

# Leeward Community College

## Math Study Skills

**1. Course Alpha**

MATH

**2. Course Number**

16

**3. Number of Credits**

1

**4. Effective Term**

Fall 2011

**5. Course Title**

Math Study Skills

**6. Catalog Title**

Math Study Skills

**7. Prerequisites**

None

**8. Corequisites**

None

**9. Recommended preparation**

None

**10. Catalog Description**

Students in MATH 16 study and apply essential study skills needed to succeed in mathematics and other mathematics-related courses. Techniques to reduce math and test anxiety, note-taking skills, time management, study techniques, and math test-taking skills are emphasized. This course is recommended for students taking their first developmental math course.

**11. What are the general student learning outcomes? (What knowledge and/or skills will successful completion develop in the students?)**

Upon successful completion, MATH 16 students should be able to...

| Course SLO  |
|---|
| Evaluate their learning style and methods to capitalize on their strengths when learning mathematics. |
| Develop methods to improve on their ability to learn mathematics.                                     |
| Utilize techniques to reduce or overcome math anxiety.  |
| Apply organizational skills and appropriate study habits.   |
| Identify successful test-taking strategies.   |

## 12. Course Content

**What evidence exists that the course content is appropriate, relevant, and covered in sufficient depth? (addresses breadth, depth, relevancy) What evidence exists that the course reflects current theory and practice in the content area? (addresses currency)**

Recent discussions among faculty committees across the University of Hawaii System have motivated the creation of MATH 16. This course advances the current campus and system developmental education goals. MATH 16 supports the SLO of recognizing and practicing sound math study skills included in all Leeward CC developmental math courses. The course will use contemporary materials shown to effectively improve student success rates.

| Content   |
|---|
| Learning Styles                                     |
| Math anxiety and methods to reduce or overcome it   |
| Time management skills                              |
| Organizational skills                               |
| How to effectively read a mathematics textbook      |
| Note-taking techniques                              |
| Study Strategies, including memorization techniques |
| Test-taking skills                                  |

## 13. How is this course related to the educational needs and goals of the division, college, and community as reflected in the Strategic Plan? How is it related to courses and programs in other disciplines?

Students in MATH 16 will develop the necessary skills and attitude to succeed in mathematics courses. As such, MATH 16 addresses the following:

Outcome 1.3 (and 2.3) of the System Strategic Plan Update 2008-2015: Increase the number and percent of (Native Hawaiian) students enrolled in developmental intervention that successfully complete at least one course in the developmental sequence within their first academic year thus making progress towards degree applicable instruction.

Outcome 1.4 (and 2.3) of the System Strategic Plan: Increase by 3% (6-9%) per year the number of (Native Hawaiian) students who successfully progress and graduate, or transfer to baccalaureate institutions, while maintaining the percentage of transfers who achieve a first year GPA of 2.0 or higher at the transfer institution.

- 14. For what program was the course designed? Is it an approved program? Will the course be required or elective? Will the course lengthen the time for the students to complete the program? Will it replace another course?**

MATH 16 is not designed for a specific program; however it will accompany the remedial/developmental math sequence. It will be required for MATH 9 students, and recommended for other developmental mathematics students.

MATH 16 will not lengthen the time for students to complete a degree since it will be taken concurrently with the proposed MATH 9, which will replace the existing MATH 1B. MATH 9 and MATH 16 are each one credit whereas MATH 1B is three credits. With their flexible scheduling options, completion of these two courses will take less than or the same amount of time as the current MATH 1B.

- 15. How many hours will the students spend per week in lectures, laboratories, seminars, or other supervised instruction?**

Students will be expected to spend the equivalent of 1 hour per week in class. For example, MATH 16 could be scheduled to meet for one hour per week for the entire semester, or for 3 hours per week for five weeks.

- 16. What independent work will be required of students? (Reading, research, writing, special projects, etc.) For written or other special projects, identify the usual number and length of projects. For readings, where the entire book or pamphlet is not used, indicate the portion of the material to be used.**

Students will be expected to complete textbook and/or computerized homework and prepare and submit other assignments, which could include quizzes or written reports with typical lengths of one to five pages.

- 17. What experiential or professional preparation is required to teach this course? Do we have a full-time faculty member who meets these requirements? If not, who will teach the course?**

There are no specialized preparations beyond meeting the minimum qualifications for an instructor in developmental mathematics. By University of Hawaii Community College system-wide agreement of academic Deans, the current minimum qualification required is any one of the following:

- Master's degree in mathematics
- Master's degree in education with a bachelor's degree in mathematics
- Master's degree in math education

All full-time mathematics discipline faculty members are able to teach this course.

- 18. Is a similar course taught at any other community college? Any other UH college? If so, provide information about the course identification and content of similar courses. If this course differs in**

**important ways from existing similar courses, explain how.**

Yes. Maui College offers MATH 16: Math Study Skills with the following SLOs:

- Evaluate their learning styles
- Identify their math-learning strengths and weaknesses
- Develop methods to improve their ability to learn mathematics
- Translate math symbols into words and phrases
- Develop skills that will create success in mathematics
- Develop the responsibility for taking control over learning mathematics
- Develop and apply skills necessary to successfully complete math courses
- Understand and work with math anxiety

**19. If this course is comparable to a course taught on a four-year campus, and is intended to count in lieu of that course, the proposal must contain evidence of up-to-date information as to the content and objectives of the course on the four-year campus. (This information may be obtained through discussion with faculty teaching the course on the four-year campus or by obtaining a copy of the course syllabus or outline.)**

**20. If the course is appropriate for articulation with the UH Manoa general education core or with any other department or college requirements on a UH four-year campus, provide a brief rationale.**

NA

#### **21. Methods of instruction**

- Class Discussion
- Demonstrations
- Hands-on learning
- Lectures
- Portfolios
- Student participation

#### **22. Methods of Evaluation**

- Attendance
- Participation
- Portfolio(s)
- Exam
- Reflection Paper(s)
- Take home assignments

| Method of Evaluation |
|----------------------|
| Attendance           |
| Exam                 |
| Participation        |
| Portfolio(s)         |
| Reflection Paper(s)  |

**23. Is Textbook Required**

An appropriate textbook will be required by the instructor.

