UNIVERSITY OF HAWAII MAUI COLLEGE

2012-2012 ANNUAL PROGRAM REVIEW

Bachelor of Applied Science (BAS)

Applied Business and Information Technology (ABIT)

Program Mission Statement

The Applied Business and Information Technology (ABIT) program prepares graduates to be successful entrepreneurs, technology professionals and knowledge workers in today's global economy and environment. The ABIT program is within the mission of the UH Maui College, offering a four year degree that emphasizes high quality instruction and project-based learning. Currently, the ABIT program offers both lower and upper-division courses to all students. The lower-division courses are closely aligned with Business Careers III option. The ABIT program serves a diverse student population, many of whom are first generation college students. The program also adjusts to traditional and non-traditional students, many of whom hold part-time jobs while completing their educational degree. The ABIT program is structured so that students can complete their entire degree over a four year period. However, many students take longer to complete this degree based on personal and professional constraints and commitments.

I. Quantitative Indicators

Analysis of the Program

The ABIT program received an overall program health rating for 2011-2012 of Cautionary. Demand and efficiency indicators received a Cautionary rating. Effectiveness was also rated as Cautionary. The SOC code for the ABIT program is 11-1021, and according to the Bureau of Labor Statistics (at URL http://www.bls.gov/soc/2010/soc111021.htm), the code represents:

11-1021 General and Operations Managers

Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Excludes First-Line Supervisors.

Illustrative examples: *Television Station Manager, Radio Station Manager, General Superintendent*

Key data about the program health for ABIT, using SOC 11-1021, is summarized in Table 1:

Table 1: Key Data for Program Health

Demand Indicator	Number of Majors (2011-2012) = 37. New & Replacement Positions (County Prorated) = 37	ABIT Score (2011-2012) = 37/31 = 1	Healthy Score > 1.5

Efficiency Indicator	Class Fill Rate (2011-2012)	ABIT Score (2011-2012) = 43%	Healthy Score > 75%
Effectiveness Indicator	Persistence (Fall to Spring) = 89%	ABIT Score (2011-2012) = 89%	Healthy Score > 75%

In general, the SOC code 11-1021 does not describe the overall employment opportunities available to graduates of the ABIT program, especially in the arena of information technology. The number of ABIT majors demonstrate a flat trend (2008-09: 39; 2009-10: 42; 2010-11: 39, 2011-12: 37) and the number of number of new and replacement positions in the state also shows a flat trend. However, the fill rate for ABIT is at 43% and the persistence (Fall to Spring) is at 89%. The ABIT program management will monitor these indicators and take corrective actions as needed. It should be noted that with the improvement in the overall economy in Maui County there should be more opportunities for ABIT graduates to find gainful employment. However, with the improvement in the economy, there is also a dip in the overall enrollment at the UHMC.

II.   Outcome and Goal Achievement

A. Program Learning Outcomes

The program learning outcomes (PLOs) for the ABIT program is shown below in Table 2:

Table 2: ABIT PLOs

PLO1	Apply knowledge of essential business disciplines including accounting, economics, finance, law, management, and marketing, and use business research methods to analyze information in order to develop solid business plans and strategies, and make efficient business decisions.
PLO2	Use leadership and interpersonal skills to promote business ethics, values, and integrity related to professional activities and personal relationships.
PLO3	Demonstrate knowledge of operating system, word processing, spreadsheet, presentation software, database management, computer troubleshooting, web development, and e-commerce.
PLO4	Apply knowledge of graphical user interface (GUI) and event-driven programming (EDP) to designing, creating, and testing computer programs.
PLO5	Apply knowledge of e-commerce by designing, creating, and testing appropriate e-commerce sites and development tools.
PLO6	Apply critical thinking skills to evaluate information, solve problems, and make decisions.
PLO7	Use information retrieval and technology.
PLO8	Apply quantitative reasoning to enhance independent or group decision-making skills.
PLO9	Communicate effectively with other utilizing appropriate forms of oral and written communication methods including multimedia presentations that apply information technologies and serve particular audiences and purposes.

Program Map and Course Alignment Grid

As documented in the ABIT Program Review of 2009-2010, the ABIT program had mapped the above nine PLOs to the outcome of one Capstone course (BUS 495). Based on the recommendation from Dr. John McKee, dated December 28, 2010, there is a UHMC requirement that "each course in the ABIT program review needs to show at what level (0-3) it supports the program learning outcomes". Following the recommendation, Table 3 displays a proposed map of 10 of the core business and information technology courses to the corresponding PLO. Note that some courses listed below (ex. FIN 311 and BUS 496) are new courses slated for start in the academic year 2012:

