

1. Curriculum Action

New Course Course Modification Five Year Review

2. Proposer

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3. Department

Allied Health Business & Hospitality Career & Tech Education
 English Humanities Social Science
 Science/Tech/Eng/Math

4. Course Alpha

ICS

5. Course Number

360

6. Course Title

Database Design-Devl

7. If this is a course modification or a five year review, please check the curriculum items being modified.

1. Course Alpha 2. Course Number 3. Course Title
 4. Credits 5. Contact Hours 6. Course Description
 7. Prerequisites 8. Corequisites 9. Rec Prep
 10. Cross-list w other course 13. Grading Method 14. Repeatable for credit?
 15. SLOs 16. Course Competencies 17. Content & Timeline
 18. PLOs 19. CASLOs 21. Method of Delivery
 22. Text and Materials 23. Maximum Enrollment 29. Course Designation
 31. Catalog Modification
 Other

8. Proposed Semester

Fall 2015

9. Effective Semester (1 Year from Proposed Semester)

Fall 2016

University of Hawaii Maui College
ICS 360 - Database Design and Development

1. Course Alpha.

ICS

2. Course Number.

360

3. Course Title/Catalog Title.

Database Design and Development

4. Number of Credits.

3

5. Contact Hours/Type.

- Hour lecture (3)

6. Course Description.

Provides detailed knowledge of database design and development. Explains data models: relational and object oriented. Examines relational database management systems. Demonstrates database design and development using SQL. Explains client/server systems and web access to databases.

7. Pre-Requisites.

ICS 320 with a grade C or better, or consent.

8. Co-requisites.

None

9. Recommended Preparation.

None

10. Is this a cross-listed course?

NO

11. Reason for Proposal. Why is this course being proposed or modified? This question requires specific information as part of the explanation.

ICS 360 or Database Development and Admin now focuses on only ICS 320 (Intro to Information Systems and E-Commerce) as the pre-requisite. This simplifies the pathway for students and allows students to transfer into upper division ABIT program from a variety of lower division disciplines.

12. Effective Semester and Year.

Fall 2016

13. Grading Method. What grading methods may be used for this course?

- Standard (Letter,Cr/NCr,Audit) (0)

14. Is this course repeatable for credit? How often can this course be counted toward a degree or certificate?

NO

15. Course Student Learning Outcomes (SLOs).

Competency/Course SLO	Apply critical thinking skills to evaluate information, solve problems, and make decisions	Apply quantitative reasoning to enhance independent or group decision-making skills	Utilize technological tools to conduct business-related research	Demonstrate knowledge of databases
Analyze the types of database management systems and basic file management	<input checked="" type="checkbox"/>			
Analyze physical data storage and file organization techniques	<input checked="" type="checkbox"/>			
Explain conceptual data model - ERD, OO model and specific modeling grammars	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Explain logical data model - hierarchical, network and relational data model	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Explain physical data model, with indexing and data types	<input checked="" type="checkbox"/>			
Analyze database languages such as SQL: DDL, DML and DCL		<input checked="" type="checkbox"/>		
Explain data and database administration and transaction processing		<input checked="" type="checkbox"/>		
Analyze the use of databases in application development and IT enterprises		<input checked="" type="checkbox"/>		
Explain data and information architecture			<input checked="" type="checkbox"/>	
Demonstrate data security management - principles and implementation			<input checked="" type="checkbox"/>	
Demonstrate data quality management - principles and implementation			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Explain business intelligence - OLAP, Data Warehousing and Data Mining				<input checked="" type="checkbox"/>
Explain the principles, use and technology behind enterprise search				<input checked="" type="checkbox"/>

Course SLO/PSLO	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.	Demonstrate knowledge of operating system, word processing, spreadsheet, presentation software, database management, computer troubleshooting, web development, and e-commerce.	Apply critical thinking skills to evaluate information, solve problems, and make decisions.	Use information retrieval and technology.	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
Apply critical thinking skills to evaluate information, solve problems, and make decisions	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Apply quantitative reasoning to enhance independent or group	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

decision-making skills					
Utilize technological tools to conduct business-related research	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Demonstrate knowledge of databases	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

16. Course Competencies.

Competency
Analyze the types of database management systems and basic file management
Analyze physical data storage and file organization techniques
Explain conceptual data model - ERD, OO model and specific modeling grammars
Explain logical data model - hierarchical, network and relational data model
Explain physical data model, with indexing and data types
Analyze database languages such as SQL: DDL, DML and DCL
Explain data and database administration and transaction processing
Analyze the use of databases in application development and IT enterprises
Explain data and information architecture
Demonstrate data security management - principles and implementation
Demonstrate data quality management - principles and implementation
Explain business intelligence - OLAP, Data Warehousing and Data Mining
Explain the principles, use and technology behind enterprise search

17. Recommended Course Content and Timeline. The course content facilitates the course competencies. Course content may be organized by weeks, units, topics or the like.

