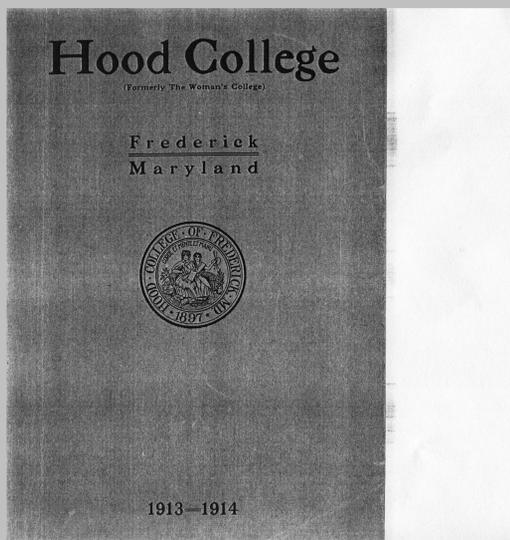


The Development of the Mathematics Curriculum at Hood College

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Introduction

The requirements for a math major at Hood College have changed drastically over the past one-hundred years. The College has gone from offering seven math courses in 1913 to offering twenty-four in 2013! Not only has the number of offered courses changed, but the courses required to obtain a math degree have also varied greatly. To major in Mathematics in 1913, only fifteen math credits were required (through 4 courses) and that number has increased to 45 today! This poster will take you through the journey that is Hood College Mathematics by revealing how the curriculum has changed so drastically through the examination of small steps of the large change.



Major Subject (1913-1923)

Requirements for the Major

- ▶ Students did not have a major like we do today, but a “major subject”
- ▶ Students had to take Solid Geometry, Plane Trigonometry, and 6 additional math credits
- ▶ Only needed four courses in Mathematics!
- ▶ In 1917, students had just one major subject that required more concentration; twelve math credits were needed plus six from the core

Offerings

- ▶ Only nine Mathematics Courses were offered in 1913!
- ▶ In 1917, this number increased to eleven when two new courses were added and the previous nine were retained

Commencement of the Major and Minor (1924-1941)

Requirements for the Major

- ▶ In 1924, the “major subject” was dropped and the major and minor we know today were introduced
- ▶ Students had to take between twenty-one and thirty credits in the math department
- ▶ For the first time, the College said that any grade less than a C would not count towards a major
- ▶ The biggest leap that came in this time period was concurrent with a new numbering system and specified required courses to get a math degree
- ▶ Students were required to take Plane Analytic Geometry, Calculus I and II, Solid Analytic Geometry/Advanced Calculus, Differential Equations and one additional course of three credits of their choosing.
- ▶ In 1944, Plane Analytic Geometry was replaced with Elementary Math Analysis

Offerings

- ▶ In 1924, the number of math courses had increased to sixteen
- ▶ Most of the lower level courses were removed and compiled into just a few classes
- ▶ In 1934, Hood College moved to numbering their courses in the hundreds rather than just single digits (previously Math 1, Math 2, Math 3,...)
- ▶ With the new numbering system, many new courses were offered, with a few lost including Methods of Teaching Mathematics which was given back to the Education Department where it still is today
- ▶ One interesting course that was added was Accounting
- ▶ In 1938 Differential Equations and Accounting were dropped and a Theory of Equations course was added

Introduction of Fields of Interest (1942-1969)

Requirements for the Major

- ▶ In 1942, the concept of a major and minor were dropped and replaced by the “Field of Interest” and a core subject
- ▶ To fulfill this core the following courses were required: Advanced Algebra, Analytic Geometry, Calculus I and II, Advanced Calculus, and Solid Analytic Geometry.
- ▶ The only change in 1958 was that the Reading course mentioned below replaced Solid Analytic Geometry
- ▶ In 1958, Reading was no longer required and students had to take two of the following three courses: Theory of Equations, Differential Equations, or Modern Algebra
- ▶ Then in 1963, the required courses became Calculus I and II, Intermediate Calculus, Modern Algebra, and a choice of Introduction to Applied Mathematics or Introduction to Analysis
- ▶ The last change before the field of interest was lost was that twenty-one credits in mathematics were required to graduate

