



Bachelor's Degree in Mathematics

Faculty Of Arts And Sciences

HOME

INFORMATION ON
ECTS / DS & LLP

INFORMATION ON
DEGREE PROGRAMS

INFORMATION ON
THE INSTITUTION

GENERAL INFORMATION
FOR STUDENTS

Course Structure Diagram

First Semester		Theo.	Prac	Credits	ECTS
<u>PHYS 103</u>	GENERAL PHYSICS I	3	2	4	7
<u>MATH 151</u>	ABSTRACT MATHEMATICS	3	0	3	7
<u>MATH 123</u>	LINEAR ALGEBRA	3	0	3	5
<u>MATH 101</u>	CALCULUS I	6	0	6	11
		15	2	16	30

Second Semester		Theo.	Prac	Credits	ECTS
<u>PHYS 104</u>	GENERAL PHYSICS II	3	2	4	7
<u>MATH 140</u>	ANALYTIC GEOMETRY	3	0	3	5
<u>MATH 124</u>	ADVANCED LINEAR ALGEBRA	3	0	3	5
<u>MATH 102</u>	CALCULUS II	6	0	6	8
<u>CENG 103</u>	FUNDAMENTALS OF COMPUTER PROGRAMMING I	3	2	4	6
		18	4	20	31

Third Semester		Theo.	Prac	Credits	ECTS
<u>TURK 101</u>	TURKISH LANGUAGE I	2	0	2	2
<u>MATH 281</u>	PROBABILITY & STATISTICS	3	0	3	5
<u>MATH 271</u>	DIFFERENTIAL EQUATIONS	3	0	3	5
<u>MATH 225</u>	NUMBER THEORY I	3	0	3	8
<u>MATH 201</u>	ADVANCED CALCULUS I	4	0	4	8
<u>APHR 101</u>	ATATURK'S PRINCIPLES AND HISTORY OF TURKISH REVOLUTION I	2	0	2	2
		17	0	17	30

Fourth Semester		Theo.	Prac	Credits	ECTS
<u>TURK 102</u>	TURKISH LANGUAGE II	2	0	2	2
<u>MATH 286</u>	MATLAB AND MAPLE	3	0	3	5
<u>MATH 272</u>	BOUNDARY VALUE PROBLEMS	3	0	3	5
<u>MATH 226</u>	NUMBER THEORY II	3	0	3	8
<u>MATH 202</u>	ADVANCED CALCULUS II	4	0	4	8
<u>APHR 102</u>	ATATURK'S PRINCIPLES AND HISTORY OF TURKISH REVOLUTION II	2	0	2	2
		17	0	17	30

Fifth Semester		Theo.	Prac	Credits	ECTS
<u>MATH 375</u>	NUMERICAL ANALYSIS I	3	0	3	5
<u>MATH 371</u>	INTRODUCTION TO PDES	3	0	3	5
<u>MATH 331</u>	ABSTRACT ALGEBRA I	3	0	3	8
<u>MATH 301</u>	COMPLEX ANALYSIS I	3	0	3	7
XXX xxx	NON-TECHNICAL ELECTIVE I*	3	0	3	5
		15	0	15	30

Sixth Semester		Theo.	Prac	Credits	ECTS
<u>MATH 376</u>	NUMERICAL ANALYSIS II	3	0	3	5
<u>MATH 332</u>	ABSTRACT ALGEBRA II	3	0	3	8
<u>MATH 302</u>	COMPLEX ANALYSIS II	3	0	3	7
XXX xxx	NON-TECHNICAL ELECTIVE II*	3	0	3	5
MATH xxx	TECHNICAL ELECTIVE I**	3	0	3	5
		15	0	15	30

Seventh Semester		Theo.	Prac	Credits	ECTS
<u>MATH 461</u>	GENERAL TOPOLOGY	3	0	3	10
<u>MATH 401</u>	REAL ANALYSIS	3	0	3	10
MATH xxx	TECHNICAL ELECTIVE II**	3	0	3	5
XXX xxx	TECHNICAL ELECTIVE III**	3	0	3	5
		12	0	12	30

