets, word processing, presentations, and communications.

Course Learning Outcomes:

1. Utilize the basic features of computing applications to communicate effectively (major content area).
2. Utilize operating system interfaces to manage computing resources effectively and securely.
3. Utilize online resources for research and communication.

4. Define, explain, and demonstrate proper computing terminology usage in areas such as hardware, software, and communications.
5. Describe ethical and security issues involved in the use of computing technology

Note: ICS 100 Computing Literacy and Applications is not equivalent to CS 100 Principles of Computer Science at UH Hilo.

Agreed upon course number, course title, course abbreviation, schedule type, credit hours, contact hours, teaching equivalencies, course descriptions, and course learning outcomes.

ICS 101 - Digital Tools for the Information World

Course alpha and number:
ICS 101 - (HawCC, HonCC, KapCC, KauCC, LeeCC, MauC, WinCC)

Course title:
Digital Tools for the Information World

Course abbreviation (only 30 characters allowed):
Tools for the Info World

Prerequisites:
None

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
Fundamental information technology concepts and computing terminology, productivity software for problem solving, computer technology trends and impact on individuals and society. Emphasizes the utilization of operating systems and the production of professional documents, spreadsheets, presentations, databases, and web pages.

Course Learning Outcomes:
1. Utilize the appropriate computing applications to produce professional documents, spreadsheets, presentations, databases, and web pages for effective communication (major content area).
2. Utilize operating system interfaces to manage computing resources effectively and securely.
3. Extract and synthesize information from available Internet resources using intelligent search and discrimination.

4. Define, explain, and demonstrate proper computing terminology usage in areas such as hardware, software, and communications to effectively interact with other computer users and to prepare for higher-level computer courses.
5. Describe ethical and security issues involved in the use of computing technology.

Note: At CTE Deans meeting on 1/20/17, per Joyce Hamasaki, HawCC agreed to change ICS 101 to 3 credits to align with all other CC's.

Agreed upon course number, course title, course abbreviation, schedule type, credit hours, contact hours, teaching equivalencies, course descriptions, and course learning outcomes.

ICS 110 (Alpha) - Introduction to Programming
ITS 103 - Introduction to the Programming Process

Course alpha and number:
ICS 110 (Alpha) - (HonCC, KapCC, LeeCC, MauC)
ITS 103 – (HawCC)

Letter suffix:
P - Python, C - C/C++, D - Animation/Java, M - Mobile, R - Robotics, G - Games, S - C#

Course title:
Introduction to Programming - (HonCC, KapCC, LeeCC, MauC)
Introduction to the Programming Process – (HawCC)

Course abbreviation (only 30 characters allowed):
Introduction to Programming - (HonCC, KapCC, LeeCC, MauC)
Intro to Programming Process – (HawCC)

Prerequisites:
Vary by campus

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
A gentle introduction to coding for anyone. Students use design strategies to create programs. Promotes an understanding of basic programming constructs, including control structure and object-oriented programming. The alpha suffix indicates technology such as:
P - Python, C - C/C++, D - Animation/Java, M - Mobile, R - Robotics, G - Games, S - C#.

Course Learning Outcomes:

1. Create a program using variables, conditional statements, looping, and event handlers.
2. Use critical thinking and problem solving in creating programs.
3. Create programs using the program life cycle.

Note: Hawaiʻi CC's ITS 103 is equivalent to ICS 110.

Note: Students can get credit for repeating the course with different ending letters, but not the same letter.

Agreed upon course number, course title, course abbreviation, schedule type, credit hours, contact hours, teaching equivalencies, course descriptions, and course learning outcomes.

ICS 111 - Introduction to Computer Science I
ITS 118 - Visual Programming for Business Applications

Course alpha and number:
ICS 111 - (HonCC, KapCC, KauCC, LeeCC, MauC, WinCC)
ITS 118 – (HawCC)

Course title:
Introduction to Computer Science I - (HonCC, KapCC, KauCC, LeeCC, MauC, WinCC)
Visual Programming for Business Applications – (HawCC)

Course abbreviation (only 30 characters allowed):
Intro to Computer Science I - (HonCC, KapCC, KauCC, LeeCC, MauC, WinCC)
Visual Programming for Bus App – (HawCC)

Prerequisites:
Vary by campus

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
An overview of the fundamentals of computer science emphasizing problem solving, algorithm development, implementation, and debugging/testing using an object-oriented programming language is covered.

