

New Program Code **Modify Program Code**

Date: 12/9/2019

REQUESTOR CONTACT INFORMATION

Name Qimei Chen Campus Mānoa, UH
 Title Associate Dean for Academic Affairs Email qimei@hawaii.edu
 Office/Dept Office of the Dean Phone 956-8377

NEW PROGRAM CODE TO CREATE

Institution MAN - University of Hawaii at Manoa Campus MAN - University of Hawaii at Manoa
 Level GR - Graduate Effective Term Fall 2020

	Code (Max. Characters)	Description	Check if requesting new code:
College	(2) <u>20</u>	<u>College of Business Admin.</u>	<input type="checkbox"/> See Banner form STVCOLL
Department	(4) <u>ITM</u>	<u>Information Technology Mgt</u>	<input type="checkbox"/> See Banner form STVDEPT
Degree/Certificate	(6) <u>MS</u>	<u>Master of Science</u>	<input type="checkbox"/> See Banner form STVDEGC
Major	(4) <u>MIS</u>	<u>Management Information Systems</u>	<input type="checkbox"/> See Banner form STVMAJR
Concentration	(4) <u>n/a</u>		<input type="checkbox"/> See Banner form STVMAJR
Minor	(4) <u>n/a</u>		<input type="checkbox"/> See Banner form STVMAJR

If a similar major/concentration code exists in Banner, please list the code: _____

Justification to warrant a new major/concentration code similar to an existing major/concentration code: _____

If new major, please list the BOR's approved Classification of Instructional Programs (CIP) Code: _____

Is this major/concentration code being used the same way at the other UH campuses? Yes No

Should this program be available for applicants to select as their planned course of study on the online application? *If yes, student may select the code as their only program of study.* Yes No

RULES PERTAINING TO FINANCIAL AID AND 150% DIRECT SUBSIDIZED LOAN LIMIT LEGISLATION

Is 50% or greater of the classes in this program offered at a location other than the Home Campus? Yes No

Is this program/major/certificate financial aid eligible? Yes No

Does this certificate qualify as a Gainful Employment Program (Title IV-eligible certificate program)? Yes No

See <http://www.ifap.ed.gov/GainfulEmploymentInfo/index.html>

Program Length

In academic years; decimals are acceptable. The length of the program should match what is published by the campus in any online and/or written publication.

2 Years

Special Program Designations A B N P T U

See *Special Program Designations Code Definitions on IRAO Program Code Request webpage*

Required Terms of Enrollment: Fall Spring Summer Extended

IRA0 USE ONLY: DATE RECEIVED

ADDITIONAL COMMENTS (for modifying existing program codes, specify the term to turn on/off the online application, the recruitment/admission term, and the general student/history/degree term.)

Banner Program Code: MIS-MS
Program Name: MS in Information Systems
CIP Code: 52.1201
Online Application Indicator: N (Off)

ATTACHMENTS

BOR Approved: Sole-credential Certificates, Associate (excluding ATS), Bachelor and Graduate Degrees, and sole credential certificates

- BOR Meeting Minutes & Supporting Documents Curriculum

Chancellor Approved: Concentrations, Certificates and Associate in Technical Studies (ATS) Degree

- Memo from Chancellor to notify Vice President for Academic Planning and Policy regarding program action.
 Curriculum

CERTIFICATES ONLY: Please check one (1) statement. This certificate is a...

- BOR approved certificate. BOR Meeting/Approval Date: _____
 Chancellor approved within an authorized BOR program. BOR Program: _____
 Chancellor approved CO in accordance with UHCCP 5.203, Section IV.B.10.

VERIFICATIONS

By signing below, I verify that I have reviewed and confirm the above information that is pertinent to my position.

Registrar
(Print Name)

Stephanie Malin

Steph Malin 1/7/2020

Signature

Date

Financial Aid Officer
(Print Name)

Jodie Kuba

Jodie Kuba 1/13/2020

Signature

Date

For Community Colleges,
verification of consultation with
OVPCC Academic Affairs:

Tammi Oyadomari-Chun

Signature

Date

RECEIVED
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October 10th, 2019

MEMORANDUM

TO: Michael Bruno
Provost

VIA: Vance Roley, Dean, Shidler College of Business

V. Vance Roley

FROM: Randall K. Minas, Ph.D., Faculty Director of the MSIS Program

R. K. Minas

SUBJECT: Master of Science in Information Systems Proposed 4+1 Pathway

SPECIFIC ACTION REQUESTED:

It is requested that the Provost approve the proposed 4+1 combined degree pathway for the Bachelor of Business Administration in Management Information Systems and the Master of Science in Information Systems degrees. The Information Technology Management (ITM) department respectfully requests:

- 1) ITM 353: Information Systems Analysis and Design (3) be used as the Gateway Course, requiring a grade of B or higher in order to be considered for the pathway.
- 2) The courses designated as double counting for the BBA and MSIS degrees be:
 - a. ITM 433: Advanced Security (3)
 - b. BUS 619: Data Analytics and Statistics in Business (3)
 - c. One of either ITM 680: Project Management, Information Technology and Change (3) or ITM 683: Business Intelligence and Data Analytics (3) (offered in alternating years)

RECOMMENDED EFFECTIVE DATE:

January 1st, 2020

ADDITIONAL COST:

There are no additional costs anticipated by this proposal.

PURPOSE:

To provide a 4+1 degree pathway for MIS undergraduates entering the MSIS program.

BACKGROUND:

The Master of Science in Information Systems program in the ITM Department of the Shidler College of Business was approved by the Board of Regents on March 28th, 2019. The MSIS degree was designed with the anticipation of a 4+1 pathway. The designated gateway course, ITM 353: Information Systems Analysis and Design (3) is a course that is taken on or before Spring semester of the 3rd year and is indicative of a student's ability to do graduate level work. We are requesting approval for ITM 353 to serve as the gateway course, requiring a B or higher for consideration to enter the pathway. Furthermore, we have designated one 400-level course and two 600-level courses, totaling 9 credit hours, for double counting towards the BBA and MSIS degrees respectively.

ACTION RECOMMENDED:

It is recommended that the "Provost" approve the 4+1 pathway for the BBA in MIS and MSIS degrees.

Attachments:

1. Master of Science in Information Systems Approved Proposal (See page 8 for degree requirements).
2. Bachelor of Business Administration in Management Information Systems' Degree Requirements from <http://www.manoa.hawaii.edu/ovcaa/programsheets/>
3. Proposed combined degree pathway requirements.

Approved/Disapproved:



Michael Bruno
Provost

10/28/19
Date

**PROPOSALS FOR NEW ACADEMIC
PROGRAMS**
Master of Science in Information Systems (MSIS)

1. Program Purpose and Outcomes

A. Describe purpose of proposed program in terms of meeting student, community or State needs.

Information technologies (IT) are ubiquitous in today's economy, as information system applications are developed and diffused across industries and throughout society at a dizzying pace. Designing, implementing, and managing IT innovations in ways that bring value to organizations, employees, the economy, and to society generally requires information systems (IS) professionals with in-depth domain knowledge of business and organizational requirements, along with understanding of digital technologies. The Association of Information Systems (AIS) characterizes IS professionals in this way: *"They focus on technology and a domain of application and are experts in strategizing, developing, applying, modifying and sustaining technology to solve problems or leverage new IT-enabled opportunities. IS professionals work with and rely on computer scientists and engineers to create platforms and focus on understanding requirements and integrating technologies to design solutions that solve practical day-to-day problems and increasingly, lead digital innovation"* (Mandviwalla, Harold, and Yastremsky, 2016, p. 4).

