NU Courses Required Before Taking CPU Prerequisite Courses

Many of the Certificate Program prerequisite courses have their own prerequisite courses, and interested students must take this into account when thinking about applying. This table lists the Certificate Program prerequisite courses along with their corresponding NU prerequisites . Detailed information about the CPU prerequisites can be found on the Certificate Program website:

Financial Economics Prerequisites
Managerial Analytics Prerequisites

CPU Requirement 1: Calculus and Linear Algebra (7 options)

Options to meet CPU requirement	CPU Prereq Course	CPU Prereq Course Title	Certificate(s) Required For	NU Prereq courses for CPU Prereq Courses (from Couse Catalog)
Option 1	MATH 230-0 +	Differential Calculus of Multivariable Functions	FE & MA	MATH 214 or 224
	MATH 234-0 +	Multiple Integration and Vector Calculus	FE & MA	MATH 230
	MATH 240-0	Linear Algebra	FE & MA	MATH 230
Option 2	MATH 290-1 +	MENU: Linear Algebra & Multivariable Calculus	FE & MA	By invitation & consent of dept; One year of calc (usually in HS)
	MATH 290-2 +	MENU: Linear Algebra & Multivariable Calculus	FE & MA	By invitation & consent of dept; One year of calc (usually in HS)
	MATH 290-3	MENU: Linear Algebra & Multivariable Calculus	FE & MA	By invitation & consent of dept; One year of calc (usually in HS)
Option 3	MATH 291-1 +	MENU: Intensive Linear Algebra & Multivariable Calculus	FE & MA	One year of calc (usually in HS) & consent of dept
	MATH 291-2 +	MENU: Intensive Linear Algebra & Multivariable Calculus	FE & MA	One year of calc (usually in HS) & consent of dept
	MATH 291-3	MENU: Intensive Linear Algebra & Multivariable Calculus	FE & MA	One year of calc (usually in HS) & consent of dept
Option 4	MATH 281-1 +	Accelerated Mathematics for ISP: First Year	FE & MA	Only open to ISP students
	MATH 281-2 +	Accelerated Mathematics for ISP: First Year	FE & MA	Only open to ISP students
	MATH 281-3	Accelerated Mathematics for ISP: First Year	FE & MA	Only open to ISP students
Option 5	MATH 285-1 +	Accelerated Mathematics for MMSS: First Year	FE & MA	Open only to MMSS students; First year standing in MMSS
	MATH 285-2 +	Accelerated Mathematics for MMSS: First Year	FE & MA	Open only to MMSS students; First year standing in MMSS
	MATH 285-3	Accelerated Mathematics for MMSS: First Year	FE & MA	Open only to MMSS students; First year standing in MMSS
Option 6	MATH 230-0 +	Differential Calculus of Multivariable Functions	FE & MA	MATH 214 or 224
	MATH 234-0 +	Multiple Integration and Vector Calculus	FE & MA	MATH 230
	And one of the following combinations:			
	GEN ENG 205-1 +	Engineering Analysis I	FE & MA	
	GEN ENG 205-2	Engineering Analysis II	FE & MA	Need C- or better in GEN ENG 205-1
	or			
	GEN ENG 206-1 +	Honor Engineering Analysis	FE & MA	By consent of instructor
	GEN ENG 206-2	Honor Engineering Analysis	FE & MA	By consent of instructor
Option 7	ES APPM 252-1 +	Honors Calculus for Engineers	FE & MA	Need invitation or instructor consent
	ES APPM 252-2	Honors Calculus for Engineers	FE & MA	Need invitation or instructor consent
	And one of the following combinations:			
	GEN ENG 205-1 +	Engineering Analysis I	FE & MA	
	GEN ENG 205-2	Engineering Analysis II	FE & MA	Need C- or better in GEN ENG 205-1
	or			
	GEN ENG 206-1 +	Honor Engineering Analysis	FE & MA	By consent of instructor
	GEN ENG 206-2	Honor Engineering Analysis	FE & MA	By consent of instructor

Students should refer to NU course catalog and talk with the department and/or course instructor to confirm this information.