**24. Exclude from Catalog**

NO

**25. Justify the level of proposed course:**

**What evidence exists that the course appropriately covers areas with sufficient emphasis for a remedial, a developmental, or a college-level course? (addresses rigor)**

MATH 16 will support remedial/developmental mathematics students in their current and future mathematics courses. MATH 16 builds necessary skills to overcome the difficulties typically encountered by developmental mathematics students.

**26. Will this course require additional staff, equipment, facilities, or other cost items? If so, are they available? Are they included in the budget, or will they be covered by reallocation?**

NO

**27. Expectations for Student Participation. Students are expected to spend at least two hours outside of class for every hour in class by means of the following activities:**

- Homework Assignments
- Journal Writing
- Reading Assigned Text(s)

**28. What change is proposed in the course? (Provide specific information on both the new and the old course.)**

NA

**29. What is the rationale for the change?**

NA

**30. Is the change substantive enough to require a change in course identification? If so, explain in detail.**

NA

31. Is the course currently articulated with any four-year program? If so, give details and dates of agreement(s) and explain any impact the proposed change may have upon articulation.

No

32. Will the change require additional staff, equipment, facilities or other resources? If so, provide details and indicate whether they are available.

No

33. Will this change increase or decrease the number of required hours for attainment of a certificate or a degree? If so, provide details and justification.

MATH 16 will not lengthen the time for students to complete a degree since it will be taken concurrently with the proposed MATH 9, which will replace the existing MATH 1B. MATH 9 and MATH 16 are each one credit whereas MATH 1B is three credits. With their flexible scheduling options, completion of these two courses will take less than or the same amount of time as the current MATH 1B.

34. Distance Education

- a) what methods will be employed to ensure timely and effective interaction between faculty and students and student to student?
- b) What technological skills will students need to succeed in this course?
- c) How will the instructor execute and ensure the rigor and breadth of the course through electronic delivery?

Though not strictly a distance course, MATH 16 may be offered using a model similar to a distance course.

Students will be required to attend on-campus class sessions that will allow the instructor to provide feedback on student portfolios, have student presentations, or group projects. Email and Laulima will be utilized extensively to ensure timely and effective communication between faculty and students.

No specialized skills beyond email and internet access and familiarity with these is needed in order to succeed in this course.

Rigor and breadth are executed and ensured by the careful selection and creation of course content and materials.

35. Distance Education

What type of academic support and technology training will be required to ensure pedagogical development of the instructor for this course?

No additional training will be necessary for this course. All Leeward CC developmental/remedial mathematics instructors are qualified to teach MATH 16.

36. Distance Education

How will specific technology be integrated into the course, and how will its use be appropriate to the nature and objectives of the course?

Lectures will be available through Laulima and/or cable broadcasts. E-mail and Laulima tools will be utilized for instructor-student as well as student-student communications.

37. Course Curricular Function: (Please explain the function of this course as it relates to the College

Mission and the achievement of relevant degree and certificate program requirements.)

mission and the achievement of relevant degree and certificate program requirements.)

MATH 16 relates to the "Learning and Teaching" statements in the Leeward CC Mission: To specialize in the effective teaching of remedial/developmental education, general education, and other introductory liberal arts, pre-professional, and selected baccalaureate courses and programs, with the goal of seamless system articulation and transfer, where appropriate. To structure our programs in such a way that they reflect not only academic rigor but also student development, learning outcomes and student goals.

MATH 16 is not designed for a specific program or certificate but will accompany the remedial/developmental mathematics sequence.

**38. What evidence exists that the course is taught so that skills are built on what has been learned earlier in the course (or in a previous course) and will lead to what will be learned in a future course?**

Students in MATH 16 will essentially develop an individualized tool kit of techniques to help them succeed in mathematics and math-related courses. They will identify their personal learning style, strengths, and areas in need of improvement and then incorporate this into the remainder of the course. MATH 16 students will practice the skills vital for success in future math courses.

**39. Comments**

Math and Sciences Division vote was 24 for, 0 against, and 0 abstain.

**40. Justify the need/demand for the proposed course. (Attach documentation, e.g., surveys, reports, advisory committee recommendations, etc.)**

The 2007 report "Remedial and Developmental Education in the University of Hawaii' Community College System White Paper Group Committee" and 2008-2009 Leeward CC Developmental Education Committee Initiatives both call for the introduction of study skills into developmental curriculum.

In "The Effects of Counseling and Study Skills Training on Mathematics Academic Achievement", Dr. Paul Nolting discusses several interesting discoveries from his study on math study skills. The first is that instruction in study skills and relaxation techniques can improve student performance. Students who received such instruction in a developmental mathematics course had a success rate of 66% while students in the control group, who were instructed only in math, had a 33% success rate. Clearly, learning about study skills and practicing anxiety-reducing relaxation techniques helped students succeed.

Nolting also discovered that general study skills instruction works well for all subjects except Mathematics and Chemistry. For Mathematics and Chemistry, subject specific study training is required. Math is unique in how it requires students to study and demonstrate their knowledge. For this reason, a math specific study skills course is necessary.

**41. If the course is renumbered to be 100 or above, how does it meet the criteria for Transfer Courses, Attachment III? An analysis as to how those criteria are met should be provided.**

NA