Eight Semester		Theo.	Prac	Credits	ECTS
<u>MATH 440</u>	DIFFERENTIAL GEOMETRY	3	0	3	10
<u>MATH 410</u>	FUNCTIONAL ANALYSIS	3	0	3	10
MATH xxx	TECHNICAL ELECTIVE IV**	3	0	3	5
XXX xxx	TECNICAL ELECTIVE V**	3	0	3	5
		12	0	12	30

* Non-technical elective courses could be selected with the consent of the advisor or chairman.

** Technical electives can be chosen from technical elective list of MATH department or any 200 and higher-level PHYS, CENG, EE, IE, ECON and MAN courses with the consent of the advisor or chairman.

*** 3 of your ?Technical Elective Courses? must be with the code of ?MATH?

Total Credits Required in Degree Program: 124 / Total ECTS Credits: 241

INFORMATION: All of the following elective courses aren't opened each semester. Please take information about potential open courses from the head of department.

Elective Courses

TECHNICAL ELECTIVES (3+0) 3		Theo.	Prac	Credits	ECTS
<u>MATH 349</u>	SURFACE THEORY	3	0	3	5
<u>MATH 353</u>	COMBINATORICS	3	0	3	5
<u>MATH 355</u>	GRAPH THEORY	3	0	3	5
<u>MATH 378</u>	SPECIAL FUNCTIONS OF APPLIED MATHEMATICS	3	0	3	5
<u>MATH 379</u>	INEQUALITIES	3	0	3	5
<u>MATH 387</u>	MATHEMATICAL LINEAR PROGRAMMING	3	0	3	5
<u>MATH 403</u>	CALCULUS OF ABSTRACT FUNCTIONS	3	0	3	5
<u>MATH 405</u>	SEMIGROUPS OF OPERATORS	3	0	3	5
<u>MATH 406</u>	SELECTED TOPICS IN MATHEMATICS	3	0	3	5
<u>MATH 409</u>	THEORY OF OP. IN BANACH SPACE	3	0	3	5
<u>MATH 412</u>	INTRODUCTION TO HILBERT SPACES	3	0	3	5
<u>MATH 415</u>	INTRODUCTION TO LEBESQUE INTEGRALS	3	0	3	5
<u>MATH 424</u>	RINGS AND MODULES	3	0	3	5
<u>MATH 427</u>	INTRO. TO REPRESENTATION THEORY	3	0	3	5
<u>MATH 429</u>	GROUP THEORY	3	0	3	5
<u>MATH 431</u>	MODULAR FORMS	3	0	3	5
<u>MATH 436</u>	FIELD EXTENSIONS AND GALOIS THEORY	3	0	3	5
<u>MATH 439</u>	INTRODUCTION TO CHARACTER THEORY	3	0	3	5
<u>MATH 474</u>	FOURIER SERIES AND INTEGRALS	3	0	3	5
<u>MATH 477</u>	NUMERICAL SOLUTIONS OF ODES	3	0	3	5
<u>MATH 479</u>	GREEN'S FUNCTION WITH APPLICATIONS	3	0	3	5
<u>MATH 480</u>	GENERAL MATHEMATICAL CONCEPTS AND METHODS	3	0	3	5
<u>MATH 481</u>	VARIATIONAL CALCULUS	3	0	3	5
<u>MATH 483</u>	BASIC DISTRIBUTION THEORY	3	0	3	5