The Master of Science in Information Systems (MSIS) is designed to provide advanced managerial and technology knowledge and skillsets that graduates need to meet the demand for highly skilled information technology and systems (IT/IS) professionals in Hawai'i and elsewhere. IS professionals will contribute to business, not-for-profit, and government enterprises in Hawai'i, all of which require employees who are innovative, agile, technology-adept, and responsive to today's technology-powered economy. The knowledge and skillsets that graduates acquire through the program will in turn provide them enhanced professional job and income opportunities in the Hawai'i economy.¹

B. Identify program outcomes, what the student will know and be able to do at program completion.

The MSIS program is designed in alignment with the MSIS 2016 Global Competency Model for Graduate Degree Programs in Information Systems, endorsed by the Association for Computing Machinery and the Association for Information Systems (Topi et al., 2017). (Also see Appendix 1.) The program builds on the knowledge and competencies students develop in an undergraduate IS or computer science degree program or through post-graduate work experience (verified with appropriate testing) related to the role of information systems in organizations, data, information, content management, IT

¹ According to the salary survey conducted by National Association of Colleges and Employers, the average starting salary projection for Class of 2017 management information systems (MIS) undergraduate majors is \$59,642 and, with a Master's Degree in Information Systems, an average starting salary of \$81,955. A 2015 study by the AIS cited an average BBA/MIS salary of \$57,817 and MSIS salary of \$67,632, an 18% salary increase for MSIS graduates (Mandviwalla et al., 2016, p. 5).

infrastructure (including computer networks), IS management and operations (including IS security), and systems development and deployment. Upon completion of the MSIS program, graduates will have developed the following areas of competency:

1. Apply in-depth understanding of information technology capabilities and appropriate technological trends to provide information system solutions that are aligned with organizations' strategies.
2. Apply sustainable approaches, as well as appropriate technical and management techniques, to design, implement, and maintain IT infrastructure, information systems, and data services.
3. Develop and implement IT-enabled business processes for work units, teams, organizations, or markets to improve business activities and performance.
4. Develop or support organizational policies, processes, and technologies for data and information management that account for business, legal and regulatory requirements, and ethical considerations.
5. Assess IT/IS risks and generate solutions for risk avoidance, cybersecurity management, and disaster recovery to protect organizational assets and ensure business continuity.

C. Describe the fit of the proposed program with system/campus mission and state need. Describe how the program addresses the following:

- 1) Aligns with the UH System mission and academic master plan and the campus mission and academic plan.**

Aligned with Hawai'i Graduation Initiative (HGI) Action Strategy 3, the MSIS curriculum responds directly to the strong and immediate need for a skilled IT workforce in the local community statewide, nationally, and globally. It targets knowledge areas in STEM, data science, and cybersecurity. With the proposed program, the University of Hawai'i at Mānoa will be able to prepare IS professionals for current and growing demands, while keeping the State of Hawai'i competitive in the IT market. The curriculum promotes technological innovation and supports growth in a highly skilled technology workforce to help the University of Hawai'i at Mānoa reach the goal of Hawai'i Innovation Initiative (HI2) and, in particular, economic diversification and more high-quality, highly-skilled jobs.

To pave the way for economic diversification, faculty of the Shidler College of Business Department of IT Management, following HI2 Action Strategy 2, have worked in partnership with the CIO Council of Hawai'i and the State of Hawai'i's Office of Information Management and Technology to identify areas of IT labor force development and promote IT/IS careers among undergraduates. Continuing this partnership with the MSIS program, on-the-job training and internships will strengthen students' ability to apply knowledge and skillsets acquired throughout the course of study to existing business needs and to advance innovation. The curriculum, together with a robust capstone requirement for industry-focused projects, will enable students to build immediate skills, while applying their new knowledge through participation in service-oriented projects, even before graduation.

The University of Hawai'i strategic initiatives speak to the fact that the "effective use of technology is inherently linked to the value of sustainability and the growth of community. 'Smart' technologies will allow us to emerge as a stronger and more organizationally sustainable campus and will expand our connections locally and globally." An educated and trained IS professional workforce is needed for Hawai'i to reach its goals in effective use of information technology to support sustainability initiatives.

Finally, the MSIS program is designed with High Performance Mission-Driven System (HPMS) Action Strategy 2 in mind. Instructional technology and innovative scheduling of course delivery will be used to reach students on neighbor islands and those who remain in workplace employment while in the program.

2) Provide evidence of continuing need for the program, projections of the number of graduates, of career and graduate education opportunities for those completing the proposed program

Due to increased global dependency and rapid advancements in information technology, an increasing demand for information systems and application software, and the evolving complexity of cybersecurity threats, employment in information technology and systems (IT/IS) related occupations is growing faster than the average for all other occupations. The program will help students obtain positions such as business / computer system analyst, application developer, information security analyst, and information systems manager. It will also provide students with knowledge and skills that are necessary for advancing to positions such as chief information officer (CIO) and chief technology officer (CTO). The career opportunities that are available for MSIS graduates are illustrated in Table 1.

Table 1: Outlook for IS-related Jobs in the U.S.A.

	Projected Job Growth (2014 - 2024)	Job Opening due to Growth and Replacement (2014 - 2024)	Median Annual Salary (2016)
Computer System Analyst*	20.9%	191,600	\$87,220
Applications Developer*	18.8%	238,000	\$100,080
Database Administrator*	11.1%	39,200	\$84,950
Computer Network Architect*	8.7%	31,500	\$101,210
Information Security Analyst*	17.9%	25,500	\$92,600
Information Systems Manager*	15.4%	94,800	\$135,800

Chief Information Officer**	N/A	N/A	\$152,617
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Source: *U.S. Bureau of Labor Statistics; **PayScale.com

A 4-year undergraduate degree, such as a BBA/MIS major, is an entry point for students to begin an IS career, but advanced study through masters-level work enhances first-job prospects, and continuing education for alumni enhances career advancement opportunities. For instance, a 2015 survey of graduates of 30 U.S. universities offering the Masters of IS degree reported 65% of graduates with placement at graduation and 94% placement within 6 months of graduation with an 18% increase in base starting salary, compared to BBA graduates (AIS, 2016, pg. 8). According to the survey conducted by the National Association of Colleges and Employers in 2017, a Master's in Information Systems is among the top 10 graduate degrees that most employers are attracted to.

The MSIS program is targeted to graduate 16-20 students per year, with annual enrollments of 30-40 accounting for part-time progression of some students through the program. The program will appeal to current undergraduates in the Shidler College BBA program in an intended 4-1 pathway to the MSIS. Pathways for undergraduates at other University of Hawai'i 4-year colleges will also be designed in future, if there is demand.² Students in a 4-1 pathway are anticipated to account for approximately 40- 60% of MSIS graduates. Other graduates will be IS professionals working in Hawai'i (including MIS major alumni) and professionals seeking a career change to the IS field. The MSIS degree will be of interest to military personnel with bachelor's degrees and experience in the IS/IT field, as they enter the private sector. As MSIS will be a STEM-qualified program, the on-the-job professional training option will be attractive to international students seeking an IS/IT career.³

3) Include a market analysis of the need of the program by addressing the professional, economic, social and workforce needs of the State of Hawai'i.

Demand in the State of Hawai'i parallels the demand nationally, highlighted above. The Hawai'i Department of Labor indicated in an October 2016 news release for statewide employment forecasts that the information technology industry will see a 2.8% growth from 2014 - 2024, creating an additional 240 jobs in the field, with occupational projections for the computer and mathematical fields to see a net increase of 1,000 new positions, a gain of 10.2% between 2014 and 2024. Not only will additional computer and information systems professionals be in demand over the next decade, management positions are a growing concern for many decision makers who see a widening gap in the requisite skillset for sorely needed IS management. The MSIS degree is designed to address these workforce gaps.

² A 9/27/17 meeting with faculty at UHWO indicated the Bachelors of Applied Science in cybersecurity students would not seek an MSIS degree, as their pathways to career and higher education are tightly focused. The general business curriculum currently does not include MIS majors, but in future there may be some interest. Discussions with UHH faculty on possible pathways are planned before program start-up.

³ MSIS qualifies in multiple categories, e.g., 11.0101, 11.0103, 11.0104, 11.0199, 11.0501, , 11.1001, 11.1005, 11.1006, 11.1099. See <https://www.ice.gov/sites/default/files/documents/Document/2014/stem-list.pdf>
DRAFT 4/11/2018 Proposal for a Masters of Science in Information Systems (MSIS)

In a March 2016 interview, the Chief Innovation Officer of the Office of Information and Management and Technology for the State of Hawai'i, Mr. Todd Nacapuy, stated, "For the governor, IT is a recognized priority. He is very supportive of all of our initiatives and workforce development. He really understands that if we don't start doing something to develop an IT workforce for the State of Hawai'i, then we are going to continue to have failed IT projects. We've had multiple, large-scale projects fail in the past because we don't have the skilled workers to do it. And it's not that the state workforce can't do it, it's just that we don't have enough of them."⁴ Mr. Nacapuy called attention to the need for skilled IT

professionals to support various kinds of activities, noting, "We support roughly 80,000 state employees in 65,000 seats — we have roughly 800 IT workers for them. Every department is undermanned as far as supporting any type of IT initiative within the departments and anything that goes statewide."

