

The program in **Mathematics of Finance and Risk Management** (or **Mathematics of Finance** for short) is designed to provide a broad education in the quantitative aspects of risk management and finance. Today's financial instruments require sophisticated mathematical techniques for their valuation. These techniques come from the fields of probability, statistics, and differential equations.

The major program must include at least ten courses: 4 basic courses (**II**), 4 special Financial Mathematics courses (**III**), and two advanced courses as described below (**IV**).

I. Prerequisites (5 courses) {must be completed with C- or better}

Instructions	Course(s)	Student Elections (enter your course selections here)
Select one of the following pairs of introductory mathematics courses :	215 & 217 285 & 217 295 & 296	1. _____ 2. _____ 3. _____ 4. _____ 5. _____
Select both of the following Econ courses:	Econ 101 & Econ 102	
EECS 183 or working knowledge of a high level computer language (Fortran, C, or C++)	EECS 183 or working knowledge	

*II. Basic Courses** (4 courses) {must be completed with C- or better}*

Instructions	Course(s)	Student Elections (enter your course selections here)
Select one of the following Differential Equations courses:	Math 286 or Math 316	1. _____ 2. _____ 3. _____ 4. _____
Select the following Probability course:	Math 525	
Select the following Statistics course:	Stats 426	
Select one of the following Analysis courses:	Math 351 or Math 451	

***More advanced students, such as those who have completed Math 396, may substitute higher level courses with the approval of a departmental advisor.*

III. *Special Financial Math Courses** (4 courses)*

Instructions	Course(s)	Student Elections (enter your course selections here)
Select all of the following Financial courses:	Math 423 Math 474 Math 526	1. _____ 2. _____ 3. _____
Select one of the following Numerical Methods courses:	Math 471 or Math 472 (preferred)	4. _____

** The special **Mathematics of Finance** courses must include Math 423, 474, Math 471 or 472 (472 is preferred), and 526. Careful planning is essential.

IV. *Advanced Courses** (2 courses)*

Instructions	Course(s)	Student Elections (enter your course selections here)																												
Select two of the following Advanced courses:	<table border="0"> <tr> <td>Math 422</td> <td>IOE 452</td> </tr> <tr> <td>Math 427</td> <td>Phil 361</td> </tr> <tr> <td>Math 462</td> <td>Phil 414</td> </tr> <tr> <td>Math 623</td> <td>Phil 429</td> </tr> <tr> <td>Econ 401</td> <td></td> </tr> <tr> <td>Econ 402</td> <td>*Finance 408 AND 409</td> </tr> <tr> <td>Econ 409</td> <td>(1.5 credits each)</td> </tr> <tr> <td>Econ 452</td> <td></td> </tr> <tr> <td>Econ 453</td> <td>*All accounting courses</td> </tr> <tr> <td>Econ 454</td> <td>300 and above, except</td> </tr> <tr> <td>BL 305</td> <td>471</td> </tr> <tr> <td>Fin 302</td> <td></td> </tr> <tr> <td>Fin 317</td> <td>*Some Statistics courses</td> </tr> <tr> <td>IOE 310</td> <td>numbered above 400</td> </tr> </table>	Math 422	IOE 452	Math 427	Phil 361	Math 462	Phil 414	Math 623	Phil 429	Econ 401		Econ 402	*Finance 408 AND 409	Econ 409	(1.5 credits each)	Econ 452		Econ 453	*All accounting courses	Econ 454	300 and above, except	BL 305	471	Fin 302		Fin 317	*Some Statistics courses	IOE 310	numbered above 400	1. _____ 2. _____
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IOE 310	numbered above 400																													

To complete the major each student should elect two additional intermediate or advanced courses related to **Financial Mathematics. Some, but not all, of the courses numbered 300 and above offered by Accounting, Computer Science, Economics, Finance, Industrial and Operations Engineering, and Statistics are appropriate here.

Other courses may sometimes be appropriate and in all cases **approval of the advisor in Mathematics of Finance is required.**