PENNSYLVANIA STATE SYSTEM OF HIGHER EDUCATION
Academic Program Review Summary Form
Board Of Governors Policy 1986-04-A
Program Name
(Academic Year(s))

Please indicate:
Annual Report [X]
Five-Year Review [ ]

University Lock Haven University **Degrees Offered** B.A.

Division/Unit Arts and Sciences **Program** Mathematics

Date of Last Major Review 04/01/2007 **Completion Date of Current Review** 06/30/2009

I. Composition of Review Team (five-year program reviews only)

Chair: Charles H. Morgan, Jr.

External Review Team Members:

Campus Review Team Members:

II. Program Data

Insert other relevant program data related to the program review in the blank rows.

	Insert Appropriate Academic Years Below				
	2004-05	2005-06	2006-07	2007-08	2008-09 (est.)
Student Enrollment (Annualized FTE)	324	319	306	314	329
Program Budget / Cost (personnel, operating, equipment)	$1,189,542	$1,334,246	$1,294,673	$1,367,555	$1,409,708
Program Cost / Student FTE	$3677	$4185	$4230	$4358	$4288
Faculty FTE	12.0	15.3	14.7	14.8	13.3
Majors Enrolled (Fall Headcount)	62	75	77	85	79
Program Graduates	3	15	12	16	13

Either reflect the portion of the department's budget (personnel, operating, and equipment) associated with this program, or reflect the Common Cost Accounting instructional costs associated with this program. [Data at www.lhup.edu/planning-and-assessment/program/data.htm.]

[Add any necessary notes or explanations here (optional).]

Accreditation Status (if any): Not applicable for this degree

Accrediting Agency: NA

Effective Date: NA

Program Context

How This Program Relates to and Supports the University's Mission and Strategic Plan

A strong background in mathematics is essential for many other majors, including physics, chemistry, engineering, computer science, etc. A sound background in mathematical statistics is essential for psychology, education, criminal justice and other majors. The level of mathematics required by these majors exceeds that which can be taught in the high schools; therefore, rigorous courses at the university-level are essential for these majors.

Furthermore, Accountingweb.com[1]—a web site used by the community of professional accountants—discusses the increased demand by the federal government for forensic accountants to investigate corporate crime and tracking of terrorist activity. This field uses statistics extensively.

External or Environmental Factors Affecting the Program

None known

Demand for This Program and its Graduates (Current and Anticipated)

According to the *Occupational Outlook Handbook* [*OOH*] (2008-2009 edition)[2], employment of mathematicians is expected to increase by ten (10) percent during the 2006-2016 decade. According to *OOH*, "advancements in technology usually lead to expanding applications of mathematics, and more workers with knowledge of mathematics will be required in the future." Persons with degrees in mathematics work in theoretical (research) mathematics, computer science, engineering, software development, physics, operations research, etc.

Median annual income for mathematicians was $86,930 in May, 2006; however, the 90th percentile salary for mathematicians was $132,190. Federal government mathematicians earned a mean salary of $96,121.

III. Progress Since Last Review

This should be a brief status report of principal actions taken since the last review, if applicable.

Student Learning Outcomes

Action Item	Steps Taken/Progress Reported	Date
Improve student assessment	Redefined student learning outcomes assessment items using NCATE standards as model	Nov 2008
Improve student assessment	Increased number of faculty collecting and submitting assessment data	Mar 2008

Other Program Outcomes

Action Item	Steps Taken/Progress Reported	Date
Increase public awareness of B.A. program at LHU	Mathematics competition for high school seniors hosted on April 21; five schools participated	Apr 2009

[1] D. D. Dorrell, "Feds turn to forensic accounting." See http://www.accountingweb.com.
[2] See http://www.bls.gov/oco/ocos043.htm.

Increase enrollment and graduation rates in B.A. program	Nine (9) new B.A. Math majors are starting in Fall 2009. This is an unprecedented number of new majors.	Continuing
Increase faculty and student scholarship	More publications by faculty; seminar series continued; one sabbatical and one Alternative Workload Leave granted for faculty research projects; more invited talks delivered by faculty	Continuing

IV. Outcomes Assessment (PASSHE Board of Governors Policy 1997-01)

Student Learning Outcomes (list goals and outcomes)

See attached Learning Outcomes Assessment Worksheets.

Program Outcomes (list goals and outcomes)

See attached Program Outcomes Assessment Worksheets.

V. Strengths

Student Learning

- Students who engage in Independent Study projects with faculty develop deep understanding of mathematical content necessary for advanced degrees. Five recent graduates are currently in graduate school in mathematics or have recently completed master's degrees in mathematics. Other recent program graduates have presented work of their independent study projects at the Moravian Mathematics Conference.
- Greater proportion of graduates attending graduate programs in mathematics.

Other Program Areas

- Faculty members in the program have publications in scholarly, peer-reviewed journals; i.e., Aslam, Mikula, Maynard, Morgan.
- Faculty members have been granted sabbatical or alternative workload leave to pursue scholarly research; i.e., D. Burkett and Morgan.
- Faculty member has published a new book; i.e., Strayer.
- Faculty members have given presentations at conferences attended by outside faculty; i.e., Rehn, Maynard, Mikula, Aslam, Pile, Morgan.

VI. Areas in Need of Improvement

Student Learning

- Increase student participation in seminars, mathematics conferences, and advanced independent study projects.

Other Program Areas

VII. Action Plan

Student Learning Outcomes

Goals	Action Plan	Steps To Be Taken	Date
Enhance student content knowledge	Increase student participation in seminars, conferences, and advanced independent study projects	Encourage faculty to devise advanced independent study projects and recruit majors to participate	Dec 2009
Enhance student ability to think creatively and independently in mathematics	Increase participation in internships and summer programs for mathematics majors	Encourage faculty to contact former classmates and colleagues now in industry or at other universities with REU or other summer research programs	Dec 2009

Other Program Outcomes

Goals	Action Plan	Steps To Be Taken	Date
Enhance visibility of Lock Haven B.A. program	Increase participation in internships and summer programs for mathematics majors	Find faculty member volunteer to compile information on summer research programs and internships and publicize these to students	Dec 2009

Resources

- Site licensing for Geometers' Sketchpad software
- Continued licensing for software such as Mathematica

VIII. Comments

Comments by Dean and/or Provost

IX. Actions Planned by the University

- ☐ Continue Program
- ☐ Continue Program and Revise as Indicated
- ☐ Place in Moratorium
- ☐ Interim Review
- ☐ Discontinue Program
- ☐ Reorganization
- ☐ Pursue Accreditation
- ☐ Other (Please explain below)

Department Chair

Date

Program Coordinator	Date
Program Review Chair	Date
Provost or Vice President	Date