<u>MATH 484</u>	NUMARICAL SOLUTIONS OF PDES	3	0	3	5
<u>MATH 488</u>	GAME THEORY	3	0	3	5
<u>MATH 489</u>	COMPUTATIONAL MATHEMATICS	3	0	3	5
<u>MATH 492</u>	SENIOR PROJECT	3	0	3	6
<u>CENG 201</u>	DATA STRUCTURES	3	0	3	5
<u>CENG 203</u>	DIGITAL SYSTEMS	3	2	4	6
<u>CENG 217</u>	OBJECT ORIENTED PROGRAMMING	3	0	3	7
<u>CENG 303</u>	MICROPROCESSORS AND MICROCOMPUTING	3	0	3	7
<u>CENG 341</u>	OPERATING SYSTEMS	3	0	3	8
<u>CENG 351</u>	DATABASE MANAGEMENT SYSTEMS	3	0	3	7
<u>CENG 362</u>	COMPUTER NETWORKS	3	2	4	8
<u>CENG 399</u>	INDUSTRIAL TRAINING II	0	0	0	2
<u>CENG 401</u>	SOFTWARE ENGINEERING	3	0	3	5
<u>CENG 410</u>	INTRO. TO DESIGN PATTERNS & FRAMEWORKS	3	0	3	5
<u>CENG 453</u>	INTRODUCTION TO E-BUSINESS/E-COMMERCE	3	0	3	5
<u>CENG 454</u>	INTRO. TO EXTENSIBLE MARKUP LANGUAGE (XML)	3	0	3	5
<u>CENG 456</u>	MULTIMEDIA SYSTEMS	3	0	3	5
<u>CENG 464</u>	DISTRIBUTED SYSTEMS	3	0	3	5
<u>CENG 465</u>	MOBILE AND WIRELESS NETWORKING	3	0	3	5
<u>CENG 482</u>	NETWORK SECURITY	3	0	3	5
<u>CENG 484</u>	EMBEDDED SYSTEMS	3	0	3	5
<u>CENG 485</u>	INTRODUCTION TO CRYPTOGRAPHY	3	0	3	5
<u>CENG 492</u>	INTRODUCTION TO PATTERN RECOGNITION	3	0	3	5
<u>CENG 497</u>	SENIOR DESIGN PROJECT I	0	4	2	3
<u>EEE 201</u>	CIRCUIT THEORY I	3	2	4	7
<u>EEE 202</u>	CIRCUIT THEORY II	3	2	4	7
<u>EEE 237</u>	INTRODUCTION TO MICROPROCESSORS	3	2	4	5
<u>EEE 285</u>	ELECTROMAGNETIC FIELD THEORY	3	0	3	5
<u>EEE 286</u>	ELECTROMAGNETIC WAVE THEORY	3	0	3	6
<u>EEE 292</u>	ELECTRONIC CIRCUITS AND DEVICES	3	2	4	5
<u>EEE 316</u>	COMMUNICATIONS I	3	2	4	6
<u>EEE 321</u>	ELECTRONICS I	3	2	4	6
<u>EEE 322</u>	ELECTRONICS II	3	2	4	7
<u>EEE 338</u>	LINEAR CONTROL SYSTEMS	3	2	4	6
<u>EEE 353</u>	SIGNALS AND SYSTEMS	3	0	3	6
<u>EEE 361</u>	ELECTRICAL MACHINERY I	3	2	4	6
<u>EEE 362</u>	ELECTRICAL MACHINERY II	3	2	4	6
<u>EEE 371</u>	ELECTRICAL DISTRIBUTION SYSTEMS	3	0	3	5
<u>EEE 373</u>	HIGH VOLTAGE TECHNIQUES	3	0	3	5
<u>EEE 407</u>	RTL BASED HARDWARE DESING AND APPLICATIONS	3	2	4	6
<u>EEE 416</u>	INTRODUCTION TO OPTICAL FIBER COMMUNICATIONS	3	0	3	5
<u>EEE 422</u>	RADIO-FREQUENCY MICROELECTRONICS	3	2	4	6
<u>EEE 428</u>	SOLID STATE ELECTRONICS	3	0	3	5