<p align="center">Table 3: Proposed Map of PLO and Selected Courses</p>

	ACC 300	MKT 400	BUS 320	COM 459	FIN 311	ICS 360	ICS 385	ICS 418	BUS 495	BUS 496
PLO1	3	3	3	0	3	0	0	0	3	3
PLO2	1	2	2	3	1	0	0	0	3	3
PLO3	0	0	0	0	0	3	3	3	1	3
PLO4	0	0	0	0	0	3	3	3	1	3
PLO5	0	0	0	0	0	3	3	3	1	3
PLO6	2	2	2	2	2	2	2	2	3	3
PLO7	1	1	1	1	1	3	3	3	1	3
PLO8	2	2	2	1	2	2	2	2	3	3
PLO9	2	2	2	3	2	2	2	2	3	3

Assessment Plan: Time Table

The recommendation from Dr. John McKee, dated December 28, 2010, noted that there is a UHMC requirement that "each PLO needs to be assessed twice during a five-year review cycle". Following the recommendation, Table 4 displays a proposed assessment plan of the 9 PLOs at least twice during the next five years starting 2012-2013. Note that some courses listed below (ex. FIN 311 and BUS 496) are new courses that started in the year 2011-2012. Also, the new capstone courses, BUS 495 and BUS 496, will be used to assess all nine PLOs in every year:

<p align="center">Table 4: ABIT Assessment Plan: Time Table</p>

Years	ACC 300	MKT 400	BUS 320	COM 459	FIN 311	ICS 360	ICS 385	ICS 418	BUS 495	BUS 496
FA 12		PLO 1						PLO 4	PLO 1-2, 8-9	
SP 13				PLO 2	PLO 1		PLO 5			PLO 3-7
FA 13	PLO 8							PLO 7	PLO 1-2, 8-9	
SP 14			PLO 6			PLO 3	PLO 9			PLO 3-7

FA 14		PLO 1						PLO 7	PLO 1-2, 8-9	
SP 15					PLO 1		PLO 9			PLO 3-7
FA 15	PLO 8								PLO 1-2, 8-9	
SP 16			PLO 2							PLO 3-7
FA 16								PLO 4		
SP 17			PLO 6			PLO 3	PLO 5		PLO 1-9	

B. Analysis of Student Outcome and Goal Achievement

PLOs being assessed

In the year 2011-2012, all nine PLOs of the ABIT program were assessed by the learning outcome of one capstone ABIT course (BUS 495) conducted in the spring of 2012. Other information technology courses used to assess PLOs included ICS 360 (PLO #3), ICS 385 (PLO #5) and ICS 418 (PLO #4). In addition, one accounting course (ACC 300) was used to assess three PLOs (PLO #1, PLO #6 and PLO #8).

Assessment tools or methods used

The ABIT capstone course, BUS 495, was the only course used to collect assessment data of all the ABIT PLOs. The data was collected in two stages. Stage 1 involved convening the ABIT advisory board to review the business proposals of the students in the capstone class. Stage 2 involved mentoring and guiding the students throughout the course of the semester. Stage 3 involved a final presentation by the students to the community, which included members of the ABIT advisory board, faculty, students and staff of UHMC and other attendees. The instrument used to collect assessment evidence during the final presentation involved a brief survey that was handed out to all advisory board members as well as members of the audience present. The results of the survey was tabulated and analyzed by Dr. Debasis Bhattacharya in May 2012.

Criteria for success

The ABIT program is a blended degree that provides students with a broad spectrum of learning opportunities. The criteria for success are graduation from the program with competencies and skills that span the entire gamut of Program Learning Outcomes. As a result of this mix of criteria, the following level of achievement is desired (scale of 1 to 5, where a score of 2 or below indicates marginal competency, 3 indicates average competency and 4 and 5 indicates good and exceptional competencies).

- PLO1 – Knowledge of Business (Minimum score of 4 or above)
- PLO 3, 4, 5, and 7 – Knowledge if IT (Minimum score of 4 or above)
- PLO 2, 6, 8 and 9 – Humanities, Soft Skills (Minimum score of 3 or above)

Summative Evidence

During the year 2011-2012, the evidence collected to assess the PLOs are displayed in Table 4. The evidence was collected by the results of a survey conducted during the final presentation of the capstone course BUS 495 in April 2011. Table 5 displays the best match between the survey questions and the corresponding PLO.

Table 5: Assessment Evidence

Question from Capstone Survey and Corresponding PLO (in italics)	Survey Results
1. Demonstration of need? 2. Need being satisfied? 3. Current Solutions? 4. Describe Product/Services? 5. Consumer group size? 6. Financial information? 7. Tech Design/Demo *PLO1*	Team Wedding – 3.43 out of 5 Team Disaster – 3.14 out of 5
1. Knowledge of business? 2. Leadership skills? 3. Knowledge of IT systems? 4. Knowledge of UI design? 5. Knowledge of e-commerce? 6. Critical thinking skills? 7. Use of Info Retrieval? 8. Quantitative Reasoning? 9. Overall Communication? *PLO2 – PLO 8*	Team Wedding – 3.88 out of 5 Team Disaster – 3.25 out of 5

Table 6 provides an overall assessment of the rankings scored by the ABIT students in their final presentation, based on input from the ABIT Advisory Board in April 2011.