NU Courses Required Before Taking CPU Prerequisite Courses

Requirement 2: Probability (8 options)

Options to meet CPU requirement	CPU Prereq Course	CPU Prereq Course Title	Certificate(s) Required For	NU Prereq courses for CPU Prereq Courses (from Couse Catalog)
Option 1	MATH 310-1	Probability and Stochastic Processes	FE & MA	MATH 234 and MATH 240
Option 2	STAT 320-1	Stat Theory & Methods	FE & MA	STAT 202 or STAT 210 and MATH 234
Option 3	STAT 383-0	Probability and Statistics for ISP	FE & MA	Only open to ISP students
Option 4	MATH 385-0	Probability and Statistics for MMSS	FE & MA	Second-year standing in MMSS
Option 5	IEMS 202-0	Probability	FE & MA	Concurrent enrollment in MATH 234
Option 6	EECS 302-0	Probabilistic Systems and Random Signals	FE & MA	MATH 234
Option 7	BMD_ENG 220-0	Introduction to Biomedical Statistics	FE & MA	None stated
Option 8	CHEM_ENG 312-0	Probability and Statistics for Chemical Engineering	FE & MA	None stated

Requirement 3: Econometrics/Statistics (3 options)

Options to meet CPU requirement	CPU Prereq Course	CPU Prereq Course Title	Certificate(s) Required For	NU Prereq courses for CPU Prereq Courses (from Couse Catalog)
Option 1*	ECON 381-1	Econometrics	FE & MA	ECON 310-1; STAT 210 or equivalent; MATH 224 and 230
	ECON 381-2	Econometrics	FE only	ECON 381-1
Option 2*	MATH 386-1	Econometrics for MMSS	FE & MA	Open only to MMSS students; Second-year standing in MMSS
	MATH 386-2	Econometrics for MMSS	FE only	Open only to MMSS students; Second-year standing in MMSS; MATH 386-1
Option 3^	IEMS 303-0 +	Statistics I	MA only	IEMS 202 or equivalent
	IEMS 304-0	Statistics II	MA only	IEMS 303 or equivalent
Option 4^	STAT 320-2 +	Statistical Theory and Methods II	MA only	None stated
	IEMS 304-0	Statistics II	MA only	IEMS 303 or equivalent
Option 5^	STAT 320-2 +	Statistical Theory and Methods II	MA only	STAT 320-1 and MATH 240
	STAT 350-0	Regression Analysis	MA only	STAT 320-2

* Financial Economics Certificate applicants must take both classes in the sequence to fulfill Option 1 (ECON 381-1 and 2) or Option 2 (MATH 386-1 and 2) in the Econometrics/Statistics requirement. Managerial Analytics Certificate applicants only need to take the first course in Option 1 (ECON 381-1) or Option 2 (MATH 386-1).

^ Options 3, 4 and 5 are only offered to Managerial Analytics applicants. IEMS 304 and STAT 350 may be taken concurrently with CPU courses.

Requirement 4: Microeconomics (2 options)

Options to meet CPU requirement	CPU Prereq Course	CPU Prereq Course Title	Certificate(s) Required For	NU Prereq courses for CPU Prereq Courses (from Couse Catalog)
Option 1	ECON 310-1	Microeconomics	FE & MA	ECON 201,202, MATH 220
Option 2	MMSS 211-1	Social Science Theories & Meth-First Yr	FE & MA	Open only to MMSS students; Second-year standing in MMSS

Requirement 5: Optimization (3 options)

Options to meet CPU requirement	CPU Prereq Course	CPU Prereq Course Title	Certificate(s) Required For	NU Prereq courses for CPU Prereq Courses (from Couse Catalog)
Option 1	MATH 368-0	Introduction to Optimization	MA only	MATH 258-3, 290-3, or 291-3; or both MATH 240 and 300
Option 2	IEMS 313-0	Deterministic Models & Optimization	MA only	GEN ENG 205-1; MATH 230; sophomore standing
Option 3	CHEM ENG 345-0	Process Optimization	MA only	Senior standing

Students should refer to NU course catalog and talk with the department and/or course instructor to confirm this information.