Demand for well rounded IS professionals is not limited to the public sector. Mr. Alan Ito, the President of the CIO Council of Hawai'i, has stated that there is a need for graduates with advanced training and practical experiences in dealing with all aspects of IT/IS project implementation, management, and maintenance. This demand spans across commercial entities of large, medium, and small size from various industries such as banking, insurance, healthcare, tourism, and retail. Firms in all economic sectors need highly skilled IS professionals to help upgrade their information systems to provide better online services and to manage cybersecurity threats.

4) Demonstrates how the proposed program responds to national and international needs where Hawai'i and the University have unique or outstanding resources to respond with quality.

The international, national, and statewide need for IS professionals with enhanced knowledge and competencies in IS/IT topics is compelling. The Shidler College of Business, and in particular, the Department of IT Management and its faculty, have outstanding resources and competencies in the IS/IT field and knowledge domain to carry out this program. Each faculty member is a recognized leader in his or her area of study and teaching in the IS/IT field. Table 2 summarizes these areas of expertise.

The Department of IT Management also works collaboratively with colleagues from the Department of Information and Computer Sciences, the Library and Information Science Program, and the School of Communication in the Interdisciplinary PhD Program in Communication and Information Sciences.

Through this institutional network, the MSIS program will be able to access expertise in closely aligned areas among UHM faculty.

⁴ <http://www.govtech.com/computing/Conversation-with-a-CIO-Hawaii-Todd-Nacapuy.html>
DRAFT 4/11/2018 Proposal for a Masters of Science in Information Systems (MSIS)

Table 2: Shidler College of Business' Department of IT Management Areas of Expertise

Faculty Members	Areas of Expertise
Tung Bui <i>Professor and Chair of Information Technology Management Matson Navigation Company Chair of Global Business Co-Chair, Hawaii International Conference on Systems Sciences Director, APEC-Study Center Director, PRISM (Pacific Research Center for Information System)</i>	Computer-supported group decision and negotiation Electronic commerce and the digital economy Economic evaluation of information technology
Hongmei Chen <i>Professor of Information Technology Management</i>	Big data system design and development Service engineering Social CRM Green computing
Elizabeth Davidson <i>Professor of Information Technology Management W. Ruel Johnson Distinguished Professor</i>	Information technologies in organizational settings Health information technology diffusion and assimilation Human resource information system
Rick Kazman <i>Professor of Information Technology Management</i>	Software architecture design and analysis Architecture/Design analysis tools and methods IT economics
Randall Minas <i>Assistant Professor Hon Kau and Alice Lee Faculty Fellow Faculty Advisor, Information Technology Management Association</i>	Human-Computer Interaction and User Experience Design NeuroIS and cognitive neuroscience Health information technology Societal impacts of technology usage
Dan Port <i>Associate Professor of Information Technology Management</i>	Strategic, economic, and empirical methods in software engineering Application development
Bo Xiao <i>Associate Professor of Information Technology Management Shidler College Distinguished Associate Professor</i>	Human-Computer Interaction Information reduction and visualization Health information technology
Anthony Vance <i>Associate Professor of Information Technology Management Danny & Elsa Lui Distinguished Associate Professor</i>	Cybersecurity Neuroscience applications to information security

Finally, the Department of ITM organizes the Hawai'i International Conference on System Sciences (HICSS), the longest-standing academic conference in information systems and technology (51 years). (See HICSS.org.) Each year over 1,000 leading scholars from academic, public, and private sectors globally attend HICSS, and leading scholars regularly visit the Mānoa campus to contribute to research and curriculum in conjunction with HICSS. During the past five decades, research first presented at HICSS has advanced innovations in data science, cybersecurity, digital transformation, health informatics,

IS/IT infrastructure, and so on. In addition to their individual research and scholarly programs, the ITM department has been recognized as leaders in the IS field through their leadership in designing and conducting the HICSS conference each year.

5) Meets the basic education needs for which there is a demand by Hawai'i residents.

The MSIS program will be of interest to Hawai'i residents with an IS-related background who would like to enhance their job and income opportunities and those without an IS-related background who are interested in entering the IT job market. Current Shidler College BBA students and alumni with a management information systems specialization have expressed interest in the MSIS program. A survey of current MIS majors in September 2017 indicated that 40-50% would consider continuing in a 4-1 pathway or returning to school for an advanced degree. At student development events, the IS professionals who have mentored recent alumni and CIOs leaders of Hawai'i businesses have expressed support for an MSIS program that involves practical training to help develop the IS/IT workforce in Hawai'i. An in-state program associated with the only research one institution (University of Hawai'i at Mānoa) and the nationally-recognized Shidler College of Business will provide students with an educational advantage that other programs (such as remote, online masters programs) cannot – the opportunity to learn from and network with Hawai'i firms and professionals to develop their practical knowledge and career opportunities.

2. Program design.

A. Provide a description of curriculum organization, total credits to complete the program including all prerequisite requirements, admission policies, advising, and other aspects of the program, with reference to its goals/outcomes.

The Masters of Science in Information Systems is a 30-semester hour Plan B masters degree (48 semester hours, for students lacking all undergraduate prerequisites). Students entering the program are expected to have an undergraduate degree with an emphasis in information systems and technologies within a business organizational environment. Following graduate policy, students must have a 3.0 (B) GPA for admission. The profile of entering students will be similar to that of BBA graduates with an MIS undergraduate major. Students whose educational background differs from this profile can apply for prerequisite waivers with equivalencies (e.g., computer science majors) or will be required to complete undergraduate preparation prior to enrollment in the MSIS. Waivers of prerequisite undergraduate coursework with appropriate testing will be offered to working IS professionals without the undergraduate prerequisites.

A 4-1 pathway, based on Manoa's combined bachelor's/master's programs guidelines for undergraduates, will be proposed after the MSIS program is approved. This pathway will allow current students to carry over 9 units of credit in approved MSIS courses (see below), in accord with UH/UHM policies. Admission to the MSIS 4-1 pathway will be open to undergraduate students at UHM and to students at UHWO and UHH (if there is a demand for this option) with approved course equivalencies for prerequisites.

An MSIS faculty director will oversee admissions, in conjunction with the Shidler College of Business Graduate Student Office and an admissions sub-committee of ITM Faculty. The faculty director will advise newly admitted students in course selection and progression through the program. The faculty instructor for the Capstone class in spring/summer will oversee the student capstone experience.

Prerequisites for admission:

- Demonstrated ability to code in at least one programming language (e.g., PHP, C++, Python, Java) at an advanced-beginner level commensurate with an undergraduate course.
- Bachelors degree with following criteria:
 - Equivalencies to undergraduate MIS core curriculum (ITM352, 353, 354, 431) from an accredited 4-year college.
 - General business curriculum, including at least one course each in accounting (equivalent to ACC201 or ACC201) and finance (equivalent to BUS314)
- Undergraduate students in a 4-1 pathway will complete these prerequisites prior to beginning MSIS coursework.
- Students with completed bachelors degree who do not meet prerequisites will complete prerequisites before advancing to MSIS courses.
- No work requirement but internships and/or work experience desirable.

Core (12 semester hours)

- ITM 682 Enterprise Data and Information Management
- ITM 685 Digitally-Enabled Business Processes
- ITM 684 Enterprise System Architecture and Management
- ITM 433 Advanced Security

Electives (12 semester hours)

- BUS 619 Data Analytics and Statistics for Business
- BUS 625 Digital Transformation with Information Systems and Technology
- ITM 680 Project Management, Information Technology and Change
- ITM 683 Business Intelligence and Data Analytics
- ITM 688 Management of Health Information Technology and Population Health
- ITM 660 Special Topics in Information Systems, e.g.
 - Big data analytics and visualizations; Data, Text and Webmining
 - Application development for IoT, mobile apps
 - Service analytics and Smart Service Systems

Capstone Experience (6 semester hours)

- ITM 696 for Capstone project (3 semester hours taken twice, or 6 semester hours taken once)

B. Includes an academic map for certificate of achievement, associate and bachelor degrees that demonstrate on time completion.

N/A

C. Provide justification for a program that is more than 30 credits for a certificate of achievement or 60 credits for an associate degree or 120 credits for a bachelor's degree.

N/A

D. Describes provisions for articulation with UH Community College degrees for bachelor's degrees.

N/A (Students in a 4-1 pathway must already be enrolled in a 4-year degree program.)