Course Learning Outcomes:
1. Use an appropriate programming environment to design, code, compile, run and debug computer programs.
2. Demonstrate basic problem solving skills: analyzing problems, modeling a problem as a system of objects, creating algorithms, and implementing models and

algorithms in an object-oriented computing language.
   3. Illustrate basic programming concepts such as program flow and syntax of a high-level general purpose language and basic security practices.
   4. Demonstrate working with primitive data types, strings and arrays.

Credit by institutional exam:
Passing must be 80% or better.

Note:
Honolulu CC and UH MauC – to change ICS 111 to 3 credits lecture as discussed at AAA/VCAA meeting at WinCC on 11/10/16 to align with all other CC's. HawCC to offer ITS 118 as a 3 credits lecture as decided at CTE Deans meeting on 3/17/17 at Leeward CC.

ICS129/ITS 129 - Introduction to Databases

Course alpha and number:
ICS 129 – LeeCC, WinCC
ITS 129 – HawCC, KapCC

Course title:
Introduction to Databases

Course abbreviation (only 30 characters allowed):
Introduction to Databases

Prerequisites:
Vary by campus.

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
This course covers the fundamental concepts in database technology, including storage structures, access methods, recovery, concurrency, and integrity. The relational model and its implementation will be covered in depth together with an overview of SQL and its role in application development. The course will also present an overview of database administration, including modeling and design activities. A substantial part of the course involves the development of an understanding of database concepts.

Course Learning Outcomes:
1. Define common database terminology.
2. Create Entity Relationship Diagrams (ERD).
3. Design and create a relational database using the normalization process.

4. Use Structured Query Language (SQL) to manipulate data.
5. Follow best practices in secure database design.

Note: Formerly ICS 113 at Leeward CC, UHMC, and Windward CC.

Note: Hawai'i CC will change and renumber ITS 151 from 4 credits lecture/lab to 3 credits lecture ITS 129 (to match Kapi'olani CC's number) plus a 1-credit lab, ITS 129L.

ICS 141 Discrete Mathematics for Computer Science I

Course alpha and number:
ICS 141 – (HonCC, KapCC, LeeCC, MauC, WinCC)

Course title:
Discrete Mathematics for Computer Science I

Course abbreviation (only 30 characters allowed):
Discrete Math for CS I

Prerequisites:
Vary by campus

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
This course includes logic, sets, functions, matrices, algorithmic concepts, mathematical reasoning, recursion, counting techniques, and probability theory.

Course Learning Outcomes
1. Analyze issues and apply mathematical problem solving skills to plan courses of action in decision-making situations.
2. Solve problems by using basic mathematical formal logic, proofs, recursion, analysis of algorithms, sets, combinatorics, relations, functions, matrices and probability.

ICS 171/ITS 122 Introduction to Computer Security

Course alpha and number:
ICS 171 (LeeCC, MauC, WinCC)
ITS 122 (HawCC, KapCC)

Course title:
Introduction to Computer Security

Course abbreviation (only 30 characters allowed):
Intro to Computer Security

Prerequisites:
Vary by campus

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
Examines the essentials of computer security, including risk management, the use of encryption, activity monitoring, intrusion detection; and the creation and implementation of security policies and procedures to aid in security administration.

Course Learning Outcomes:
1. List the first principles of security and describe why each principle is important to security and its relationship to the development of security mechanisms and security policies.
2. Describe why good human machine interfaces are important to system use, the interaction between security and system usability and the importance for minimizing the effects of security mechanisms.
3. Analyze common security failures and identify specific design principles that

have been violated, and the needed design principle, when given a specific scenario.
4. List the fundamental concepts of the Information Assurance/Cyber Defense discipline and describe how they can be used to provide system security.
5. Identify the elements of a cryptographic system and describe the differences between symmetric and asymmetric algorithms, which cryptographic protocols, tools and techniques are appropriate for a given situation, and implementation issues.