<u>EEE 431</u>	DISCRETE TIME CONTROL SYSTEMS	3	2	4	6
<u>EEE 436</u>	MECHATRONICS	3	0	3	5
<u>EEE 451</u>	DIGITAL SIGNAL PROCESSING	3	2	4	6
<u>EEE 471</u>	POWER SYSTEM ANALYSIS I	3	2	4	6
<u>EEE 472</u>	POWER SYSTEM ANALYSIS II	3	2	4	6
<u>EEE 485</u>	MICROWAVE THEORY	3	2	4	5
<u>EEE 495</u>	SPECIAL TOPICS IN ELECTRONICS ENGINEERING I	3	0	3	5
<u>EEE 496</u>	SPECIAL TOPICS IN ELECTRONICS ENGINEERING II	3	0	3	5
<u>IE 218</u>	OPERATIONS RESEARCH II	3	1	3	7
<u>IE 236</u>	WORK METHODS AND MEASUREMENT	3	0	3	5
<u>IE 322</u>	PRODUCTION PLANNING AND CONTROL II	3	0	3	5
<u>IE 325</u>	COST ANALYSIS AND CONTROL	3	0	3	5
<u>IE 341</u>	DATABASE MANAGEMENT IN INDUSTRIAL ENGINEERING	2	2	3	6
<u>IE 445</u>	COMPUTER INTEGRATED MANUFACTURING SYSTEMS	3	0	3	5
<u>IE 455</u>	APPLIED OPTIMIZATION	3	0	3	5
<u>PHYS 201</u>	VIBRATION AND WAVES	3	0	3	5
<u>PHYS 206</u>	OPTICS	3	0	3	6
<u>PHYS 208</u>	CLASSICAL MECHANICS	4	0	4	7
<u>PHYS 210</u>	MODERN PHYSICS	3	0	3	6
<u>PHYS 251</u>	PHYSICS LABORATORY III	0	2	1	2
<u>PHYS 252</u>	PHYSICS LABORATORY IV	0	2	1	2
<u>PHYS 261</u>	MATHEMATICS METHODS IN PHYSICS	3	0	3	5
<u>PHYS 303</u>	QUANTUM MECHANICS I	3	0	3	6
<u>PHYS 304</u>	QUANTUM MECHANICS II	3	0	3	6
<u>PHYS 305</u>	ELECTROMAGNETIC THEORY I	3	0	3	6
<u>PHYS 306</u>	ELECTROMAGNETIC THEORY II	3	0	3	6
<u>PHYS 321</u>	HEAT AND THERMODYNAMICS	3	0	3	6
<u>PHYS 324</u>	STATISTICAL PHYSICS	3	0	3	6
<u>PHYS 351</u>	PHYSICS LABORATORY V	0	2	1	2
<u>PHYS 352</u>	PHYSICS LABORATORY VI	0	2	1	2
<u>PHYS 403</u>	ATOMIC PHYSICS	3	0	3	8
<u>PHYS 406</u>	MOLECULAR PHYSICS	3	0	3	7
<u>PHYS 421</u>	SOLID STATE PHYSICS I	3	0	3	8
<u>PHYS 422</u>	SOLID STATE PHYSICS II	3	0	3	6
<u>PHYS 423</u>	SEMICONDUCTOR PHYSICS	3	0	3	6
<u>PHYS 424</u>	LASERS	3	0	3	6
<u>PHYS 426</u>	MAGNETIC PROPERTIES OF SOLIDS	3	0	3	6