3. Student Demand

A. Describes the profile of students who will likely enroll in the program and include a discussion on the likelihood of the program attracting new students to the campus or existing students.

Students who will likely enroll in the program include:

1. Current undergraduates students interested in the 4+1 pathway
2. Recent alumni of the Shidler College of Business BBA program in the management information systems major who would like to enhance their job and income opportunities
3. Recent graduates of the Shidler College of Business BBA program and BA/BS programs from other disciplines in the University of Hawai'i System who are interested in entering the IT job market
4. Graduates who hold a bachelor's degree from an accredited U.S. college or university or non-U.S. institution of higher education
5. International students who are interested in building their credentials for employment in the IS profession, particularly those interested in up to 24 months of (STEM) Optional Practical Training in the U.S. after graduation
6. IS professionals or professionals in allied fields seeking to enhance their base of technical knowledge

The MSIS and the 4-1 pathway (to be designed after approval) will support the Shidler College of Business' direct admit program. Under the DAP, more than 70 students per year have enrolled in UH Mānoa from Hawai'i public and private schools, other U.S. states, and Asia. Direct admission and engagement with the College also enhances student retention. The opportunities to obtain a Master degree in one additional year in the 4-1 pathway in a highly paid and in-demand professional field will further enhance this program.

Recent alumni of the Shidler College of Business will be motivated to return to school for a 1-year full-time or 2-year part-time program. The College successfully fields masters-level programs aimed at working professionals in the Masters of Human Resource Management, as well as MBA programs, indicating that this option is attractive for Hawai'i residents. The College has experience with alternative scheduling and use of instructional technology to

facilitate participation by Neighbor Island and working professionals.

Along with other initiatives at the UHM campus to attract international students, the Shidler College of Business has a vibrant and engaged alumni network in Asia, particularly in Hong Kong and Vietnam. The enhanced offering of a 4-1 option for the MSIS, or for a 1-2 year STEM masters course (with up to 24 months of OTP eligibility), will further enhance new student enrollment from these programs.

Finally, for students graduating throughout the UH System, the MSIS offers an opportunity to attend a high quality, accredited program (under AACSB) within the state's university system.

B. Provide evidence of student interest (i.e. needs assessment).

The ITM faculty undertook the process of formulating an MSIS degree proposal in large part due to student interest in opportunities for masters-level education. In September 2017, a survey of students currently majoring in MIS indicated that 50% would be interested or very interested in undertaking a Master's degree in information systems. At MIS alumni events, former students articulate their interest in returning for a degree, or their advice to other students to consider doing so. In both situations, their motivations are two-fold.

First, the undergraduate MIS degree, while a useful first-step to a IS professional career, provides a broad, base-line preparation of five (5) major courses within the BBA degree. The BBA itself provides a broad base in business knowledge spanning management, marketing, finance, and accounting that sets apart MIS majors from those with purely technical degrees. However, with firms offering less support for on- the-job training, yet also demanding higher levels of preparation of entry-level hires, reaching the first professional job to gain needed experience is challenging. Second, the IT industry continues to change rapidly, with new technologies, new applications, and new business challenges (such as escalating cyber attacks). Employees need advanced, specialized education and training to meet these challenges. The IT industry continues to complain of a technology "skills shortage" and to rely heavily on international workers via H1B visas or outsourcing firms to fill these gaps. Students are aware that they need heightened skills to compete in these domains, and they must invest in themselves to do so.

It is important to note that a large number of business colleges across the U.S. provide specialized masters degrees, including the MSIS. (See Appendix B for a list of schools.) Some of these programs date back to the late 1990s; others reflect a shift towards specialized degrees for graduate business education. Given the needs for IS professionals in Hawai'i and the success of MSIS programs in many other similar institutions, we are confident that student interest is more than sufficient to support this vital addition to the Shidler College of Business curriculum.

C. Includes an estimate number of majors per year with an explanation on how this number was determined.

We reviewed data for MSIS programs at other universities (See Mandviwalla et al, 2016 and Appendix 2) and surveyed current students and alumni. Based on this data, the MSIS program is expected to have a steady enrollment of 16 - 20 graduates per year-by-year 3, with 30-40 enrolled annually on a full- and part-time basis. Experiences of the MSIS program at other universities (e.g. Brigham Young University, Provo, where a new ITM faculty has taught) indicate 40% of BBA majors in Management Information Systems continue into their 5th year to acquire a Master's degree. At UHM, 12-16 MIS majors are anticipated in a 4-1 pathway (based on 35-40 MIS majors/year graduating now). An alumni base of over 200 MIS majors in the last 5 years is estimated to provide 10-15 students returning part-time to the MSIS per annum in future years. A projection of 10-15 full-time international students is feasible, with OPT as an added attraction.

4. Program Resources and Efficiency

A. Describe resources required for program implementation and first cycle operation.

Number, source, and cost of faculty; library requirements; support personnel; estimated cost of supplies, equipment and CIP; facilities to be utilized.

- **Faculty**: The ITM Department currently has 8 FTE tenure-track faculty. No additional FTE are requested to support the MSIS degree program. Some courses will be co-offered to the existing MBA program for efficiency. Some courses will be taught by adjunct lecturers drawn from IS professionals. Courses can be offered as overload and in summer to ensure timely offerings.
- **Library resources**: MSIS students will use existing resources of the College and UHM.
- **Physical resources**: The proposed MSIS program will utilize the current facility and resources, such as classrooms. The Shidler College of Business operates a computer laboratory, if this facility is needed.
- **Other Resources Required**: The proposed MSIS program will share administrative staff with other Shidler College of Business graduate programs. These departments will absorb incremental costs of supplies and marketing materials. The program faculty director may receive a teaching reduction to attend to administrative duties, particularly during the program startup years. ITM faculty will work with ITS to utilize software or educational service licenses available through campus-wide programs, as required.

B. Describe the expected sources of funds, including sources of reallocated funds.

The MSIS program will be funded by student tuition. No reallocation of funds is required. (See attached resources spreadsheet for details.)

C. Compare anticipated cost per SSH, cost per major, SSH/faculty, average class size or other quantitative measure with other programs in the college and similar programs on other UH campuses. Complete the cost template and narrative.

SEE ATTACHED RESOURCES SPREADSHEET FOR DETAILS.

The MSIS program will be offered by the Department of ITM, which operates within the Shidler College of Business. Shidler College of Business departments support the BBA

degree (with over 1200 students and 9 different majors), the MBA degree, and the PhD degree and also share across the departments a large portion of the BBA and MBA curriculum. For instance, the ITM department staffs the equivalent of 6.0 FTE in the non-departmental (shared) “BUS” curriculum at undergraduate and masters levels, in addition to 2.5 FTE in the undergraduate MIS major. Thus, MSIS statistics, such as cost per SSH or cost per major, cannot meaningfully be compared to wholly departmental programs in other UHM colleges.

To provide a partial basis for comparison of efficiencies of the proposed MSIS program, we compared the number of sections offered, students enrolled, student semester hours, and average class sizes for other departments that offer a professional masters degree and/or a technically focused masters degree. For instance, the Masters of Social Work and Library Science are professional degrees that working professionals take to become certified or advance professionally. The Masters in ICS, EE, CEE, and ME are technically-oriented masters degrees. The Learning, Technology and Design (LTEC) masters provide professionally oriented technical training to teachers. We included Nursing and Social work as examples of large (for UHM) masters programs. We also included the MBA program offered by Shidler College of Business, which includes both the BUS core offerings and specialized courses from its 5 departments, the Masters of HRM, and the Masters of Accounting.

Table 3 presents these approximate numbers for comparisons for fall, 2016 enrollments. Note that only 500- and 600-level course offerings are included; 699-directed readings (typically offered to individual students) are excluded. Using the conservative estimates of a steady flow of 30-40 MSIS students taking two to four different courses per semester, and four different MSIS course offerings, we believe the MSIS can be offered efficiently compared to comparable professionally-oriented masters offered at UHM.

