ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

UYGULAMALI MATEMATİK ENSTİTÜSÜ
INSTITUTE OF APPLIED MATHEMATICS

2013

FAALİYET RAPORU

ORTA DOĞU TEKNİK ÜNİVERSİTESİ

UYGULAMALI MATEMATİK ENSTİTÜSÜ

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İÇİNDEKİLER

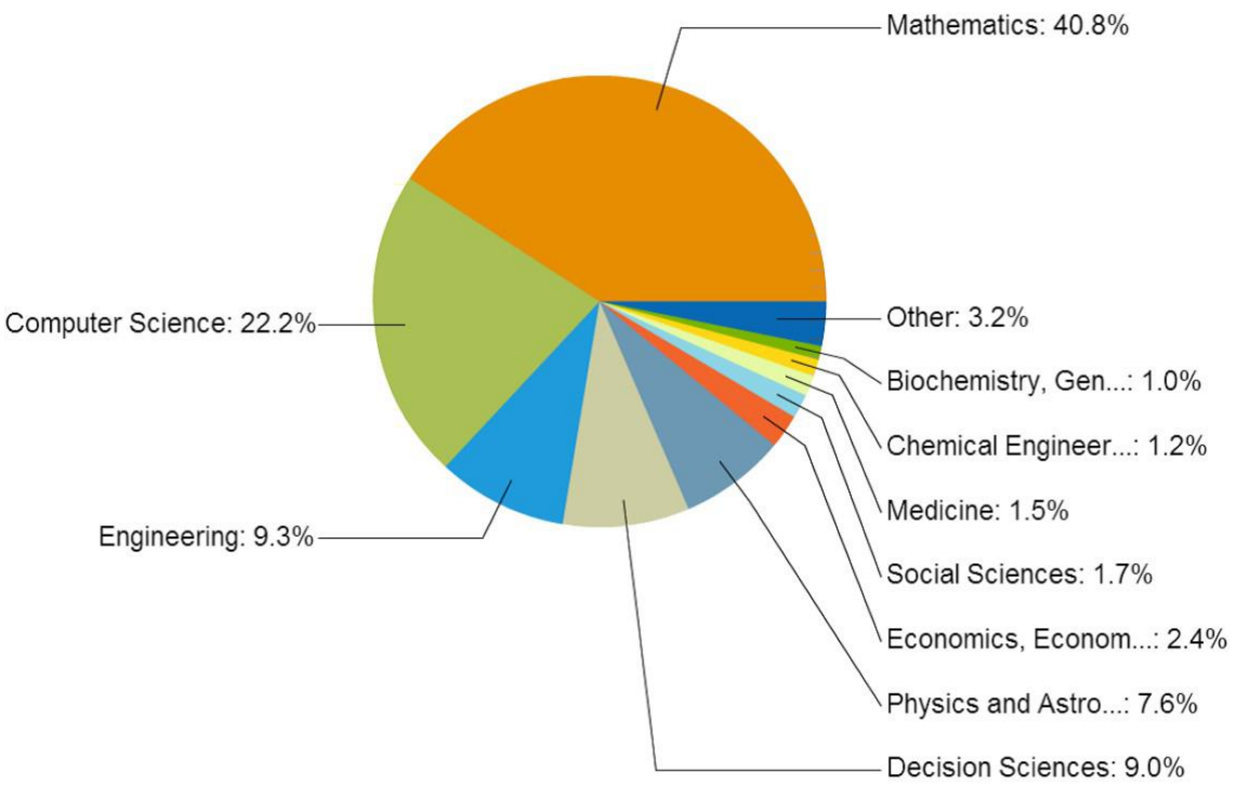
1. ÖNSÖZ

2013 yılında Enstitümüz kadrolu ve bağlantılı öğretim üyeleri tarafından SCI indeksli dergilerde 26, uluslararası hakemli dergilerde 4, kitapta makale olarak 2, uluslararası hakemli konferans bildirileri olarak 16 makale yayınlanmıştır. Toplam 17 konferans/çalıştayda 44 sunum yapılmıştır.

Quacquarelli Symonds (QS), İngiltere, tarafından yapılan 2013 yılı üniversitelerin bilim dallarına göre sıralamasında, Üniversitemiz üç alanda (İnşaat Mühendisliği, Elektrik-Elektronik Mühendisliği, Makine-Havacılık-Üretim Mühendisliği) ilk 100 üniversite, iki alanda (Eğitim, İstatistik-Yöneylem Araştırması) ilk 150 üniversite ve dört alanda (İktisat-Ekonometri, Kimya Mühendisliği, Matematik, Bilgisayar Bilimleri ve Bilgi Sistemleri) ilk 200 üniversite listesinde yer aldı. Aşağıdaki grafikte 2004-2013 yılları arasında ki yayınların dağılımında araştırmaların hangi alanda yoğunlaştığı görülmektedir.

Enstitümüz yayınlarının ilk çıkış tarihi olan 2004'den bu yana dağılımı SCOPUS veritabanına göre Articles: 164, Conference paper: 58, Editorial: 8, Article in Press: 7, Review: 5, Note: 1 olup, toplam 243 yayına yapılan atıf sayısı 784 ve H-indeks 13'dür.

Aşağıdaki grafikte yayınların konu alanlarına göre dağılımı Enstitümüzün disiplinerarası yapısını yansıtmaktadır. Decision Sciences konu alanı olarak Operations Research ve İstatistik'i kapsamaktadır.



