

**Lock Haven University**  
**Mathematics Department**  
**Bachelor of Science**  
**Mathematics Major**

Effective: Fall 2017

<b>Intellectual Foundation</b>	<b>9 sh</b>
<b>Written Communication</b>	<b>3 sh</b>
ENGL100: Composition (3 sh)	
WC Competency 1 suggested: (MATH225: History of Mathematics)	
WC Competency 2	
<b>Oral Communication</b>	<b>3 sh</b>
<b>Mathematical and Computational Thinking</b>	<b>3 sh</b>
MATH141: Calculus 1	
<b>Critical Thinking</b>	
CT Competency 1	
CT Competency 2	
<b>Knowledge and Inquiry</b>	<b>21 sh</b>
<b>Natural Science Inquiry</b> (at least one lab)	<b>6 sh</b>
<b>Historical, Behavioral, and Social Science Inquiry</b>	<b>6 sh</b>
<b>Philosophical, Literary, and Aesthetic Inquiry</b>	<b>9 sh</b>
Aesthetics:	
Philosophy/Literature:	
PLA:	

<b>Personal and Social Responsibility</b>	<b>12 sh</b>
<b>Global Awareness and Citizenship</b> (at least one with GAC-Historical Foundation)	<b>9 sh</b>
GAC:	
GAC:	
GAC-H:	
<b>Wellness</b>	<b>3 sh</b>
<b>Experiential Learning</b>	
EL Competency 1	
EL Competency 2	

<b>Electives</b>	<b>26 sh</b>

<b>First Year Student Seminar</b>	<b>1 sh</b>
MATH119: First-Year Student Seminar	1 sh

<b>Major Area and Cognate Courses</b>	<b>51 sh</b>
# COMP160: Programming 1	3 sh
# MATH142: Calculus 2	3 sh
# MATH205: Foundations of Mathematics	3 sh
# MATH243: Calculus 3	3 sh
# MATH244: Calculus 4	3 sh
# MATH310: Modern Algebra 1	3 sh
# MATH311: Elements of Linear Algebra	3 sh
# MATH401: Real Analysis 1	3 sh

**Students must take at least 27 sh from the Pure and Applied Discipline**

<b>Pure Discipline</b> (at least 6 sh)	
# MATH225: History of Mathematics	3 sh
# MATH302: Number Theory	3 sh
# MATH307: Foundations of Geometry	3 sh
# MATH402: Real Analysis 2	3 sh
# MATH405: Complex Analysis	3 sh
# MATH410: Introduction to Topology	3 sh
# MATH420: Modern Algebra 2	3 sh
MATHX59: Special Topics in Mathematics	3 sh

<b>Applied Discipline</b> (at least 6 sh)	
# COMP161: Programming 2	3 sh
# MATH301: Differential Equations	3 sh
# MATH312: Probability and Statistics	3 sh
# MATH313: Mathematical Statistics 1	3 sh
# MATH320: Linear Programming	3 sh
# MATH350: Numerical Methods	3 sh
# MATH403: Biomathematics	3 sh
# MATH404: Applied Mathematics	3 sh
# MATH422: Applied Statistics	3 sh
# MATH412: Actuarial Mathematics	3 sh

# BOG Advanced Coursework

**Lock Haven University  
Mathematics Department  
Suggested Course Sequence**

**Fall Freshman (example)**

ENGL100: Composition (3)  
MATH119: First Year Student Seminar (1)  
MATH141: Calculus 1 (3) [MCT]  
Hist., Behav., and Soc. Sci. (3) [HBS]  
Natural Science (3) [NS]  
Philos., Literary, and Aesth. (3) [PLA]

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Credit Total: 16

**Spring Freshman (example)**

#MATH142: Calculus 2 (3)  
#MATH205: Foundations of Math (3)  
Philos., Literary, and Aesth. (3) [PLA]  
Oral Communication (3) [OC]  
Wellness (3) [WEL]

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Credit Total: 15

**Fall Sophomore (example)**

#MATH243: Calculus 3 (3)  
#COMP160: Programming 1 (3)  
Natural Science with Lab (3) [NS]  
Elective (3) [CT]  
Global Aware. And Citiz. (3) [GAC]

Credit Total: 15

**Spring Sophomore (example)**

#MATH244: Calculus 4 (3)  
#MATH225: History of Math (3) [WC]  
#MATH311: Elem. of Linear Alg (3)  
#COMP161: Programming 2 (3)  
Global Aware. And Citiz. (3) [GAC]

Credit Total: 15

**Fall Junior (example)**

#MATH302: Number Theory (3)  
#MATH307: Foundations of Geom. (3)  
Philos., Literary, and Aesth. (3) [PLA]  
Global Aware. And Citiz. (3) [GAC]  
Elective (3) [CT]

Credit Total: 15

**Spring Junior (example)**

#MATH310: Modern Algebra 1 (3)  
#MATH320: Linear Programming (3)  
Elective (3) [WC]  
Elective (3) [EL]  
Elective (3)

Credit Total: 15

**Fall Senior (example)**

#MATH401: Real Analysis 1 (3)  
#MATH301: Differential Equations (3)  
Elective (2) [EL]  
Hist., Behav., and Soc. Sci. (3) [HBS]  
#MATH313: Mathematical Stats (3)

Credit Total: 14

**Spring Senior (example)**

#MATH3XX or 4XX elective (3)  
#MATH312: Prob and Stats (3)  
Elective (3)  
Elective (3)  
Elective (3)

Credit Total: 15