Table 6: Assessment for BUS 495 in Spring Semester 2012

Program Assessment Rubric for ABIT Course BUS 495 for YEAR 2012				
	Exceeds (>4)	Meets (3.5 – 4)	Needs Improvement (3-4)	No Proficiency (<3)
Program Learning Outcome				
PLO1 – Apply knowledge of business			X (Avg = 3.29)	

PLO2 – Leadership skills			X (Avg = 3.57, same for PLOs 3-9)	
PLO3 – Demo knowledge of technology and systems			x	
PLO4 – Apply knowledge of GUI			x	
PLO5 – Apply knowledge of e-commerce			x	
PLO6 – Apply critical thinking skills			x	
PLO7 – Use information tech and retrieval			x	
PLO8 – Apply Quantitative reasoning			x	
PLO9 – Communicate effectively			x	

Table 7 provides an overall assessment of the rankings scored by the ABIT students in Accounting 300 (ACC 300) course, recorded by Refugio Gonzalez in the fall of 2011.

Table 7: Assessment for ACC 300 in Fall Semester 2011

Program Assessment Rubric for ABIT Course BUS 495 for YEAR 2012				
	Exceeds (>4)	**Meets (3.5 – 4)**	**Needs Improvement (3-4)**	**No Proficiency (<3)**
Program Learning Outcome				
PLO1 – Apply knowledge of business	12 students out of 15 (88%)	2 out of 14 (14%	1 out of 14 (7%)	n/a
PLO6 – Apply critical thinking skills	4.5 students out of 14.5 (32%)	7 out of 14.5 (50%)	2 out of 14.5 (14%)	1 out of 14.5 (7%)
PLO8 – Apply Quantitative reasoning	9 students out of 16 (62%)	3 students out of 16 (21%)	3 students out of 16 (18%)	1 student out of 16 (5%)

What we discovered about student learning

The results of this program review are based on the quantitative feedback from two courses, as well as the subjective feedback from other courses in the ABIT program. Key points:

- The final capstone presentation lacked depth in technology and business practices

- The students who presented in May 2012 lacked conviction in their business passion
- The choice of social entrepreneurship was a novel addition to the ABIT program

Given that the ABIT program blends business and information technology, here are other points:

- Students learned a blend of skills covering marketing, finance, accounting, information technology, economics and other general education courses. Example: The capstone student projects involved social entrepreneurship which involved new financial metrics
- Students learned soft skills that included the following: business research, critical thinking, research writing, team collaboration, team and individual presentations. Example: The Wedding project involved research into the Maui wedding industry
- Students valued a rigorous curriculum when there was relevance to a real life scenario. Example: External learning team project complemented theories learned in the class.
- Students valued internships and job placements opportunities that provided them with career opportunities and options with local firms and organizations. Example: ABIT worked the staff in CareerLink to place students in local internships and projects.
- Students valued the inclusion of advisory board members during their capstone project. Example: The diverse experience of the board members provided valuable guidance.

C. Action Plan

Changes made in ABIT curriculum to improve student learning

Several changes were made in the fall of 2011 to improve student learning. These include:

- Starting fall semester of 2012, he ABIT capstone course has been proposed to be split into two courses, ABIT 495 and ABIT 496. This split will allow students to finalize their business plan in the first fall semester, followed by supporting technology and presentation plan in the second spring semester
- To reflect the skills and experience of the new ABIT faculty, Refugio Gonzalez, two new upper division courses have been included in the ABIT curriculum. BUS 310 covers decision analysis using statistics and FIN 311 covers introductory financial investments.
- Several upper division courses in information technology and business now require a pre-requisite of math calculus. As a result, a course in business calculus has been approved as part of the ABIT curriculum as a mandatory pre-requisite to upper division ICS courses.
- The senior year course in Marketing, MKT 400, is upgraded to include digital marketing
- A mandatory requirement requires the inclusion of an internship prior to graduation

Assessment Support for Current and Future Goals

- Given that no rubric was used in the 2009-2010 review period, there is limited historical data for the ABIT program prior to 2010. However, since the program review for 2010-201l, detailed assessment data was collected on the basis of the capstone course. The advisory board was present and active during the entire capstone course, and was aware of the student learning outcomes that were generated as a result of that capstone course. An active assessment program is now in place to capture the assessment of other courses in the ABIT program, as in Table 3.