TÜBİTAK ve Döner Sermaye projelerinin sayısı 7 olup, 5'i disiplinerarası araştırma ve 3'ü tez olmak üzere 8 BAP projesi yürütülmüştür.

Enstitümüze 44 yeni öğrenci kaydolmuş; 9 tezli, 9 tezsiz ve 14 doktora olmak üzere toplam 32 öğrenci mezun olmuştur. Her iki dönemde Enstitümüzde açılan derslere 604 öğrenci kaydolmuş olup, bunların %29.6'sı diğer bölümlerdendir.

Faaliyet raporunun tasarımda katkılarından dolayı Dr. Cihangir Tezcan'a teşekkür ederiz.

2. İNSAN KAYNAKLARI

ENSTİTÜ YÖNETİMİ

Müdür
Prof. Dr. Bülent KARASÖZEN
(Matematik)

Müdür Yardımcıları
Doç. Dr. A. Sevtap ŞELÇUK-KESTEL
(Uygulamalı Matematik Enstitüsü)

Doç. Dr. Murat MANGUOĞLU
(Bilgisayar Mühendisliği)

Enstitü Kurulu

Prof. Dr. Ferruh ÖZBUDAK
(Matematik)
Prof. Dr. Bülent KARASÖZEN
(Matematik)
Doç. Dr. A. Sevtap SELÇUK-KESTEL
(Uygulamalı Matematik Enstitüsü)
Doç. Dr. Murat MANGUOĞLU
(Bilgisayar Mühendisliği)

Enstitü Yönetim Kurulu

Prof. Dr. İnci BATMAZ
(İstatistik)
Y. Doç. Dr. Seza DANIŞOĞLU
(İşletme)
Prof. Dr. Nevzat Güneri GENÇER
(Elektrik ve Elektronik Müh.)
Prof. Dr. Bülent KARASÖZEN
(Matematik)
Doç. Dr. A. Sevtap SELÇUK-KESTEL
(Uygulamalı Matematik Enstitüsü)
Doç. Dr. Murat MANGUOĞLU
(Bilgisayar Mühendisliği)

Öğretim Üyeleri

A.Sevtap Selçuk-Kestel, Doç. Dr.
Yeliz Yolcu Okur, Y. Doç. Dr.
Hakan Öktem, Y. Doç. Dr. *
Ali Devin Sezer, Doç. Dr
Ömür Uğur, Doç. Dr.
Gerhard- Wilhelm Weber, Prof. Dr.

Doktora Sonrası Araştırmacılar

Seher Tutdere, Dr.
Oğuz Yayla, Dr.

Araştırma Görevlileri

Cansu Evcin
Canan Özel*
Çağdaş Çalık
Murat Demircioğlu*
Bülent Alper İnkaya
Turgut Hanoymak*
Sinem Kozpınar
Asena Özdemir
Neşe Öztop
Ayşe Sarıaydın
Ahmet Sınak
Eda Tekin
Büşra Zeynep Temoçin
Önder Türk*
Bükre Yıldırım
Bilgi Yılmaz

İdari Personel

Nejla Erdoğdu (Enstitü Sekreteri)
Serkan Demiröz (Sekreter)
Cevher Durmuş (Sekreter)
Saffet Aykın (İdari Amir)
Ömer Ergüven (Memur)
M. Kemal Yaşar* (Memur)
Muharrem Kayabel (Görevli)
Cafer Topal (Görevli)

*2013 yılı içinde görevlerinden ayrılmışlardır

BAĞLANTILI ÖĞRETİM ÜYELERİ – ORTA DOĞU TEKNİK ÜNİVERSİTESİ*

Matematik	Ersan Akyıldız Ali Doğanaksoy Bülent Karasözen Ferruh Özbudak Münevver Tezer Muhiddin Uğuz	İktisat	Esma Gaygısız
		Kimya Mühendisliği	Yusuf Uludağ
		Endüstri Mühendisliği	Cem İyigün Gülser Köksal
Elektrik-Elektronik Mühendisliği	Nevzat Güneri Gençer Yeşim Serinağaoğlu Melek D. Yücel	Makine Mühendisliği	Haluk Aksel
		Bilgisayar Mühendisliği	Murat Manguoğlu
İstatistik	B. Burçak Başbuğ Erkan İnci Batmaz Ceylan Yozgatlıgil Vilda Purutçuoğlu Özlem İlk-Dağ Zeynep Kalaylıoğlu	İnşaat Mühendisliği	Ayşen Aşkan Serdar Göktepe Ahmet Yakut
		Maden Mühendisliği GGIT	Şebnem Düzgün
İşletme	Nuray Güner Adil Oran Seza Danışoğlu Hande Ayaydın Hacıömeroğlu	Emekli Öğretim Üyeleri	Selçuk Bayın İ. Yurdahan Güler Azize Hayfavi