Note: Students sometimes choose to take the CompTIA Security+ certification test following completion of this class because of the large overlap between this course and the Security+ exam objectives.

Note: Hawai'i CC will renumber ITS 221 to ITS 122 (to match Kapi'olani CC's number).

ICS 184/ITS 124 Introduction to Networking

Course alpha and number:
ICS 184 (LeeCC, MauC, WinCC)
ITS 124 (HawCC, KapCC)

Course title:
Introduction to Networking

Course abbreviation (only 30 characters allowed):
Introduction to Networking

Prerequisites:
Vary by campus

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
This course provides the student with the knowledge and skills to manage, maintain, troubleshoot, install, operate and configure basic network infrastructure, as well as to describe networking technologies, basic design principles, and adhere to wiring standards and use testing tools. The course also introduces the student to network security concepts.

Course Learning Outcomes:
1. Manage networking projects as part of a team.
2. Discuss information security technologies such as cryptography, digital signatures, key management, and authentication as they relate to computer networks.
3. Describe the fundamental concepts, technologies, components, terminology,

protocols, standards organizations, and business, legal, ethical, and security issues related to communications and data networks.
4. Describe a basic secure network architecture in accordance with current best practices given a specific need and set of hosts/clients.
5. Use current network tools to monitor, map and troubleshoot a network and to track and identify packets.

Note: Hawaiʻi CC's ITS 284 will be renumbered to ITS 124 to match Kapiʻolani CC's number. The course's title will be changed from "Data Communication Fundamentals" to "Introduction to Networking".

Note: Some students may opt to take the CompTIA Network+ exam upon the completion of ICS 184/ITS 124 because much of the CompTIA Network+ exam material is covered in class.

ICS 200/ITS 227 Website Design and Development

Course alpha and number:
ICS 200 (MauC)
ITS 227 (KapCC)

Course title:
Website Design and Development

Course abbreviation (only 30 characters allowed):
Website Design and Development

Prerequisites:
None

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
Introduces web page authoring. Creates client-side web pages using web authoring language and style sheets. Uses graphical design elements, validation, browser capability, and accessibility. Uses scripting language to add dynamic elements to web pages, client-side scripting, regular expressions, event handling, input validation, selection, repetition, and parameter passing.

Course Learning Outcomes:
1. Demonstrate the website development cycle.
   a. Use scripting to build dynamic web applications.
   b. Use styling and markup languages to create simple user interfaces.
   c. Use scripting functions to optimize web applications for different devices.

d. Design and create a web application using agile development techniques.
2. Use appropriate web development software to create an effective website that communicates a message, incorporates appropriate media, and adheres to usability and accessibility standards.
3. Demonstrate understanding of important design techniques, concept development and composition.

ICS 211 Introduction to Computer Science II

Course alpha and number:
ICS 211 – (HonCC, KapCC, LeeCC, MauC, WinCC)

Course title:
Introduction to Computer Science II

Course abbreviation (only 30 characters allowed):
Intro to Computer Science II

Prerequisites:
Vary by campus

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
Reinforce and strengthen problem-solving skills using abstract data types and introduce software development practices. Emphasize the use of searching and sorting algorithms and their complexity, recursion, object-oriented programming, and data structures.

Prerequisite:
ICS 111 with a grade of "B" or higher, or instructor consent.

Course Learning Outcomes
1. Use and implement abstract data types such as lists, stacks, queues, and trees.
2. Select the appropriate searching or sorting algorithm based on the algorithm's behavior.

3. Develop recursive algorithms and programs.
4. Use standard libraries or packages as well as advanced object-oriented programming techniques (polymorphism, inheritance, and encapsulation).
5. Produce robust and secure programs using exception handling and extensive program testing.

ICS 212 Program Structure

Course alpha and number:
ICS 212 – (KapCC, LeeCC, MauC, WinCC)

Course title:
Program Structure

Course abbreviation (only 30 characters allowed):
Program Structure

Prerequisites:
ICS 211 with a grade of "B" or higher, or instructor consent.

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
Program organization paradigms, programming environments, implementation of a module from specifications, the C and C++ programming languages.