Content
1. Core concepts in database design - 5 weeks (SLO I-IV; Competency a-e)
2. Core concepts in database development - 6 weeks (SLO I-IV; Competency f-i)
3. Concepts in data security, quality, BI and search - 5 weeks (SLO I-IV; Competency j-m)

18. Program Learning Outcomes.

Program SLO
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.
Demonstrate knowledge of operating system, word processing, spreadsheet, presentation software, database management, computer troubleshooting, web development, and e-commerce.
Apply critical thinking skills to evaluate information, solve problems, and make decisions.
Use information retrieval and technology.
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

19. College-wide Academic Student Learning Outcomes (CASLOs).

<input checked="" type="checkbox"/>	Creativity - Able to express originality through a variety of forms. <input checked="" type="checkbox"/> Level 1
<input checked="" type="checkbox"/>	Critical Thinking - Apply critical thinking skills to effectively address the challenges and solve problems. <input checked="" type="checkbox"/> Level 2
<input checked="" type="checkbox"/>	Information Retrieval and Technology - Access, evaluate, and utilize information effectively, ethically, and responsibly. <input checked="" type="checkbox"/> Level 2
<input checked="" type="checkbox"/>	Oral Communication - Practice ethical and responsible oral communications appropriately to a variety of audiences and

	purposes. <input checked="" type="checkbox"/> Level 1
<input checked="" type="checkbox"/>	Quantitative Reasoning - Synthesize and articulate information using appropriate mathematical methods to solve problems of quantitative reasoning accurately and appropriately. <input checked="" type="checkbox"/> Level 2
<input checked="" type="checkbox"/>	Written Communication - Write effectively to convey ideas that meet the needs of specific audiences and purposes. <input checked="" type="checkbox"/> Level 1

20. Linking.

21. Method(s) of delivery appropriate for this course.

- Cable TV (0)
- Classroom/Lab (0)
- HITS/Interactive TV (0)
- Hybrid (0)
- Online (0)

22. Text and Materials, Reference Materials, and Auxiliary Materials.

Appropriate text(s) and materials will be chosen at the time the course is offered from those currently available in the field. Examples include: Database Systems by Ullman et. al., latest edition

Appropriate reference materials will be chosen at the time the course is offered from those currently available in the field. Examples include: Internet references on modern database systems. Appropriate auxiliary materials will be chosen at the time the course is offered from those currently available in the field. Examples include: Internet tutorials on modern database systems

23. Maximum enrollment.

35

24. Particular room type requirement. Is this course restricted to particular room type?

NO

25. Special scheduling considerations. Are there special scheduling considerations for this course?

NO

26. Are special or additional resources needed for this course?

No

27. Does this course require special fees to be paid for by students?

NO

28. Does this course change the number of required credit hours in a degree or certificate?

No

29. Course designation(s) for the Liberal Arts A.A. degree and/or for the college's other associate degrees.

Degree	Program	Category
Associate in Arts:	Liberal Arts	LE - Elective
AS:	N/A	
AAS:	N/A	
BAS:	ABIT	IC - ABIT Information Technology Core
Developmental/Remedial:	N/A	

30. Course designation(s) for other colleges in the UH system.

ICS 360 is an existing course in the ABIT program that covers database application design. The modification to this course provides ABIT students with advance knowledge of database design as well as database development. This course is equivalent to UH Hilo's CS 421 and UH Manoa's ICS 421.

31. Indicate the year and page # of UHMC catalog referred to. For new or modified courses, please indicate the catalog pages that need to be modified and provide a sheet outlining those changes.