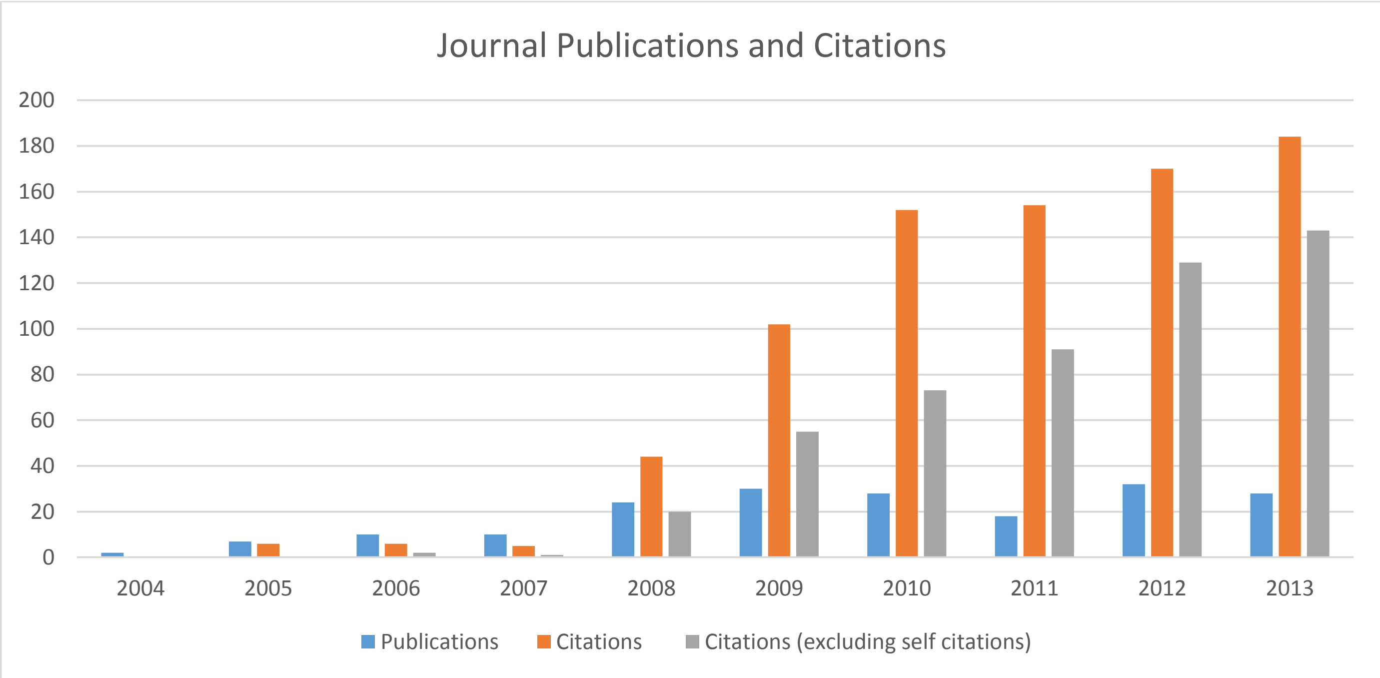
BAĞLANTILI ÖĞRETİM ÜYELERİ* – DİĞER ÜNİVERSİTELER

Ankara Üniversitesi İstatistik	Fatih Tank	Kadir Has Üniversitesi Uluslararası Ticaret ve Finans	Ömer Gebizlioğlu
Çankaya Üniversitesi Endüstri Mühendisliği	Özlem Türker Bayrak	Ondokuz Mayıs Üniversitesi Bilgisayar Mühendisliği	Sedat Akleylek
Green Danışmanlık Finans Ltd.	Erkan Kalaycı	Selçuk Üniversitesi Matematik	Derya Altıntan Ayşegül İşcanoğlu Çekiç
Hacettepe Üniversitesi Aktüerya Bilimleri	Şule Şahin Ş. Kasırga Yıldırak	Süleyman Demirel Üniversitesi Matematik	S. Zeynep Alparslan Gök
Hazine Müsteşarlığı Sigortacılık Gn. Md. Sigorta Denetleme Kurulu	Ahmet Genç Selda Korkmaz Fikret Kütük Selamet Yazıcı	TOBB-ETU Matematik	Zülfükar Saygı
Kaiserslautern Üniversitesi	Ralf Korn	TÜRKTRUST Bilgi, İletişim ve Bilişim Güvenliği Hizmetleri A.Ş.	Mert Özarar

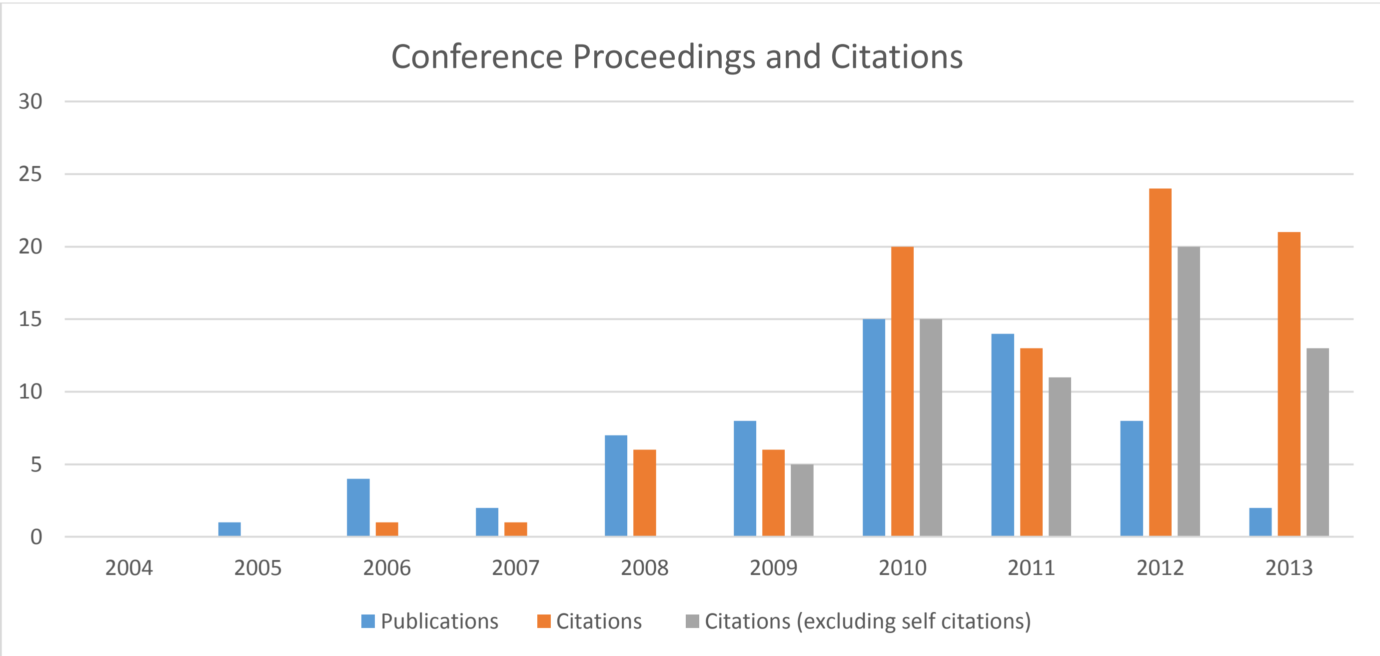
**Bu raporda 2013 yılında Enstitümüzde ders veren, danışmanlık/ortak danışmanlık yapan, ortak yayını bulunan öğretim üyeleri Bağlantılı öğretim üyesi olarak yer almaktadır.*

