

## THE VISION:

- To give students an opportunity to enhance their citizenship and stewardship of earth and to society through awareness as they apply math in real and important ways
- To begin and encourage interdisciplinary dialogue
- To inspire achievement in general education mathematics through meaning and method
- To offer students a transferable course which can be applied toward many degree programs
- To update and expand offerings in Mathematics with a course which is similar to two courses offered by local universities

From [www.towson.edu](http://www.towson.edu)  
Baltimore)

(Towson University near

### **MATH 115 BASIC MATHEMATICS FOR THE SCIENCES (3)**

Intended primarily for students in biology, natural sciences, environmental studies, medical technology and nursing. Functions and equations: linear, quadratic, exponential, trigonometric. Applications of concepts and skills to the life and physical sciences are stressed. Not open to those who successfully completed MATH 119.

Prerequisites: two years of algebra or DVMT 110, and one year plane geometry.

GenEd I.C.

From [www.ship.edu](http://www.ship.edu)  
Pennsylvania)

(Shippensburg University of

### **MAT120 BASIC MATHEMATICAL MODELS**

(3 CRS.)

A projects-based course which gives students a background in collaborative problem-solving and basic quantitative modeling to complete projects and present solutions to their peers. The project topics come from several disciplines across general education. *Not open to students who have passed MAT108, MAT124, MAT181 or MAT courses above the 100 level.*

(MAT108 FINITE MATH, MAT124 PRE-CALCULUS, MAT181 APPLIED CALCULUS)

## **RATIONALE:**

1. This course could impact students' choices and decisions in the future. Consider this advertisement on **Socially Responsible Investing** and short page from *National Geographic* on **Global Warming**.
2. A **textbook** already exists for this course: *Quantitative Reasoning and the Environment: Mathematical Modeling in Context* by Langkamp & Hull. Pearson Prentice Hall, 2007.

## **EXAMPLES OF PROJECTS:**

1. Chapter 1: Measurement and Units  
Melting of the Icecaps
2. Chapter 5: Exponential Functions and Regression  
Broiler Chicken Production
3. Chapter 10: Systems of Difference Equations  
Pollution in a Chain of Lakes

## **COURSE APPROVAL PROCEDURE:**

1. Math, Science, and Allied Health Division  
Form B/335 Procedure
2. Harrisburg Area Community College
  - a. Credit Course Proposal Form B Template

## b. Form 335 Template

### MSAH FORM B/335 PROCEDURES

1. Originator completes Form B/335 and reviews for accuracy (on current form, all blocks completed, all necessary signatures obtained, etc.) Be prepared to present your course at division meeting, CI&L, and Faculty Council.  
**You should retrieve the Blank Form B/335 directly from the HACC Intranet, under College Forms, to ensure you are always using the current form.**
2. Submit course form to your section/discipline meeting for discussion and approval. Emphasis should be placed on accuracy.
3. It is the originating faculty member's responsibility to get the Catalog Editor and Library signatures prior to division meeting.
4. Submit the completed Form B/335 to the Dean's office (both paper & electronic version) **by the Tuesday before division meeting** for inclusion on the agenda.
5. Judy Blazi/Jill Weber will place electronic copy on MSAH drive in Pending folder until the course has made its way through the governance system.
6. After division approval, the dean will sign and forward the paperwork to the VP office for review. It will then be sent through the governance system.
7. When forms have gone through complete approval process, the division office will receive the stamped form back from the Records Office and will send a copy back to the Coordinator of the Program.
8. The division office will:
  - a. Enter all signatures received on the electronic copy in the MSAH drive
  - b. Send both the paper & electronic copies to the VP Office in B104 with original signatures
  - c. Retrieve electronic form from the MSAH Pending file, split the Form B from the 335 and save them into the MSAH Official folder for the B and the 335. A Security, Read Only Password will be added.
  - d. Download Form 335 to the Intranet (<http://intranet.hacc.edu/forms335/admin.php>) – or remove from Intranet if inactivated. Will file paper copy in binders.

**It is required to have a current Form B/335 on record for all active courses. Selected Topics can only run 2 times prior to being recommended for approval as a regular course (may be offered a 3<sup>rd</sup> time during the approval process). At that time, action is needed to either inactivate a Selected Topics Course or make it a regular course. Form B/335's are required to be updated every 5 years. Every effort should be made to keep course documents as current as possible. It is a faculty responsibility to guarantee that the Form B/335 reflects the current course content.**

**Only a Form 335 is required to be updated when making textbook changes. This does not require division action.**

However, we do not have an applied mathematics course with a modeling approach. We mention different types of functions, but end up spending our time on simplifying expressions and solving equations without really *developing the function concept and its significance through dynamic applications*. We are given equations of functions, but we don't really get the opportunity to see *how these functions are arrived at through regression and used for prediction*. These are the topics that will be integrated into the new course. The development of *difference equations and the concepts of equilibrium and chaos* will be completely new to these students, the prerequisite being Intermediate Algebra.