Course Learning Outcomes
1. Develop properly structured multi-file programs with automatic compilation.
2. Implement recursion, arrays, pointers, character variables, bitwise operators, structures, and linked data structures in C.
3. Use classes (constructors, destructor, and overloading assignment), operator overloading, inheritance, polymorphism, and linked data structures in C++.
4. Use standard C++ strings and C++ STL library data structures, such as STL lists.

ICS 215 Introduction to Scripting

Course alpha and number:
ICS 215 – (LeeCC, WinCC)

Course title:
Introduction to Scripting

Course abbreviation (only 30 characters allowed):
Introduction to Scripting

Prerequisites:
Minimum of ICS 111 with a "B" or higher or consent of instructor. Additional prerequisites vary by campus.

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
Introduction to scripting languages for the integration of applications and systems. Scripting in operating systems, web pages, server-side application integration, regular expressions, event handling, input validation, selection, repetition, and parameter passing for languages such as Perl, JavaScript, PHP, Python, and/or shell scripting.

Course Learning Outcomes:
1. Use regular expressions to solve different problems.
2. Produce robust client and server side scripts in a variety of scripting languages using software engineering techniques such as review and extensive program testing.
3. Handle user and system generated events using various scripting languages.

4. Validate user input using various scripting languages for security purposes.

ICS 241 Discrete Mathematics for Computer Science II

Course alpha and number:
ICS 241 – (KapCC, LeeCC, MauC, WinCC)

Course title:
Discrete Mathematics for Computer Science II

Course abbreviation (only 30 characters allowed):
Discrete Math for CS II

Prerequisites:
ICS 141 with a grade of "C" or higher, or instructor consent.

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description: Includes program correctness, recurrence relations and their solutions, divide and conquer relations, graph theory, trees and their applications, Boolean algebra, introduction to formal languages and automata theory.

Student Learning Outcomes:
1. Analyze issues and apply complex mathematical problem solving skills to plan courses of actions in high-level decision-making situations.
2. Utilize such tools as graphs, trees, boolean algebra, and recurrence relations.
3. Explain discrete math concepts such as formal languages, finite-state machines, and program correctness.

ICS 281/ITS 222 - Ethical Hacking

Course alpha and number:
ICS 281 (HawCC, LeeCC, MauC, WinCC)
ITS 222 (KapCC)

Course title:
Ethical Hacking

Course abbreviation (only 30 characters allowed):
Ethical Hacking

Prerequisites:
Vary by campus

Schedule type:
Lecture (LEC)

Credit Hours:
3

Contact Hours:
45

Workload (TE - teaching equivalencies):
3

Course description:
This course covers basic ethical hacking techniques also known as white hat hacking. It stresses the moral and legal issues about hacking and how these techniques can be used to defend against attacks as well as to perform authorized system security evaluation testing.

Course Learning Outcomes:
1. Demonstrate how to apply current cyber-attack, countermeasures and best practices using current cyber defense tools, methods and components.
2. Implement a defense incident response and recovery strategies.
3. Evaluate the moral and legal obligations of an ethical hacker.
4. Apply the knowledge gained in hardening systems to prevent or minimize attacks.

Note: Here are the CAE Knowledge Unit (KU) outcomes for Ethical Hacking, with the mapping to the learning outcomes above.

1. Identify, describe, and apply current cyber attack, defense incident response, and recovery strategies, tactics, countermeasures, and best practices using current cyber defense tools, methods, and components. (maps to #1 and #2 above)
2. Identify the bad actors in cyberspace and compare and contrast their resources, capabilities/techniques, motivations, aversion to risk, and threat potential. (optional)
3. List the applicable ethical issues, laws and policies related to cyber defense and digital forensics and describe the major components of each pertaining to the storage and transmission of data and resolution of legal disputes. (maps to #3 above)
4. Examine the architecture of a typical, complex system and identify significant vulnerabilities, risks, and points at which specific security technologies/methods should be employed. (maps to #4 above)

Note: Some students may opt to take the EC-Council CEH exam upon the completion of this course because much of the EC-Council CEH exam material is covered in class.