3. ARAŞTIRMA

3.1. YAYINLAR



Şekil 1. Enstitü dergi yayınlarının ve atıfların yıllara göre dağılımı (Kaynak: Scopus – 31.12.2013)



Şekil 2. Enstitü konferans yayınlarının ve atıfların yıllara göre dağılımı (Kaynak: Scopus – 31.12.2013)

3.1.1. SCI-A İNDEKSLİ DERGİ YAYINLARI

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- Pekmen, B., and Tezer-Sezgin, M. DRBEM solution of free convection in porous enclosures under the effect of a magnetic field, International Journal of Heat and Mass Transfer, 56 (1-2), 454-468, 2013. DOI:10.1016/j.ijheatmasstransfer.2012.09.019.
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3.1.2. SCI-B İNDEKSLİ DERGİ YAYINLARI

- Altinöz, O.T., Yılmaz, A.E., and Weber, G.W. Orthogonal array based performance improvement in the gravitational search algorithm, Turkish Journal of Electrical Engineering and Computer Sciences, 21 (1), 174-185, 2013. DOI:10.1080/02331934.2011.619265
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SCI-E (A tipi) ve SCI-E (B tipi) dergilerin listesi için http://pdb.metu.edu.tr/ogretim-uyesi-atama-ve-yukselme-kriterleri bakınız.

3.1.3. ULUSLARARASI KİTAP MAKALELERİ

- Palancı, O., Alparslan Gök S.Z., and Weber G.-W. Cooperative interval games: forest situations with interval data, Game Theory and Management, The Seventh International Conference, GTM2013, June 26-28, 2013, St. Petersburg, Russia, Abstracts, St. Petersburg University and The International Society of Dynamic Games (Russian Chapter), 180-181, 2013.

- Uğur, Ö., Yapıcı, K., Uludağ, Y., and Karasözen B. Computer simulation and optimization of stirrer hydrodynamics at high Reynolds numbers, in “Computational Fluid Dynamics: Theory, Analysis and Applications”, ed. A.D. Murphy, 493-510, 2013.

3.1.4. ULULARARASI İNDEKSLE TARANAN HAKEMLİ DERGİLERDEKİ YAYINLAR

- Akkoyunlu, C., Uzunca, M. , and B. Karasözen, B. Model Order Reduction for Nonlinear Schrödinger Equation, Chaotic Modeling and Simulation (CMSIM) 4: 637--645, 2013. DOI: 10.1007/978-3-642-33914-1_32
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- Kılıç, E., and Ulusoy, V. Effect of excessive macroeconomic volatility on monetary policy preferences in Turkey, Actual Problems of Economics, 141 (3), 311-318,2013.
- Toledano-Kitai, D., Avros, R., Volkovich, Z., Weber, G.-W., and Yahalom, O. Binomial noised model for cluster validation, Journal of Intelligent and Fuzzy Systems, 24 (3), 417-427, 2013.