Table 3: Comparison of MSIS efficiencies with other programs at UHM and Shidler College

	Secti	Total	Studen	SSH	Average
MSIS (est)	4	12	60	180	15.0
ACC	4	8	63	172	15.8
BUS(*)	38	67.5	634	1513	16.7
FIN(*)	4	12	91	273	22.8
HRM	5	15	200	600	40.0
ITM(*)	1	3	26	78	26.0
MIR(*)	2	6	56	168	28.0
MKT(*)	2	6	44	132	22.0
MBA (*)	47	94.5	851	2164	18.1
ICS	9	3	84	218	9.3
LIS	16	42	149	447	9.3
TIM	7	19	27	79	3.9
LTEC	19	51	226	606	11.9
CEE	13	35	73	185	5.6

EE	7	21	36	108	5.1
ME	3	4	27	71	9.0
SW	24	70	442	1318	18.4
NURS	42	93	647	1784	15.4

Data extracted via Institutional search at <https://www.hawaii.edu/irodr/courseSearchDisplay.do>

D. List similar programs at other UH campuses and describe how the proposed program differs or is similar to these programs. Provide rationale for the new program if there are similar existing program(s).

The proposed MSIS program will not duplicate current offerings. While it shares a focus on IT with Master of Science in Computer Science degree program, the MSIS focuses on project management, strategic applications of packaged IT/IS capabilities, and applied workflow and process improvements through implementation of IT systems. In contrast, a Master's in computer science provides more mathematically and technically-oriented coursework in programming of software and hardware applications. Given the extent and variety of IT/IS workforce needs, the MSIS and ICS masters will contribute to the Hawai'i's job market in complementary ways.

5. Complete a risk assessment, if needed (e.g. insurance needs, vendor contract review, off-campus site management, etc.).

N/A

6. Program effectiveness

A. Describe the plan for assessing the quality of student learning.

The AACSB International accredits the Shidler College of Business and its degree programs. As such, the College and Department of ITM are required to establish and employ systematic measurements of student learning that facilitate continuous improvement of pedagogy and course content to help ensure delivery of a high quality educational experience. The College maintains a standing Faculty committee, the Learning Assessment Committee, that works with department chairs, program directors, and the College's Curriculum and Programs Committee to develop and implement such measurement systems. The Department of IT Management will work with this committee to develop a similar system for the MSIS Program, in accordance with the MSIS Curriculum Guideline (Appendix 1).

Assessment will include analysis of achievement of learning objectives within each of the four core courses of the MSIS through faculty evaluation of specific central assignments completed by all students. Student learning goals will accommodate specialization, reflected across the nine (9) areas of competencies identified in the MSIS Global Competency Model, in the mix of elective courses students choose (See Appendix 1). Assessment will be evaluated in each course, as well as in the Capstone project experience. Percentages of students who exceed, meet, or fall below expectations on those assignments will be monitored and compared from within each cohort and across cohorts. The faculty

director, department chair, and ITM faculty will use this information to make improvements in curriculum and pedagogy, as needed, to better achieve central learning objectives.

In addition, student course evaluations for every course will be shared with the faculty director to enable improvements on the part of individual faculty within the MSIS Program. Finally, employers will be surveyed bi-annually to evaluate the curriculum content and to report on experiences with MSIS-educated employees. This feedback will be utilized to improve the program.

B. Identify relevant program accreditation and plans to meet accreditation requirements.

The Shidler College of Business at the University of Hawai'i at Mānoa is accredited by the AACSB International. The MSIS program will follow AACSB International requirements for accreditation as one of the programs offered by the College and will not adversely affect accreditation. If the program has been approved to start in Fall 2019, we will include the program to our next AACSB accreditation in Fall 2020.

References:

Topi, Heikki; Karsten, Helena; Brown, Sue A.; Carvalho, João Alvaro; Donnellan, Brian; Shen, Jun; Tan, Bernard C.Y.; and Thouin, Mark F. (2017) "MSIS 2016 Global Competency Model for Graduate Degree Programs in Information Systems," *Communications of the Association for Information Systems*: Vol. 40 , Article 18. Available at: <http://aisel.aisnet.org/cais/vol40/iss1/18>

Mandviwalla, Munir, Harold, Crystal, and Yastremsky, David. (2016) *Information Systems Jobs Index 2015*. Published by the Association for Information Systems and Temple University, Fox School of Business. Available at: <http://isjobindex.com>

Hawaii Department of Labor <https://labor.hawaii.gov/wp-content/uploads/2016/10/20161005Employ-Projs2014-24-1.pdf>

U.S. News & World Report <http://money.usnews.com/careers/best-jobs/rankings/best-technology-jobs>

Appendix

1

The following materials are extracted from the document, *MSIS 2016 Global Competency Model for Graduate Degree Programs in Information Systems* (Topi et al, 2017). This report, commissioned and approved by the professional organizations, The Association for Information Systems (AIS) and the Association for Computing Machinery (ACM), was developed by leading scholars in the IS academic and professional fields, based on industry needs, existing curriculum, and future developments in the field. The Proposed MSIS program draws on this guideline to re-vision courses currently offered by the department and to develop, as needed, new course offerings to enable students to achieve competencies.

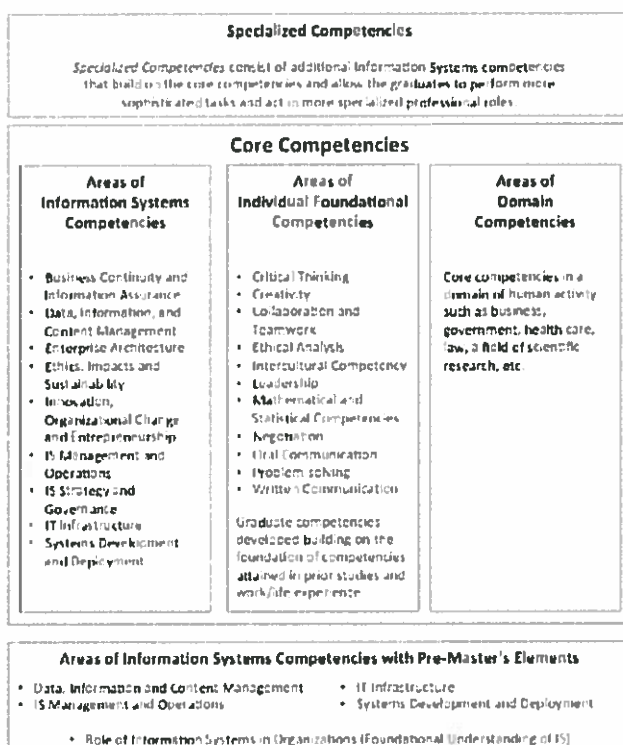


Figure ES1. MSIS 2016 Competency Structure

The model depicted here assumes that incoming MSIS students have an undergraduate level preparation in IS topics (areas of information competencies with Pre-Master's elements). The purpose of the masters is to extend and deepen knowledge and competency in areas of Information Systems practice. Students also further their individual foundational competencies, for instance in critical thinking or negotiation, through pedagogical design and program experiences. Students may focus on domain competencies, for instance, in the healthcare field, where there is a growing need for health informatics specialists who understand healthcare settings and how to collect and utilize data for organizational and process improvements.

The following summaries, extracted from this report, provide a brief overview of the nine Areas of Information Systems Competencies depicted above.

1. Competencies in the area of Business Continuity and Information Assurance (BCIA)

Area description: the Business Continuity and Information Assurance competency area

mainly concerns the continuity, auditing, and assurance of information systems. It generally covers areas such as risk avoidance, security management, and quality auditing. The challenging issues related to business continuity and information assurance span from tactical and strategic to technical and operational levels. They often involve a range of processes from management, such as policy and standard setting, to hands-on skills, such as system contingency and recovery planning.

2. Competencies in the area of Data, Information, and Content management (DATA)

Area description: the Data, Information, and Content management area covers competencies that enable graduates to be effective contributors in processes that improve the domain's ability to achieve its goals using structured and unstructured data and information effectively.

3. Competencies in the area of Enterprise Architecture (EARC)

Area description: Enterprise architecture has two aims: managing the complexity of information systems and technologies and aligning these systems/technologies with the organization's strategy. The area covers competences that enable graduates to participate in planning, building, using, maintaining, and evaluating architectures.

4. Competencies in the area of Ethics, Impacts and Sustainability (ETIS)

Area description: the Ethics, Impacts, and Sustainability competency area covers the conceptualization and implementation of environmentally and socially sustainable IT solutions that are aligned with the responsibilities of organizations and in compliance with legislative and regulatory requirements and industry standards. This competency area addresses key questions such as environmental and social sustainability, safety and health, privacy, and integrity. It also covers the impact of IT on the nature of work and workplaces and explores how culture and ethics (internal pertaining to organizations and external pertaining to stakeholders) shape behavior. These areas tend to be aligned with a strategic or a tactical level of organizational decision-making.