ICS 282/ITS 381F - Computer Forensics

<u>Course alpha and number:</u>
ICS 282 (HawCC, LeeCC, MauC, WinCC)
ITS 381F (KapCC)

<u>Course title:</u>
Computer Forensics (HawCC, LeeCC, MauC, WinCC)
Topics in Information Technology: Computer Forensics and Investigations (KapCC)

<u>Course abbreviation (only 30 characters allowed):</u>
Computer Forensics

<u>Prerequisites:</u>
Vary by campus

<u>Schedule type:</u>
Lecture (LEC)

<u>Credit Hours:</u>
3

<u>Contact Hours:</u>
45

<u>Workload (TE - teaching equivalencies):</u>
3

<u>Course description:</u>
This course covers basic computer forensics including operating system diagnostics, the use of forensic toolkits to examine and validate computer activity and techniques for the proper collection, examination and preservation of forensic evidence.
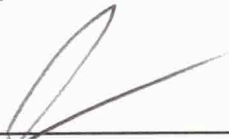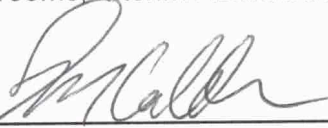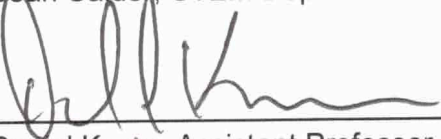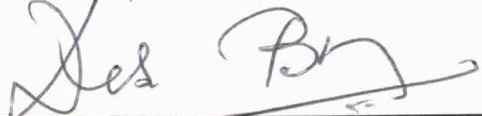
<u>Course Learning Outcomes:</u>
1. Discuss the rules, laws, policies, and procedures that affect digital forensics.
2. Demonstrate the proper use of one or more common digital forensics tools.
3. Describe the steps in performing digital forensics from the initial recognition of an incident through the steps of evidence gathering, preservation and analysis, through the completion of legal proceedings.

Note: These learning outcomes match the CAE Knowledge Unit (KU) outcomes for digital forensics.
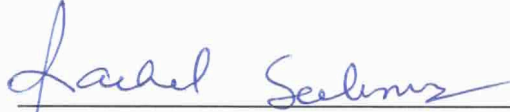
UNIVERSITY OF HAWAI'I SYSTEM ARTICULATION AGREEMENT
Information and Computer Science (ICS)
Information Technology (ITS)

University of Hawai'i Maui College

_____
Lui Hokoana, Chancellor

10-16-17
Date

_____
Jonathan McKee, Vice Chancellor of Academic Affairs

10-11-17
Date

_____
David Grooms, Interim Assistant Dean of Instruction

10-16-17
Date

_____
Sean Calder, STEM Department Chair

10/12/2017
Date

_____
Daniel Kruse, Assistant Professor

10/11/2017
Date

_____
Debasis Bhattacharya, Instructor, ABIT Program Coordinator

10/12/2017
Date

UNIVERSITY OF HAWAI'I SYSTEM ARTICULATION AGREEMENT
Information and Computer Science (ICS)
Information Technology (ITS)

Hawai'i Community College

Rachel Solemsaas

Rachel Solemsaas, Chancellor

Date 11/16/18

Joni Onishi

Joni Onishi, Vice Chancellor for Academic Affairs

Date 11/5/2018

TBA, Dean of CTE

Date

Anne Chung

Anne Chung, Associate Professor, Chair of Business
Education and Technology Division

Date 11/5/2018

Carrie Butler

Carrie Butler, Instructor

Date 11/7/2018

UNIVERSITY OF HAWAI'I SYSTEM ARTICULATION AGREEMENT
Information and Computer Science (ICS)
Information Technology (ITS)

Honolulu Community College

_____   10/9/17
for Erika Lacro, Chancellor   Date

_____   9/18/17
Karen Lee, Interim Vice Chancellor for Academic Affairs   Date

_____   9/18/17
Keala Chock, Dean, Communication and Services Division   Date

_____   10/1/17
Vern Takebayashi, Chair, ICS Department   Date

UNIVERSITY OF HAWAI'I SYSTEM ARTICULATION AGREEMENT
Information and Computer Science (ICS)
Information Technology (ITS)