3.1.5. ULUSLARARASI HAKEMLİ KONFERANS MAKALELERİ

- Akkoyunlu C., and Karasözen B. Average Vector Field Splitting Method For Nonlinear Schrödinger Equation, to appear in "Chaos and Complex Systems 2012” S. G. Stavrinides, S. Banerjee, H. Çağlar, M. Özer (eds), 245-251,Springer, 2013. DOI: 10.1007/978-3-642-33914-1_32
- Akleylek, S., Cenk, M., and Özbudak, F. A New Representation of Elements of Binary Fields with Subquadratic Space Complexity Multiplication of Polynomials, IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, E96-A, 2016-2024, 2013, DOI: 10.1587/transfun.E96.A.1
- An T. Kieu, Øksendal, B., and Yolcu Okur, Y. A Malliavin Calculus Approach to General Stochastic Differential Games with Partial Information**,** Malliavin Calculus and Stochastic Analysis,_A Festschrift in Honor of David Nualart**,** eds: F. Viens, Feng, Y. Hu, E. Nualart, Springer Proceedings in Mathematics & Statistics Volume 34, 489-510, 2013. DOI:10.1007/978-1-4614-5906-4_22
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- Ming Poh Quek, E., Purutcuoglu, V., Sambanthamurthi, R., and Weber G.-W. Modelling lipid biosynthesis pathways of oil palm by Boolean and graphical approaches,HIBIT 2011 conference in Izmir, Turkey, 129-135, 2013.
- Palancı, O., Alparslan-Gök, S.Z., and Weber, G.-W. Cooperative interval games: forest situations with interval data, Game Theory and Mangement, The Seventh International Conference, GTM2013, June 26-28, 2013, St. Petersburg, Russia, Abstracts, St. Petersburg University and The International Society of Dynamic Games (Russian Chapter), 180-181, 2013.
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- Weber, G.-W., Kuter, S., Yerlikaya-Özkurt, F., Kılıç, E., and Karimov, A. Investigation stochastic hydrid systems within the frame of portfolio optimization by modern applied mathematics, in the proceedings (CD) of International Istanbul Finance Congress - 2013 (IIFC 2013), Kadir Has University, Istanbul, 94-116, May 30-31, 2013,
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3.2. KONFERANS KATILIMLARI

Konferans	Sunum Sayısı	Tarih
Diğer konferans sunumları	3	-----
Multiple Shooting and Time Domain Decomposition Methods (MuS-TDD) Heidelberg University, Germany	1	May, 6 –8, 2013
International Conference On Preconditioning Techniques For Scientific And Industrial Applications, Oxford	1	June, 19-21, 2013
25th. Biennial Numerical Analysis Conference, University of Strathclyde, Glasgow	2	June, 25-28, 2013
Game Theory and Management, The Seventh International Conference, GTM2013, St. Petersburg, Russia	2	June, 26-28, 2013
European Conference on Computational Optimization, Chemnitz	1	June,16-19, 2013
EURO INFORMS, 26TH European Conference on Operational Research, Rome	13	July, 1-4, 2013
Üniversite Sanayi İşbirliği Proje Pazarı, ODTÜ Teknokent	1	July, 10, 2013
8th International Summer School, AACIMP-2013, National University of Technology of the Ukraine, Kyiv, Ukraine	3	August, 1-17, 2013
12th international workshop on dynamical systems and applications (IWDSA 2013) Atılım University, Ankara	1	August, 12-15, 2013
InteriOR 2013, Medan, Indonesia	3	August, 25-28, 2013
ENUMATH (European Numerical Mathematics and Advanced Applications) 2013 Conference, Lausanne, Switzerland	4	August, 26-30, 2013
OR 2013 Conference - the International Conference on Operations Research, Rotterdam, the Netherlands	2	September, 3-6, 2013
SciCADE 2013, International Conference on Scientific Computation and Differential Equations, Valladolid (Spain)	1	September, 16-20, 2013
6th International Conference on Information Security and Cryptology, METU	7	September, 20-21, 2013
Innovations in Stochastic Analysis and Mathematical Finance, The Norwegian School of Economics, Bergen, Norvey	1	September 24-26, 2013
Compressed Sensing and its Applications, Berlin	1	December, 9-13, 2013
Derivatives 2013: The State of the Art 40 Years after the Black-Scholes-Merton Model, New York-USA	1	October, 11, 2013,
Uluslararası 8. İstatistik Konferansı, Antalya	6	October, 27-29, 2013

Special Semester on Applications of Algebra and Number Theory, Algebraic curves over finite fields, Linz, Austria	1	November, 11-15, 2013.
International Workshop on Regime-Switching Models in Finance: Statistics and Optimization, Kaiserslautern, Germany	1	November, 22-23, 2013
Fraunhofer ITWM, Kaiserslautern, Germany	1	November, 25, 2013
The 6th International Conference on Security of Information and Networks, Aksaray	1	November, 26-28, 2013
COTA 2013 - The 9th International Conference on Optimization: Techniques and Applications (ICOTA 9), Taipei, Taiwan	1	December, 13-15, 2013

3.3. EDİTÖRLÜKLER

3.3.1. SÜREKLİ DERGİ EDİTÖRLÜKLERİ (SCI)

- Associate Editor of Journal of European Actuaries, Selçuk-Kestel, A.S.
- Editorial Board memeber of the Journal Optimization, Weber, G.-W.
- Editor-in-Chief of International Journal of Optimization and Control: Theories & Applications, Weber, G.-W.
- Associate Editor of International Journal of Energy Optimization and Engineering, Weber, G.-W.
- Editorial Board member of Central European Journal of Operations Research, Weber, G.-W.

3.4. ENSTİTÜ TARAFINDAN DÜZENLENEN BİLİMSEL ETKİNLİKLER

3.4.1. ÇALIŞTAY/SEMPOZYUM VE BENZERİ ETKİNLİKLER

- Short Course on MATLAB and Latex, March 1, 2013, September 28, 2013
- Catastrophe Insurance in Turkey, March 14, 2013
- Short Course on Geostatistics, Pierre Goovaerts, April 1, 2013
- Monte Carlo Methods in Finance: Basic Methods and Recent Advances, April 17, 2013
- 6th International Conference on Information Security and Cryptology, September 20-21, 2013
- Workshop on Kaskade 7 and Applications, October 3-4, 2013
- IAM Alumni Meeting: Workshop on Finance and Risk, December 7, 2013