5. Competencies in the area of Innovation, Organizational Change, and Entrepreneurship (IOCE)

Area description: the Innovation, Organizational Change, and Entrepreneurship area covers the capability to recognize and exploit the potential afforded by current and upcoming technologies to address existing and new business opportunities. This area also includes competencies required to understand and to intervene in different forms of domain activities (e.g., work units, work teams, processes, organizations, markets, society setting) in order to use information technologies to improve the way those business activities are structured and performed.

6. Competencies in the area of IS Management and Operations (ISMO)

Area description: the IS Management and Operations area covers the capability to develop, maintain, and consistently improve domain performance while providing appropriate information systems, services, and infrastructure. The capability focuses externally on creating value for the domain and internally on IS staff motivation, performance, and accountability.

7. Competencies in the area of IS Strategy and Governance (ISSG)

Area description: the IS Strategy and Governance area covers the creation and implementation of long- term plans for designing, delivering, and using organizational information systems to achieve strategic domain goals and objectives. This area also covers monitoring and controlling organizational IS resources to ensure alignment with and achievement of strategies, goals, and objectives.

8. Competencies in the area of IT Infrastructure (INFR)

Area description: the IT Infrastructure area covers competencies that allow graduates to contribute to needs analysis for and design and implementation of effective, technically correct IT infrastructure solutions.

9. Competencies in the area of Systems Development and Deployment (SDAD)

Area description: the Systems Development and Deployment area covers the design of information systems and services, including the design of how humans interact with and how they experience IT artifacts. It also includes competencies related to systems implementation and the deployment of systems to organizational use.

Appendix 2: Examples of U.S. Universities with Master of Science in Information Systems Programs

Institutions	Program Type	Duration	Tuition
Carnegie Mellon University	Master of Information Systems Management	1-2 years	\$22,750 - \$23,435
University of Arizona	Master of Management Information Systems	1-2 years	\$13,832/semester
Purdue University	Master of Science in Business Analytics and Information Management	1 year	\$29,000
Baylor University	Master of Science in Information Systems	1-2 years	\$14,247/semester
University of Washington	Master of Science in Information Systems	1 year	\$8,250/quarter
M.I.T (Joint Engineering & Management)	Master of Systems Design and Management	1-2 years	\$27,810/term
N.Y.U.	Master of Science in Management and Systems	2 years	\$16,551/semester
University of Illinois, Urbana/Champaign	Master of Science in Technology Management	1 year	\$16,280 FA, SP \$8,130 SU
Indiana University	Master of Science in Information Systems	2-3 semesters	\$7,800/semester
Cornell University	MPS in Information Science	1 year	\$25,356/semester
University of Maryland, University Park	Master of Information Management	2 years	\$7,812/semester
Temple University	Master of Science in IT Auditing and Cybersecurity	3 semesters	\$9,852/semester
Claremont Graduate Institute	Master of Science in Information Systems and Technology	1-2 years	\$14,776/semester
San Diego State University	Master of Science in Information Systems	Not specified	\$7,223/semester
Syracuse University	Master of Science in Business Analytics	Not specified	\$1,443/credit
Brigham Young University	Masters in Information Systems	1-2 years	\$5,821/semester

Sources: Individual school websites and <http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-science-schools/computer-systems-rankings>

NEW PROGRAM RESOURCE TEMPLATE

This template identifies new resources needed to implement the proposed program and its relationship to the existing departmental/division resources. Please include an explanation of this analysis in your program proposal narrative.

Part I: Program Overview

Campus: UH Manoa

Proposed degree/certificate: **MS in Information Systems (MSIS)**

Expected first term to offer new program: **Fall 2019**

College/Department/Division: **Shidler College of Business, Department of Information Technology Management**

Programs currently offered by the College/Division: **BBA in Management Information Systems, College-wide MBA, PhD in Business Administration; PhD in Communication & Information Sciences jointly offered with the College of Social Sciences and the College of Natural Sciences**

	Previous Year		Current Year	Projected				Comments
	2016-17	2017-18		2018-19	Year 1 2019-20	Year 2 2020-21	Year 3 2021-22	
A. ENROLLMENT (Fall Headcount)								
Projected: MSIS			n/a	20	25	25	25	
Undergraduate (BBA in MIS)	51	59	72	75	75	75	75	Primary majors only
*Graduate (MBA, PhD Business Admin)	265	260	220	220	220	220	220	Shidler college-wide programs only
B. COMPLETION (Annual)								
Projected: MSIS			n/a	n/a	20	25	25	
Undergraduate (BBA in MIS)	35	36	37	37	37	37	37	Primary majors only
*Graduate (MBA, PhD Business Admin)	116	147	130	130	130	130	130	Shidler college-wide programs only
C. COURSES, SECTIONS, SSH (Annual)								
Projected New Courses			n/a	2	2	2	2	ITM 682, ITM 696
Projected New Sections			n/a	2	2	2	2	
Projected New Course SSH			n/a	120	150	150	150	
Current Courses Offered	17	15	17	17	19	19	19	
Current Sections Offered	19	17	19	19	21	21	21	
Current Annual SSH	1,011	1,099	1,011	1,011	1,491	1,491	1,491	

Part II: Program Resources

D. CURRENT RESOURCES/FUNDING	Current Year
Tuition/Special Fund Allocation	2,896,805.00
General Fund Allocation	9,550,035.00
Summer Session Allocation	645,416.00
Program/Course Fee Allocation	1,027,500.00

E. CURRENT ACADEMIC PERSONNEL	Current Year
Current Faculty FTE	8
Current Faculty Salaries (\$)	1,467,696.00
Current Lecturers (\$)	118,603.71
Current Graduate TAs	1

	Current Year	Projected Years			Comments	
	2018-19	2019-20	2020-21	2021-22		2022-23
F. PROJECTED ACADEMIC PERSONNEL (I-Faculty)						
Projected New Faculty FTE	0	0	0	0	0	no additional FTE is projected since the program is offered through executive education.
Projected New Faculty Salaries (\$)	\$-	\$-	\$-	\$-	\$-	
Projected New Lecturers (\$)	\$-	\$-	\$-	\$-	\$-	
Projected New Graduate TAs	0	0	0	0	0	

G. TOTAL NEW PROGRAM RESOURCES (e.g., new positions, lecturers, equipment or software for labs, accreditation fees, insurance, compliance costs, reporting, vendor contracts, etc.)						
Promotional Expenses	\$0	\$20,000	\$15,000	\$10,000	\$8,000	including ads, brochures/fliers and promotional trips
Executive Ed Staff Expenses	\$0	\$10,000	\$12,000	\$15,000	\$15,000	including books/lecture materials and computer, network expenses
Outreach Overhead	\$0	\$30,000	\$30,000	\$30,000	\$30,000	Outreach administrative fees of \$40 per credit student effective through Summer 2017 (assuming same fees).
Total New Resources Needed	\$0	\$60,000	\$57,000	\$55,000	\$53,000	TOTAL: \$225,000

H. Indicate if new facilities are needed to support the proposed program (include any off-campus facilities)
None.

I. Explain how new program resources will be funded (e.g., reallocation, grants, contracts)
Since the program is operated through Shidler's executive education. We expect the new program resources be funded by tuition collected.

J. Indicate if there are other significant resources anticipated beyond the projected years
None.

K. ADDITIONAL COMMENTS: Overall allocation for the College is provided since we don't budget on a departmental level.

Part III: Approvals

By signing below, I have reviewed and approve the New Program Resource Template. (printed name, signature and date)

Department/Division Chair:

College/Department Administrative Officer:

Dean:

Vice Chancellor for Academic Affairs:

Vice Chancellor for Administration:

New Program Resource Template Details

- A. Headcount Enrollment. Headcount enrollment of majors each Fall semester. Located at URL: <https://www.hawaii.edu/institutionalresearch/venrReport.action?reportId=ENRT00> Campus data may be used when majors are a subset of enrollment reported in IRAO reports.
- B. Completion. Provide counts of the number of degrees/certificates awarded annual (fall, spring, summer). Located at URL: https://www.hawaii.edu/institutionalresearch/degreeReport.action?reportId=MAPS_DEG_TOC
- C. Courses, Sections, SSH. Provide annual count (fall, spring, summer) or courses offered, number of sections offered and SSH. [https://www.hawaii.edu/irodr/login.do?](https://www.hawaii.edu/irodr/login.do)
- D. Current Resources/Funding. Data should come from the College/Department's Administrative Officer using the most current information available.
- E. Current Academic Personnel. Instructional costs without fringe. Direct salary cost for all current faculty and lecturers teaching in the program.
- F. Projected Academic Personnel. Instructional costs without fringe. Projected direct salary cost for all new faculty and lecturers teaching in the program.
- G. Total New Program Resources. Summarize new cost that will be incurred due to the new program and provide a grand total. Should include additional instructional cost, special equipment/software, fees, etc.
- H. Facilities. Indicate if any new facilities (classrooms, labs, buildings, etc.), including off-campus facilities, are needed to support the proposed program.
- I. Funding for New Program Resources. Explain how the department will fund the new program cost. If reallocating resources, indicate the source and impact of the reallocation.
- J. Additional Anticipated Cost. Indicate if there are other significant resources (human, administrative, legal, etc.) anticipated beyond the years listed in the New Program Resource Template.