<u>PHYS 451</u>	PHYSICS LABORATORY VII	0	2	1	2
<u>ECON 203</u>	STATISTICS FOR SOCIAL SCIENCES I	3	0	3	4
<u>ECON 204</u>	STATISTICS FOR SOCIAL SCIENCES II	3	0	3	4
<u>ECON 231</u>	INTERMEDIATE MICROECONOMICS	3	0	3	9
<u>ECON 232</u>	INTERMEDIATE MACROECONOMICS	3	0	3	9
<u>ECON 238</u>	EUROPEAN ECONOMIC INTEGRATION AND TURKEY	3	0	3	9
<u>ECON 254</u>	INDUSTRIAL ECONOMICS	3	0	3	5
<u>ECON 297</u>	RESEARCH WRITING IN ECONOMICS	3	0	3	5
<u>ECON 301</u>	MATHEMATICAL ECONOMICS I	3	0	3	5
<u>ECON 302</u>	MATHEMATICAL ECONOMICS II	3	0	3	5
<u>ECON 303</u>	ECONOMETRICS I	3	0	3	6
<u>ECON 304</u>	ECONOMETRICS II	3	0	3	8
<u>ECON 311</u>	INTERNATIONAL TRADE	3	0	3	6
<u>ECON 312</u>	INTERNATIONAL FINANCE	3	0	3	7
<u>ECON 321</u>	PUBLIC FINANCE I	3	0	3	4
<u>ECON 331</u>	HISTORY OF ECONOMIC THOUGHT I	3	0	3	4
<u>ECON 336</u>	MONEY AND BANKING	3	0	3	7
<u>ECON 373</u>	ENVIRONMENTAL ECONOMICS	3	0	3	5
<u>ECON 377</u>	PARTICIPATORY BANKING	3	0	3	5
<u>ECON 386</u>	ECONOMIC POLICY	3	0	3	5
<u>ECON 388</u>	ENGINEERING ECONOMICS	3	0	3	5
<u>ECON 401</u>	GROWTH AND DEVELOPMENT I	3	0	3	9
<u>ECON 402</u>	GROWTH AND DEVELOPMENT II	3	0	3	9
<u>ECON 403</u>	ECONOMIC ANALYSIS	3	0	3	6
<u>ECON 405</u>	ECONOMIC THEORY III	3	0	3	6
<u>ECON 406</u>	ECONOMIC THEORY IV	3	0	3	6
<u>ECON 414</u>	ECONOMIC HISTORY II	3	0	3	6
<u>ECON 423</u>	TURKISH ECONOMY	3	0	3	6
<u>ECON 436</u>	MONEY AND BANKING	3	0	3	6
<u>ECON 464</u>	READING & WRITING IN SELECTED TOPICS III	3	0	3	5
<u>MAN 201</u>	FINANCIAL ACCOUNTING I	3	0	3	5
<u>MAN 202</u>	FINANCIAL ACCOUNTING II	3	0	3	5
<u>MAN 203</u>	OPERATIONS RESEARCH IN BUSINESS AND ECONOMICS I	3	0	3	5
<u>MAN 204</u>	OPERATIONS RESEARCH IN BUSINESS AND ECONOMICS II	3	0	3	4
<u>MAN 209</u>	PRINCIPLES OF MARKETING	3	0	3	5
<u>MAN 211</u>	ORGANISATION THEORY I	3	0	3	6
<u>MAN 212</u>	ORGANISATION THEORY II	3	0	3	6