3.4. PROJELER

3.4.1. TÜBİTAK VE DÖNER SERMAYE PROJELERİ

Proje Adı: Eğri Tabanlı Kriptografiye Matematiksel Bakış (TÜBİTAK-Almanya BMBF)
Yürütücü: Ferruh Özbudak
5 Eylül 2012 - 15 Eylül 2014 44.000 TL

Proje Adı: Cebirsel Eğriler ve Onların Bazı Kriptografik ve Kodlama Teorisindeki Problemlerdeki Uygulamaları (COST - TÜBİTAK 1001 Projesi)
Yürütücü: Ferruh Özbudak
Araştırmacılar: Cem Güneri, Zülfükar Saygı, Burcu Gülmez Temür, Çağdaş Çalık, Sedat Akleylek
1 Mayıs 2010 - 1 Mayıs 2013 216.190 TL

Proje Adı: Blok Şifrelerin Olası Olamayan Diferansiyel Kriptanalizi (TÜBİTAK 1001 Projesi)
Yürütücü: Ali Doğanaksoy
Araştırmacılar: Cihangir Tezcan, Halil Kemal Taşkın
1 Ekim 2012 - 1 Ekim 2013 65.420 TL

Proje Adı: Finansal Krizlerin Dinamiklerinin Elipsoidal Analiz ve Kümeleme Metodları Aracılığıyla Modellenmesi ve Anlaşılması (TÜBİTAK, Hızlı Destek (1002)
Yürütücü: Gerhard Wilhelm Weber
Araştırmacılar: Cem İyigün, Efsun Kürüm
1 Ekim 2102 – 30 Eylül 2013 17.300 TL

Proje Adı: Brown Hareketinde ve Levy Süreçlerinde En Büyük Kaybın Dağılımsal Özellikleri (TÜBİTAK Kariyer Projesi 110T674)
Danışman: Yeliz Yolcu Okur
1 Ocak 2011 - 31 Aralık 2014

Proje Adı: TÜBİTAK BİLGEM Kriptoanaliz Danışmanlık ve Hizmeti (TÜBİTAK BİLGEM Projesi 2013-15-00-2-00-01)
Danışman: Ali Doğanaksoy
15 Kasım 2013 - 14 Kasım 2014

Proje Adı: RSA Kriptosistemi Parametreleri için Güvenlik Testleri (TÜRKTRUST Bilgi, İletişim ve Bilişim Güvenliği Hizmetleri A.Ş)
Danışman: Ersan Akyıldız
18 Şubat 2013 - 18 Haziran 2013

3.4.2. ODTÜ-BİLİMSEL ARAŞTIRMA DİSİPLİNLERARASI PROJELERİ

Projenin Adı: Türkiye'de Kuraklık Riskine Karşı Index Tabanlı Tarım Sigortaları Geliştirilmesi (BAP-07-05-2012-001)
Yürütücü: A. Sevtap Selçuk-Kestel
Araştırmacılar: Kasırga Yıldırak
1 Şubat 2012 - 31 Aralık 2013 9.000 TL

Projenin Adı: Algebraic and Combinatorial Methods in Finite Fields, Coding Theory and Cryptography (BAP-07-05-2012-002)
Yürütücü: Ferruh Özbudak
Araştırmacılar: Oğuz Yayla, Köksal Muş, Çağdaş Çalık, Neşe Öztop Koçak, Onur Koçak, Seher Tutdere
1 Ocak 2012 - 31 Aralık 2013 12.500 TL

Projenin Adı: Eyer Noktası Doğrusal Sistemlerin Çözümü için Paralel Algoritmalar ve Bunların PDE-kısıtlı Optimizasyon Probleminde Uygulanması (BAP-07-05-2013-004)
Yürütücü: Bülent Karasözen
Araştırmacılar: Murat Manguoğlu
1 Ocak 2013 - 31 Aralık 2013 4.500 TL

Projenin Adı: Emeklilik Sistemini Belirleyen Bileşenlere ait Değişkenliğin Aktüeryal Hesaplamalara Olan Etkisinin Araştırılması (BAP-07-05-2013-002)
Yürütücü: A. Sevtap Selçuk-Kestel
Araştırmacılar: Selin Yılmaz
1 Ocak 2013 - 31 Aralık 2013 5.000 TL

Projenin Adı: Hisse Senetlerinin Fiyat Süreçlerinin Kesirli Difüzyon Süreçleri Kullanarak Parametre Tahminleri (BAP-08-11-2012-102)
Yürütücü: Yeliz Yolcu Okur
Araştırmacılar: Gerhard Wilhelm Weber, A. Sevtap Selçuk-Kestel, Ceren Vardar Acar, B. Alper İnkaya
1 Ocak 2012 - 31 Aralık 2013 29.130 TL

3.4.3. ODTÜ-BİLİMSEL ARAŞTIRMA TEZ PROJELERİ

Projenin Adı: Doğrusal Olmayan Difüzyon-Konveksiyon –Reaksiyon Denklemlerinin ve Eniyilemeli Kontrol Problemlerinin Uyarlamalı, Kesintili Galerkin Yöntemleriyle Çözümü (BAP-07-05-2013-003)
Yürütücü: Bülent Karasözen
Araştırmacılar: Tuğba Akman, Murat Uzunca
1 Ocak 2013 - 31 Aralık 2013 4.500 TL

Projenin Adı: Stochastic Hybrid Systems of Financial and Economical Processess: Identificatied, Optimized and Controlled (BAP-07-05-2013-005)
Yürütücü: Gerhard Wilhelm Weber
Araştırmacılar: Yeliz Yolcu Okur, Ayşe Özmen, Azar Karimov, Fatma Yerlikaya Özkurt, Semih Kuter
1 Ocak 2013 - 31 Aralık 2013 10.500 TL