UHMC Catalog 2015-2016 needs to be updated in the course description for ICS 360 on page 128

32. College-wide Academic Student Learner Outcomes (CASLOs).

Standard 1 - Written Communication Write effectively to convey ideas that meet the needs of specific audiences and purposes.	
Outcome 1.1 - Use writing to discover and articulate ideas.	2
Outcome 1.2 - Identify and analyze the audience and purpose for any intended communication.	1
Outcome 1.3 - Choose language, style, and organization appropriate to particular purposes and audiences.	1
Outcome 1.4 - Gather information and document sources appropriately.	2
Outcome 1.5 - Express a main idea as a thesis, hypothesis, or other appropriate statement.	2
Outcome 1.6 - Develop a main idea clearly and concisely with appropriate content.	2
Outcome 1.7 - Demonstrate a mastery of the conventions of writing, including grammar, spelling, and mechanics.	1
Outcome 1.8 - Demonstrate proficiency in revision and editing.	1
Outcome 1.9 - Develop a personal voice in written communication.	1
Standard 2 - Quantitative Reasoning Synthesize and articulate information using appropriate mathematical methods to solve problems of quantitative reasoning accurately and appropriately.	
Outcome 2.1 - Apply numeric, graphic, and symbolic skills and other forms of quantitative reasoning accurately and appropriately.	2
Outcome 2.2 - Demonstrate mastery of mathematical concepts, skills, and applications, using technology when appropriate.	3
Outcome 2.3 - Communicate clearly and concisely the methods and results of quantitative problem solving.	3
Outcome 2.4 - Formulate and test hypotheses using numerical experimentation.	2
Outcome 2.5 - Define quantitative issues and problems, gather relevant information, analyze that information, and present results.	2
Outcome 2.6 - Assess the validity of statistical conclusions.	2
Standard 3 - Information Retrieval and Technology. Access, evaluate, and utilize information effectively, ethically, and responsibly.	
Outcome 3.1 - Use print and electronic information technology ethically and responsibly.	2
Outcome 3.2 - Demonstrate knowledge of basic vocabulary, concepts, and operations of information retrieval and technology.	2
Outcome 3.3 - Recognize, identify, and define an information need.	3
Outcome 3.4 - Access and retrieve information through print and electronic media, evaluating the accuracy and authenticity of that information.	3
Outcome 3.5 - Create, manage, organize, and communicate information through electronic media.	2

Outcome 3.6 - Recognize changing technologies and make informed choices about their appropriateness and use.	3
Standard 4 - Oral Communication	
Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.	
Outcome 4.1 - Identify and analyze the audience and purpose of any intended communication.	2
Outcome 4.2 - Gather, evaluate, select, and organize information for the communication.	2
Outcome 4.3 - Use language, techniques, and strategies appropriate to the audience and occasion.	2
Outcome 4.4 - Speak clearly and confidently, using the voice, volume, tone, and articulation appropriate to the audience and occasion.	2
Outcome 4.5 - Summarize, analyze, and evaluate oral communications and ask coherent questions as needed.	2
Outcome 4.6 - Use competent oral expression to initiate and sustain discussions.	2
Standard 5 - Critical Thinking	
Apply critical thinking skills to effectively address the challenges and solve problems.	
Outcome 5.1 - Identify and state problems, issues, arguments, and questions contained in a body of information.	3
Outcome 5.2 - Identify and analyze assumptions and underlying points of view relating to an issue or problem.	3
Outcome 5.3 - Formulate research questions that require descriptive and explanatory analyses.	3
Outcome 5.4 - Recognize and understand multiple modes of inquiry, including investigative methods based on observation and analysis.	3
Outcome 5.5 - Evaluate a problem, distinguishing between relevant and irrelevant facts, opinions, assumptions, issues, values, and biases through the use of appropriate evidence.	3
Outcome 5.6 - Apply problem-solving techniques and skills, including the rules of logic and logical sequence.	3
Outcome 5.7 - Synthesize information from various sources, drawing appropriate conclusions.	3
Outcome 5.8 - Communicate clearly and concisely the methods and results of logical reasoning.	3
Outcome 5.9 - Reflect upon and evaluate their thought processes, value system, and world views in comparison to those of others.	3
Standard 6 - Creativity	
Able to express originality through a variety of forms.	
Outcome 6.1: Generate responses to problems and challenges through intuition and non-linear thinking.	2
Outcome 6.2: Explore diverse approaches to solving a problem or addressing a challenge.	1
Outcome 6.3: Sustain engagement in activities without a preconceived purpose.	2
Outcome 6.4: Apply creative principles to discover and express new ideas.	1
Outcome 6.5: Demonstrate the ability to trust and follow one's instincts in the absence of external direction	1
Outcome 6.6: Build upon or adapt the ideas of others to create novel expressions or new solutions.	2

33. Additional Information