Kapi'olani Community College

_____   10/9/17
Louise Pagotto, Interim Chancellor   Date

_____   9-28-17
Susan Kazama, Interim Vice Chancellor for   Date
Academic Affairs

_____   10/3/17
Nawa'a Napoleon, Dean of Arts & Sciences   Date

_____   9/13/17
John Richards, Dean of Hospitality, Business and   Date
Legal Education

_____   10/3/2017
Charles Matsuda, Math/Sciences Department Chair   Date

_____   9-5-17
Trude Pang, Chair, Business, Legal, and   Date
Technology Education Department

_____   _____
Steven A. Singer, Professor, IT Program Coordinator   Date

_____   9/5/17
Alfred Seita, Professor, ICS/IT Program   Date

_____   5 Sept. '17
David Stevens, IT Instructor   Date

_____   10/2/17
Lisa J. Miller, ICS Instructor   Date

_____   9/5/2017
Hal Corcoran, Assistant Professor   Date

UNIVERSITY OF HAWAI`I ARTICULATION AGREEMENT
Information and Computer Science (ICS)
Information Technology

Kaua`i Community College

_____   8/9/18
Helen A. Cox, Chancellor   Date

_____   13 Aug 2018
Frankie Harriss, Vice Chancellor for Academic Affairs   Date

_____   8/16/18
Gigi Drent, Science and Mathematics Division Chair   Date

_____   8/16/18
Georgeanne Purvinis, Assistant Professor   Date

Leeward Community College

Manuel Cabral   8/30/17

Manuel Cabral, Chancellor   Date
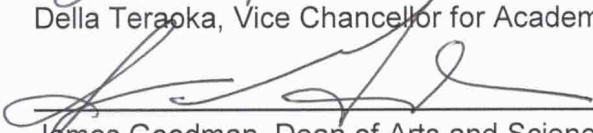
Della Teraoka   9/6/2017

Della Teraoka, Vice Chancellor for Academic Affairs   Date

[signature]   AUG 3 0 2017

James Goodman, Dean of Arts and Sciences   Date
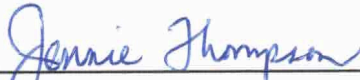
Ron Umehira   8/30/17

Ron Umehira, Dean of Career & Technical Education   Date
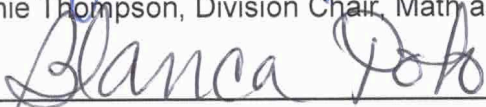
Jennie Thompson   8/30/17

Jennie Thompson, Division Chair, Math and Sciences   Date

Blanca Polo   SEP 0 6 2017

Blanca Polo, Associate Professor and ICS Discipline   Date
Coordinator

Michael Bauer   SEP 0 6 2017

Michael Bauer, Associate Professor   Date
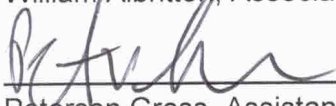
William Albritton   8-31-2017

William Albritton, Associate Professor   Date

Petersen Gross   8-31-2017
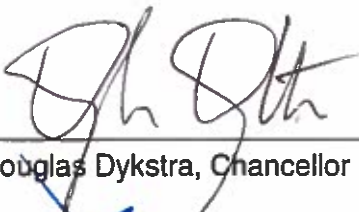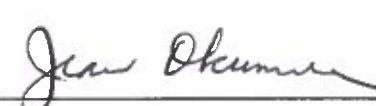
Petersen Gross, Assistant Professor   Date

UNIVERSITY OF HAWAI'I SYSTEM ARTICULATION AGREEMENT
Information and Computer Science (ICS)
Information Technology (ITS)

Windward Community College

_____
Douglas Dykstra, Chancellor

7/16/18
_____
Date

_____
Ardis Eschenberg, Vice Chancellor for Academic Affairs

7/16/18
_____
Date

_____
Charles Sasaki, Dean of Academic Affairs, Division II

7/16/18
_____
Date

_____
Jean Okumura, Chair, Math and Business Department

7/16/2018
_____
Date

_____
Laura Sue, Instructor

7/16/2018
_____
Date

_____
Michael Kato, Instructor

7/16/2018
_____
Date