Projenin Adı: Manyetik Potansiyel İçeren Manyeto-Konveksiyon Akışın Karşılıklı Sınır Elemanları Metodu ile Çözümü (BAP-07-05-2013-001)
Yürütücü: Münevver Tezer
Araştırmacılar: Bengisen Pekmen
1 Ocak 2013 - 31 Aralık 2013 5.000 TL

4. EĞİTİM

Enstitümüzün toplam öğrenci sayısı 192 olup, 2013 yılında 55 öğrenci kayıt yaptırmış, 2012-2013 II. ve 2013-2014 I. dönemlerinde 9 tezli, 9 tezsiz ve 14 doktora olmak üzere toplam 32 öğrenci mezun olmuştur.

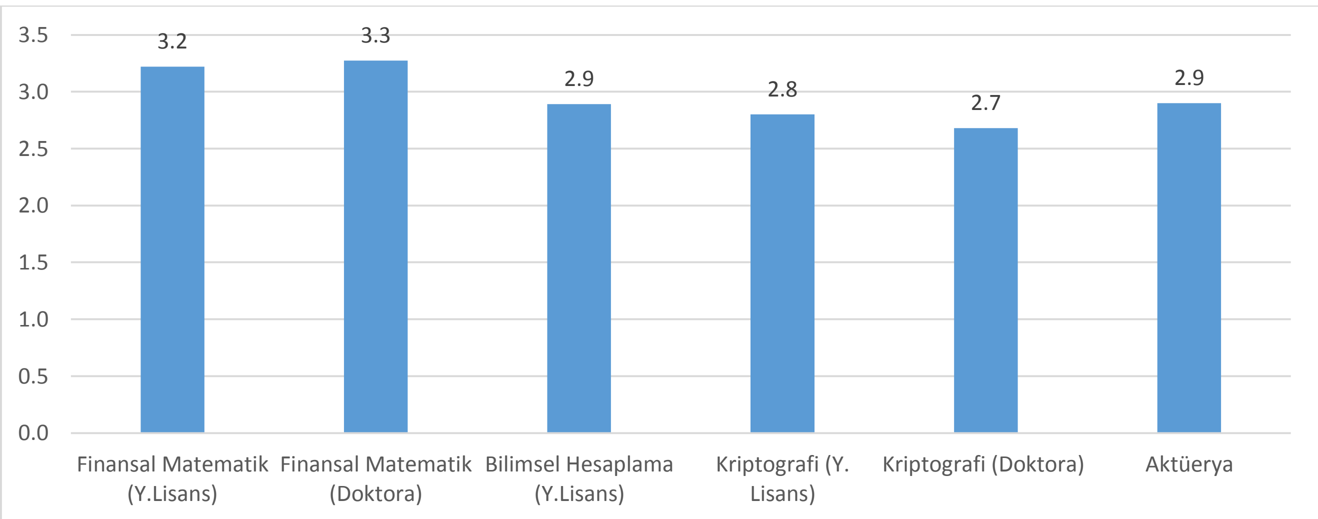
BAŞVURULAR

	2013-2014		
	BAŞVURU	**KABUL (%)**	**KAYIT (%)**
Aktüerya Bilimleri	20	18 (90)	11 (55)
Bilimsel Hesaplama	9	6 (67)	4 (44)
Finansal Matematik	56	38 (68)	29 (52)
Kriptografi	33	22 (67)	11 (33)
Toplam	**118**	**84(71)**	**55(47)**