Offerings

- ▶ In the early years of field of interest, most of the courses remained the same with a few interesting additions
- ▶ Modern Geometry and Differential Equations began occasionally being offered
- ▶ Another interesting Course that began to be offered was simply titled “Reading”, where students could work on their critical reading skills of mathematical content, something that is not always stressed today
- ▶ The only course that was added in the next sixteen years was “Special Study”
- ▶ Then in 1958, Intermediate Calculus, Theory of Equations, Statistics, Differential Equations (only offered with interest before), and Modern Algebra were all added to the offerings
- ▶ In 1963, more additions were made, Introduction to Applied Mathematics and Introduction to Analysis were added and Seminar was brought back as a recommended but not required course
- ▶ The final change before the field of interest went extinct was the addition of Probability and Numerical Methods

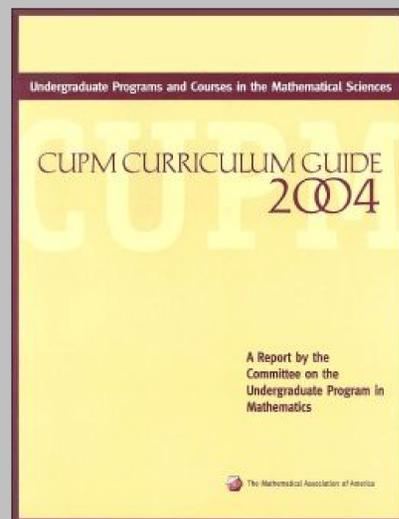
The Major Field (1970-1980)

Requirements for the Major

- ▶ In 1970, the next concept was the “Major Field” where students were required to take between twenty-four and sixty credits within the mathematics department
- ▶ Calculus I and II were still required with Intermediate Calculus being replaced by Calculus III, Linear Algebra and a choice of Calculus IV and Real Analysis I

Offerings

- ▶ Many of the courses were renumbered at this time that still remain today, including Calculus I and II and Calculus III until it was just recently changed.
- ▶ Many courses were also added or renamed with the renumbering such as Modern Algebra being changed to Linear Algebra, Algebraic Structures being added, Modern Geometry being added, Calculus IV (similar to our differential equations), Introduction to Analysis being replaced by Real Analysis I and II and Numerical Analysis being added
- ▶ In the late seventies a few new courses were added such as Finite Math, Computer Modeling and Simulation, Language and Structure of Computers, and Probability
- ▶ With these new additions also came the loss of the seminar



The Awakening of Concentrations (1981-1998)

Requirements for the Major

- ▶ In the early eighties, concentrations were introduced in the mathematics department
- ▶ Students were required to take twenty-four credits of Math Courses at the 200 level or above and needed a 2.0 GPA in Math
- ▶ In 1984 the requirements to graduate were Calculus I, II, and III, Discrete Math I and II, Linear Algebra, Differential Equations or Numerical Analysis, Real Analysis or Algebraic Structures, Modeling and Simulation or Statistics, and Introduction to Computing
- ▶ Also at this time, three concentrations were introduced in Abstract Math, Applied Math, and Computing
- ▶ For an Abstract Math concentration, on top of the Math requirements students were also required to take Logical Inquiry Through Modern Geometry, Algebraic Structures, Real Analysis, an independent study, and six additional 300-400 level credits in theoretical math
- ▶ For the Applied Mathematics concentration, students were required to take Differential Equations, Modeling, Statistics, and Numerical Analysis plus three additional 300-400 level credits in the applied field
- ▶ Finally, for the computing concentration, students were required to take Advanced Computer Programming, Language and Structure of Computers, Modeling and Simulation and Numerical Analysis plus three additional 300-400 level credits in the computing field
- ▶ In the late eighties, Intermediate Analysis began to be required

Offerings

- ▶ From 1981 to 1989, no Calculus III course was offered!
- ▶ In 1993, two new double numbered courses began to be offered, Operations Research and Applied Statistics for Quality and Productivity and Intermediate Analysis became Introduction to Abstract Mathematics
- ▶ In 1997, Applied Calculus was offered and then dropped in 2004 and replaced in 2006 with Calculus Lab
- ▶ In 1998, the revival of the Seminar was finally seen!



The Demise of Concentrations and the Current Curriculum(1999-2013)

Requirements for the Major

- ▶ In 1999 concentrations were removed and never seen again!
- ▶ In this same year, Senior Seminar was finally required again
- ▶ For next year, all of the courses that are 300 level in the math department will be upped to four credits each, making the required amount of credits higher
- ▶ Also, for the first time, mathematics majors will not have to take any computer science courses

Offerings

- ▶ In 2002, Introduction to Graph Theory was offered for the first time as a double numbered course for both undergrads and graduate students
- ▶ Then in the very next year, Elementary Number Theory was also added as a double numbered course
- ▶ A recent change was in 2004 when Algebraic Structures was changed to what we now know as Abstract Algebra

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