Reviewed by: Vice Chancellor of Administration: 1/25/17

Reviewed by: Vice Chancellors of Academic Affairs: 2/14/17

University of Hawai'i at Mānoa – Four-Year Academic Plan 2019-2020

Shidler College of Business

Bachelor of Business Administration (BBA) - Management Information Systems

This is a sample academic plan. Students should meet with an academic advisor prior to registration to formulate their own plan.

	Year 1		Year 2		Year 3		Year 4	
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
ECON 130 (DS)	3		ACC 200	3	BUS 310	3	BUS 312/313/314	3
PSY 100 or SOC 100 (DS)	3		Computer Competency	4	BUS 311	3	BUS 312/313/314	3
COMG 151 or 251 (DA)	3		DB (or DP)	3	ITM 352	3	ITM 354	3
FW	3		HSL 101 or Culture	3	Non-BUS Elective 300+	3	IB Elective	3
FG (A/B/C)	3		HAP	3	HSL 201 or Culture	3	Non-BUS / Non-major Elective 300+	3
Credits	15	16	16	16	15	15	15	15
Spring		Spring		Spring		Spring		Spring
ECON 131 (DS)	3		Submit Application by Deadline	3	BUS 312/313/314	3	BUS 345	3
Calculus (FQ)	3		ACC 210	3	BUS 315	3	MIS Major Technical	3
FG (A/B/C)	3		BLAW 200	3	ITM 353	3	Elective 300+	3
DH/DL	3		BUS Communication	3	ITM 431	3	Non-BUS / Non-major	3
DP (or DB)	3		HSL 102 or Culture	3	HSL 202 or Culture	3	Elective 300+ (BUS 395 recommended)	3
DY	1		Non-Business (300+)	3			Elective	3
							Elective	1
Credits	16	15	15	15	15	15	13	13
Summer		Summer		Summer		Summer		Summer
Credits	0	0	0	0	0	0	0	0
Total Credits	31	62	62	92	92	92	120	120

Notes:

Students may have to take a placement exam to be able to register for Calculus.

Students must incorporate all focus requirements into this plan. Focus designations (i.e., W, E, O, H) are CRN & semester specific.

Check with your academic advisor for assistance with appropriate course selections and to discuss requirements for double majors.

Minimum 45 upper division (300+ course) credits are required.

University of Hawai'i at Mānoa
Shidler College of Business

Combined Bachelor's and Master's Degree Pathway (4+1 pathway)
MIS Major pathway to Masters in Science in Information Science (MSIS)

This is a sample academic plan. Students should meet with an academic advisor prior to registration to formulate their own plan.

Freshman (Y1)		Sophomore (Y2)		Junior (Y3)		Senior (Y4)		Graduate (Y5)	
Course	Credits	Course	Credits	Course	Credits	Course	Credits	Course	Credits
ECON 130 (DS)	3	ACC 200	3	BUS 310	3	BUS 312/313/314	3	ITM 682	3
PSY 100 or SOC 100 (DS)	3	Computer Competency	4	BUS 311	3	BUS 312/313/314	3	ITM 684	3
COMG 151 or 251 (DA)	3	DB (or DP)	3	ITM 352	3	ITM 354	3	ITM 683 or 680	3
FW	3	HSL 101 or Culture	3	Non Business (300+)*	3	Non Business (300+)*	3		
FG (A/B/C)	3	HAP	3	HSL 201 or Culture	3	BUS619***	3		
semester credits	15	semester credits	16	semester credits	15	semester credits	15	semester credits	9
Spring semester		Spring semester		Spring semester		Spring semester		Spring semester	
Course	Credits	Course	Credits	Course	Credits	Course	Credits	Course	Credits
ECON 131 (DS)	3	ACC 210	3	BUS 312/313/314	3	BUS 345	3	ITM 685	3
Calculus (FQ)	3	BLAW 200	3	BUS 315	3	IB Elective	3	ITM 660 or BUS 625	3
FG (A/B/C)	3	BUS Communication	3	ITM 353**	3	ITM433***	3	ITM 696****	3 - 6
DH/DL	3	HSL 102 or Culture	3	ITM 431	3	ITM 680 or ITM683***	3		
DP (or DB)	3	Non Business (300+)	3	HSL 202 or Culture	3	Elective	1		
DY	1	semester credits	15	semester credits	15	semester credits	13	semester credits	9 - 12
semester credits	16	semester credits	15	semester credits	15	semester credits	13	semester credits	9 - 12
Summer		Summer		Summer		Summer		Summer	
Course	Credits	Course	Credits	Course	Credits	Course	Credits	Course	Credits
		Internship* (recommended)	3	Internship* (recommended)	3	Internship (recommended)	3	ITM 696 (Optional)	3
		ITM 354 (option)	3						

Notes:

Minimum 45 upper division (300+ course) credits are required.

Students must incorporate all focus requirements into this plan. Focus designations (i.e., W, E, O, H) are CRN & semester specific.

* Students must take one IB elective, which may double count as a non-Business or non-Major class

** 2-3 non-business / non major classes (9 semester hours) are required, internship may substitute for 1 class

***MSIS Pathway class. Must pass with "B" or better. Students who take in Fall of Senior year can be admitted for Spring pathwaya

****Double-counting of BBA/MSIS courses (up to 9 units)

*****ITM433 counts as MIS major tech elective and is required for MSIS.

*****Students may select either ITM680 or ITM683 in 4th year, depending on offering that spring

*****Students may elect to take 3 or 6 credit hours of the 6-hour Capstone in the Spring (Y5). Otherwise 3 credit hours of 696 are required in Summer of Y5

University of Hawai'i at Mānoa
Shidler College of Business
Combined Bachelor's and Master's Degree Pathway (4+1 pathway)
MIS Major pathway to Masters in Science in Information Science (MSIS)

This is a sample academic plan. Students should meet with an academic advisor prior to registration to formulate their own plan.

Freshman (y1)		Sophomore (y2)		Junior (y3)		Senior (y4)		Graduate (y5)	
Fall Semester		Fall Semester		Fall Semester		Fall Semester		Fall Semester	
Course	Credits	Course	Credits	Course	Credits	Course	Credits	Course	Credits
ECON 130 (DS)	3	ACC 200	3	BUS 310	3	BUS 312/313/314	3	ITM 682	3
PSY 100 or SOC 100 (DS)	3	Computer Competency	4	BUS 311	3	BUS 312/313/314	3	ITM 684	3
COMG 151 or 251 (DA)	3	DB (or DP)	3	ITM 352	3	ITM 354	3	ITM 683 or 680	3
FW	3	HSL 101 or Culture	3	Non Business (300+)*	3	Non Business (300+)*	3		
FG (A/B/C)	3	HAP	3	HSL 201 or Culture	3	BUS619***	3		
semester credits	15	semester credits	16	semester credits	15	semester credits	15	semester credits	9
Spring semester		Spring semester		Spring semester		Spring semester		Spring semester	
Course	Credits	Course	Credits	Course	Credits	Course	Credits	Course	Credits
ECON 131 (DS)	3	ACC 210	3	BUS 312/313/314	3	BUS 345	3	ITM 685	3
Calculus (FQ)	3	BLAW 200	3	BUS 315	3	IB Elective	3	ITM 660 or BUS 625	3
FG (A/B/C)	3	BUS Communication	3	ITM 353**	3	ITM433***	3	ITM 696****	3 - 6
DH/DL	3	HSL 102 or Culture	3	ITM 431	3	ITM 680 or ITM683***	3		
DP (or DB)	3	Non Business (300+)	3	HSL 202 or Culture	3	Elective	1		
DY	1	semester credits	15	semester credits	15	semester credits	13	semester credits	9 - 12
semester credits	16	semester credits	15	semester credits	15	semester credits	13	semester credits	9 - 12
Summer		Summer		Summer		Summer		Summer	
Course	Credits	Course	Credits	Course	Credits	Course	Credits	Course	Credits
		Internship* (recommended)	3	Internship* (recommended)	3	Internship (recommended)	3	ITM 696 (Optional)	3
		ITM 354 (option)	3	ITM 354 (option)	3				

Notes:

Minimum 45 upper division (300+ course) credits are required.