<u>MAN 224</u>	MARKETING MANAGEMENT	3	0	3	6
<u>MAN 231</u>	BUSINESS COMMUNICATIONS FOR MANAGEMENT I	3	0	3	5
<u>MAN 232</u>	BUSINESS COMMUNICATIONS FOR MANAGEMENT II	3	0	3	5
<u>MAN 250</u>	DATA PROCESSING I	3	0	3	5
<u>MAN 303</u>	MANAGERIAL FINANCE I	3	0	3	6
<u>MAN 304</u>	MANAGERIAL FINANCE II	3	0	3	7
<u>MAN 305</u>	COST ACCOUNTING	3	0	3	7
<u>MAN 306</u>	MANAGERIAL ACCOUNTING	3	0	3	7
<u>MAN 307</u>	PRODUCTION AND OPERATIONS MANAGEMENT	3	0	3	6
<u>MAN 310</u>	INTERNATIONAL BUSINESS	3	0	3	5
<u>MAN 314</u>	HUMAN RESOURCES MANAGEMENT	3	0	3	5
<u>MAN 324</u>	CONSUMER BEHAVIOUR	3	0	3	6
<u>MAN 361</u>	ORGANISATIONAL BEHAVIOR	3	0	3	6
<u>MAN 366</u>	SMALL BUSINESS MANAGEMENT	3	0	3	6
<u>MAN 390</u>	SUPPLY CHAIN MANAGEMENT	3	0	3	6
<u>MAN 401</u>	STRATEGIC MANAGEMENT	3	0	3	5
<u>MAN 404</u>	INVESTMENT MANAGEMENT	3	0	3	6
<u>MAN 407</u>	MANAGEMENT INFORMATION SYSTEMS	3	0	3	6
<u>MAN 414</u>	FINANCIAL STATEMENT ANALYSIS	3	0	3	6
<u>MAN 416</u>	TOTAL QUALITY MANAGEMENT AND ITS TOOLS	3	0	3	6
<u>MAN 432</u>	BUSINESS POLICY	3	0	3	6
<u>MAN 469</u>	PROJECT MANAGEMENT	3	0	3	6
NON-AREA TECHNICAL ELECTIVES (3+0) 3		Theo.	Prac	Credits	ECTS
<u>EDU 420</u>	APPLIED EDUCATIONAL ENTREPRENEURSHIP	2	2	3	5
MÜZ 141	BAĞLAMA ÖĞRETİMİ I	3	0	3	5
MÜZ 142	BAĞLAMA ÖĞRETİMİ II	3	0	3	5
MÜZ 143	PİYANO ÖĞRETİMİ I	3	0	3	5
MÜZ 144	PİYANO ÖĞRETİMİ II	3	0	3	5
MÜZ 145	NEY ÖĞRETİMİ I	3	0	3	5
MÜZ 146	NEY ÖĞRETİMİ II	3	0	3	5
MÜZ 147	KANUN ÖĞRETİMİ I	3	0	3	5
MÜZ 148	KANUN ÖĞRETİMİ II	3	0	3	5
MÜZ 151	TÜRK MÜZİK TARİHİ I	3	0	3	5
MÜZ 153	TÜRK MÜZİĞİNDE USULLER VE KUDÜM I	3	0	3	5
MÜZ 154	TÜRK MÜZİĞİNDE USULLER VE KUDÜM II	3	0	3	5
<u>MÜZ 155</u>	TÜRK HALK MÜZİĞİ BİLGİLERİ VE REPERTUAR I	3	0	3	5
MÜZ 156	TÜRK HALK MÜZİĞİ BİLGİLERİ VE REPERTUAR II	3	0	3	5
MÜZ 157	TÜRK KLASİK MÜZİĞİ BİLGİLERİ VE REPERTUARLARI I	3	0	3	5
MÜZ 158	TÜRK KLASİK MÜZİĞİ BİLGİLERİ VE REPERTUARLARI II	3	0	3	5
MÜZ 159	TÜRK MÜZİĞİ BESTECİLERİ I	3	0	3	5
MÜZ 160	TÜRK MÜZİĞİ BESTECİLERİ II	3	0	3	5
MÜZ 161	YÖRESEL ÖZELLİKLERİYLE TÜRK HALK OYUNLARI I	3	0	3	5
MÜZ 162	YÖRESEL ÖZELLİKLERİYLE TÜRK HALK OYUNLARI II	3	0	3	5
MÜZ 163	TÜRK DİN MUSİKİSİ I	3	0	3	5
MÜZ 164	TÜRK DİN MUSİKİSİ II	3	0	3	5
MÜZ 165	HALK BİLİMİ-MÜZİK-OYUN I	3	0	3	5
MÜZ 166	HALK BİLİMİ-MÜZİK-OYUN II	3	0	3	5
MÜZ 167	PİYANO VE POPÜLER MÜZİK I	3	0	3	5
MÜZ 168	PİYANO VE POPÜLER MÜZİK II	3	0	3	5
MÜZ 169	TÜRK DÜNYASI MÜZİK KÜLTÜRÜ I	3	0	3	5
MÜZ 170	TÜRK DÜNYASI MÜZİK KÜLTÜRÜ II	3	0	3	5