Program strengths and challenges

Given that the ABIT program is now past its sixth year in existence, here are five strengths:

- The ABIT program blends business and technology disciplines into a unique BAS degree
- Students in the ABIT program are prepared for careers as business entrepreneurs, as well as careers in high technology. Students often enroll in graduate school to pursue advanced degrees. This variety in careers is primarily due to the blended curriculum
- Students value the opportunity to work on internship opportunities with local firms
- Students can avail of merit scholarships and a dedicated ABIT classroom
- Students can obtain mentoring and guidance from the ABIT advisory board

As in any other program, the ABIT program also faces specific issues and challenges:

- The existing deficiency in math preparation in calculus, which has been changed in 2012, hinders students from gaining the depth of knowledge in several IT courses
- Many students fail to take ABIT courses in the recommended sequence. Since many courses are offered only once a year, this results in an overall delay in graduation
- The number of graduating students in flat over the past two years, and the enrollment numbers do not indicate an upward trend in graduation rates during the years 2013-2016
- The inability to offer the entire ABIT program as a distance learning program prevents many students who reside outside Maui County to enroll and complete the ABIT program

III. Engaged Community

Evidence that results of student learning was discussed with Advisory Board

- The capstone course BUS495, taught in the spring semester of 2011 was monitored by several members of the ABIT advisory board. These advisors were present from the initial presentation in February 2012 through the final presentation in April 2012. Several advisors, such as Jamie Dinkelacker, Virendra Nath, Tim Georges, Mark Ausbeck Grant Chun and David Kashiwamura provided personalized advisory services to the ABIT students during the entire semester.

IV. Recognize and Support Best Practices

Planned curriculum changes to support innovation and best practices

The ABIT program has implemented significant changes in the UHMC curriculum in terms of the four year program map, as well as the introduction of key upper level courses in decision analysis and finance. The following points highlight the new and approved changes:

- Starting 2012-2013 onwards, the ABIT program will be one contiguous four year program. The first two years of instruction will mirror the new Business Career III option
- The ABIT program map starting 2012-2013 involves several changes to business and management course. Key new courses include BUS 310 (Decision Analysis) and FIN 311 (Investments). The ABIT capstone will be a two semester sequences (BUS 495 and 496).

- Due to the requirement of calculus in several upper division courses, MATH 203 or 205 is now required as a pre-requisite to upper division ICS courses as well business courses.
- The course on Marketing (MKT 400) has been upgraded to reflect modern technology and marketing methods using online technology, social media and emerging models.
- A mandatory internship project is now required for all ABIT students prior to graduation
- The courses during the first two years of the ABIT program map to the existing courses in the Business Careers Option III. Students can opt out of ABIT and receive a degree in Business Careers, or can join ABIT after completing an AAS in Business Careers III.

V. Planning and Policy Considerations

Specific Goals for 2011-2012 and beyond

Given this new four year structure, the specific goals for 2012-2013 and beyond include:

- The ABIT program will use the Assessment Map and Assessment Plan, as noted above in Table 2 and 3, to assess all nine PLOs, at least two times in five years
- The two new ABIT capstone courses, BUS 495 and BUS 496, will assess all nine ABIT PLOs every year. The idea is to ensure that the two capstone courses cover all PLOs and that students demonstrate all PLOs in a convincing fashion at the end of the program
- The evaluation survey used in the capstone courses will match all PLOs
- In addition to the assessment feedback provided by the ABIT capstone course, two or more additional courses will be selected for assessment every year for the next five years
- For each course slated for assessment, the SLOs in the course will be evaluated based on the actual performance of students in the corresponding assignments or project activities
- An assessment rubric will be used for all courses that are included in the assessment map
- The end-of-course capstone evaluation, along with other assignments during the two capstone courses, will allow the ABIT program to assess all nine PLOs every year
- The ABIT advisory committee will review the assessment data every six months, and provide feedback to the ABIT faculty on program modification and curriculum updates
- Coordinated marketing and recruitments activities with CareerLink to increase enrollment levels in the ABIT program, and to retain existing students in the program
- Increased outreach activities to local Maui County high schools to increase awareness and interest in the new four year ABIT program. This includes Lanai and Molokai
- Active consideration of updating all upper division ABIT courses to a distance learning modality. This could include hybrid classes, proctored exams, and live class streaming

VI. Budgetary Consideration and Impact

For the next academic year, the following items are requested to be included in the budget:

- Software licenses for ABIT students: $100/student, for 50 licenses or $5000
- Upgrades to current computer equipment: $10,000
- Subscriptions to business journals, online databases and other sources: $10,000
- Purchase of new computer equipment for classroom instruction: $5,000
- Travel within the state of Hawaii for recruitment and marketing: $5,000
- Office supplies, marketing costs and other materials: $10,000