Students must incorporate all focus requirements into this plan. Focus designations (i.e., W, E, O, H) are CRN & semester specific.

* Students must take one IB elective, which may double count as a non-Business or non-Major class

* 2-3 non-business / non major classes (9 semester hours) are required, internship may substitute for 1 class

**MSIS Pathway class. Must pass with "B" or better. Students who take in Fall of Senior year can be admitted for Spring pathway

***Double-counting of BBA/MSIS courses (up to 9 units)

****ITM433 counts as MIS major tech elective and is required for MSIS.

*****Students may select either ITM680 or ITM683 in 4th year, depending on offering that spring

*****Students may elect to take 3 or 6 credit hours of the 6-hour Capstone in the Spring (Y5). Otherwise 3 credit hours of 696 are required in Summer of Y5

MINUTES
BOARD OF REGENTS MEETING
MARCH 28, 2019

I. CALL TO ORDER

Chair Lee Putnam called the meeting to order at 10:03 a.m. on Thursday, March 28, 2019, at Kapi'olani Community College, Ka 'Ikena Room, 'Ōhelo Building, 4303 Diamond Head Road, Honolulu, Hawai'i 96816.

Quorum (15): Chair Lee Putnam; Vice Chair Jeffrey Portnoy; Vice Chair Wayne Higaki; Regent Simeon Acoba; Regent Kelli Acopan; Regent Eugene Bal; Regent Ben Kudo; Regent Michael McEnerney; Regent Randy Moore; Regent Alapaki Nahale-a; Regent Jan Sullivan; Regent Michelle Tagorda; Regent Robert Westerman; Regent Ernest Wilson Jr.; and Regent Stanford Yuen.

Others in attendance: President/UH-Mānoa (UHM) Chancellor David Lassner; Vice President for Administration Jan Gouveia; Vice President for Community Colleges John Morton; Vice President for Legal Affairs/University General Counsel Carrie Okinaga; Vice President for Academic Planning and Policy Donald Straney; Vice President for Research and Innovation Vassilis Syrmos; Vice President for Information Technology/Chief Information Officer Garret Yoshimi; Vice President for Budget and Finance/Chief Financial Officer Kalbert Young; Vice President for Advancement/UHF Chief Executive Officer (CEO) Tim Dolan; UHM Vice Chancellor for Research/Interim Vice Chancellor for Academic Affairs Michael Bruno; Interim UH-Hilo (UHH) Chancellor Marcia Sakai; UH-West O'ahu (UHWO) Chancellor Maenette Benham; University of Hawai'i Maui College (UHMC) Chancellor Lui Hokoana; Kapi'olani Community College (KapCC) Chancellor Louise Pagotto; Executive Administrator and Secretary of the Board of Regents (Board Secretary) Kendra Oishi; and others as noted.

II. APPROVAL OF MINUTES OF THE FEBRUARY 28, 2019, MEETING

Vice Chair Higaki moved to approve the minutes of the February 28, 2019, meeting, seconded by Regent Acopan, and the motion carried unanimously.

III. PUBLIC COMMENT PERIOD

Board Secretary Oishi announced that written testimony received by the Board Office from the following for the February 28, 2019, meeting relating to the proposed UHM reorganization and associated implementation actions was included in today's testimony packet:

- Tom Apple, in support of the consolidation of the president and chancellor positions.
- Brian Powell, on behalf of the UHM Faculty Senate (UHMFS), transmitting a resolution opposing Phase 1 of the reorganization of the Mānoa management structure.

Committee Chair Portnoy summarized the written committee report.

C. Report from the Committee on Personnel Affairs and Board Governance

Committee Chair Bal summarized the written committee report.

D. Affiliate Reports

UH Student Caucus (UHSC): Regent Acopan reported that the UHSC met on March 9, 2019, at the Palamanui campus. Kumu Eric Flores, a protector, and Dr. Greg Chun of the Maunakea Management Board gave presentations on Maunakea.

Concerns were expressed regarding classes being cut which delayed graduation. Regent Acopan asked which campuses received formal versus anecdotal complaints, and multiple community colleges, UHM, and UHH all received formal complaints.

At the previous UHSC meeting concerns were expressed regarding whether the board and UHSC had a good and strong relationship. The UHSC clarified that questions and concerns were posed to students during their legislative visits that students were not holding the UH System and board accountable, regents are out of touch with students, and students should be holding regents as a whole accountable.

Concerns were also expressed about transparency, specifically why the UHM reorganization agenda item was scheduled for a meeting on Maui in February.

The next UHSC meeting is April 6 at UHMC and regents are welcome to attend.

VI. AGENDA ITEMS

A. For Action Consent Agenda

1. Approval to Change from Provisional to Established Status: Associate of Science in Business, Kauai Community College
2. Approval to Change from Provisional to Established Status: Associate of Science in Natural Science at the following campuses:
 - a. Hawai'i Community College
 - b. Honolulu Community College
 - c. Kaua'i Community College
 - d. University of Hawai'i Maui College
 - e. Windward Community College
3. Approval of the Establishment of a Provisional Bachelor of Science in Construction Engineering University of Hawai'i at Mānoa
4. Approval of the Establishment of a Provisional Master of Asian International Affairs, University of Hawai'i at Mānoa
5. Approval of the Establishment of the Following Provisional Programs:
 - a. Master of Science in Information Systems, University of Hawai'i at Mānoa

- b. **Master of Science in Marketing Management, University of Hawai'i at Mānoa**
- c. **Master of Science in Finance, University of Hawai'i at Mānoa**
- 6. **Approval of a Template of Indemnification Provision for Subawards Between the University of Hawai'i and the Space Telescope Science Institute (STScI)**

Regent Wilson moved to approve the consent agenda, seconded by Regent Moore.

Vice Chair Portnoy indicated he was abstaining from voting on the program proposals, agenda items VI.A.1. to VI.A.5. because he regards these actions as beyond the scope of the board's purview and expertise.

The motion was put to a vote and carried unanimously, with the exception of Regent Portnoy abstaining from agenda items VI.A.1. to VI.A.5.

B. Approval of Donor Recognition Naming of the Mamoru and Aiko Takitani Innovation Center at the Culinary Institute of the Pacific at Diamond Head

VP Morton and VP/UHF CEO Dolan requested the regents approve the naming of the new Innovation Center at the Culinary Institute of the Pacific (Culinary Institute) at Diamond Head in honor of Mamoru and Aiko Takitani in recognition of a new \$2.5 million gift from the Mamoru and Aiko Takitani Foundation (Takitani Foundation), Inc. that follows prior gifts for the Culinary Institute comprising \$1.1 million. VP Morton explained that the Legislature approved up to \$10 million in funding if UH could provide matching funds. The Takitani Foundation's cumulative \$3.6 million donation helps UH provide matching funds and is the largest local, private gift to the Culinary Institute. VP/UHF CEO Dolan added that not having a pre-fixed naming policy is a sensible strategy because it allows greater flexibility in considering such propositions.

Regent Moore moved to approve the donor recognition, seconded by Regent Yuen, and the motion carried unanimously.

C. Discussion of University of Hawai'i Administrative Costs: Comparison with Peers

VP Straney provided an overview of UH's administrative costs compared with peer institutions that included cost and comparison methodologies and the number of full-time equivalent (FTE) administrators and staff per FTE students in peers as identified by the Integrated Postsecondary Education Data System (IPEDS). He noted that overall, UH has significantly fewer FTE administrators per FTE students than peers. Regarding FTE staff per FTE students, the community colleges and UH Hilo are higher than peers mainly due to the decline in FTE students, and UHM and UHWO are much lower than peers.

VP Straney also presented the American Council of Trustees and Alumni (ACTA)'s cost analysis, ACTA recommended peer groups, and administrative cost/instructional cost ratios and administrative costs per FTE student for the four-year UH campuses. He noted that UH four-year campuses are spending much less on administrative costs