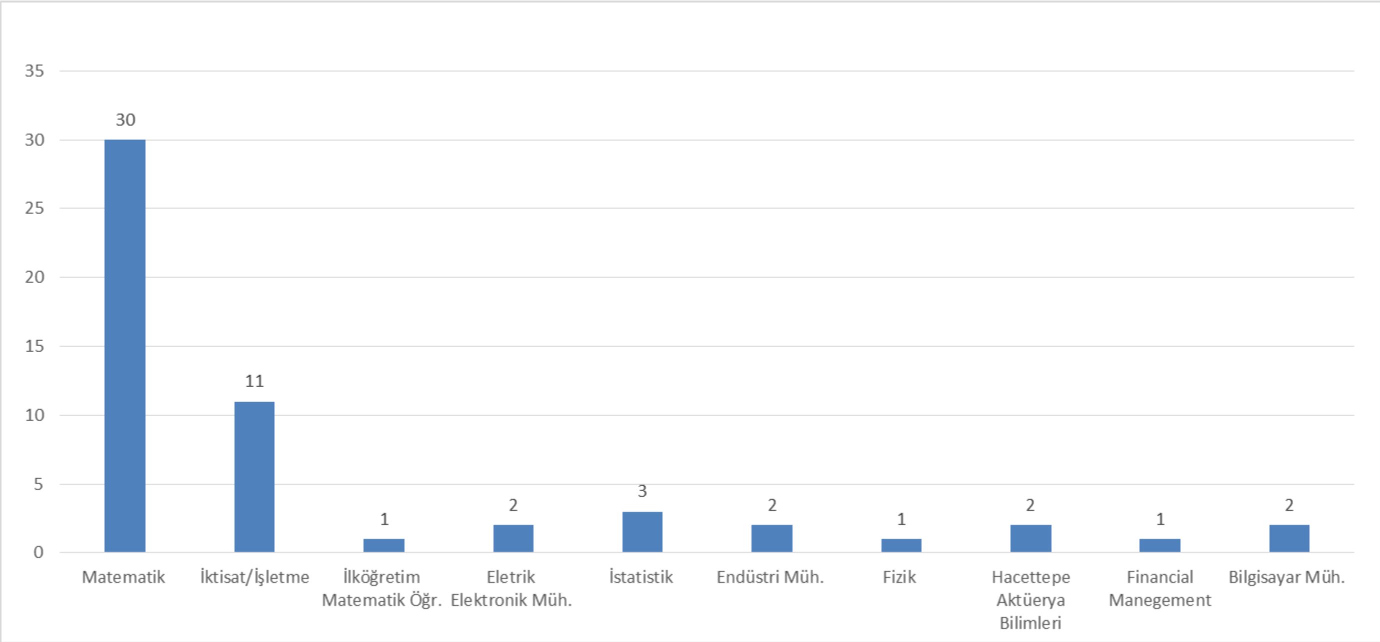
ENSTİTÜMÜZ ÖĞRENCİLERİNİN PROGRAMLARA GÖRE DAĞILIMI

Anabilim Dalı	**Yüksek Lisans**	**Doktora**
Aktüerya Bilimleri (24)	24	--
Bilimsel Hesaplama (24)	12	12
Finansal Matematik (80)	57	23
Kriptografi (64)	28	36
Toplam (192)	121	71

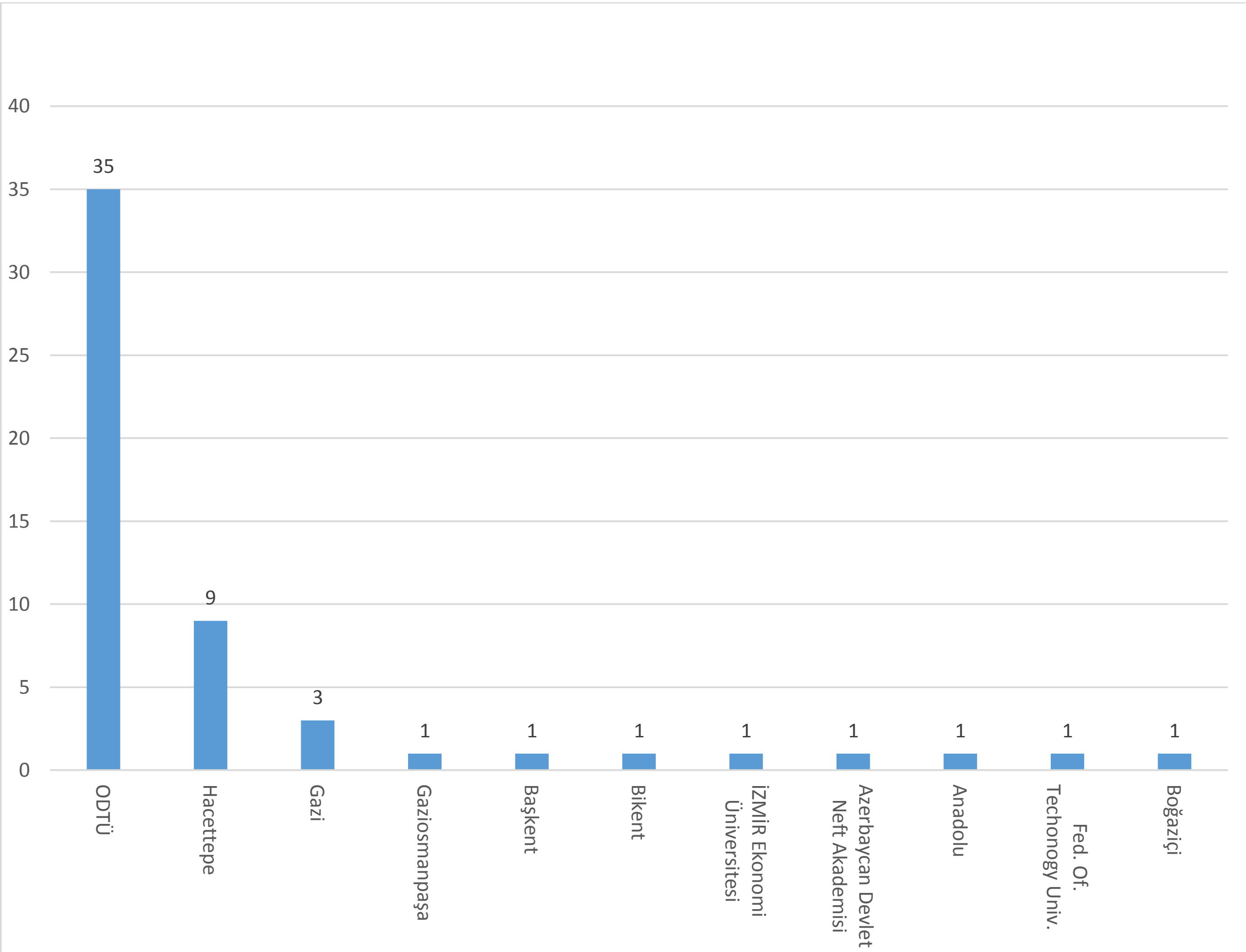
KAYIT OLAN ÖĞRENCİLERİN CGPA ORTALAMALARI



KAYIT OLAN ÖĞRENCİLERİN MEZUN OLDUKLARI BÖLÜMLERE GÖRE DAĞILIMI



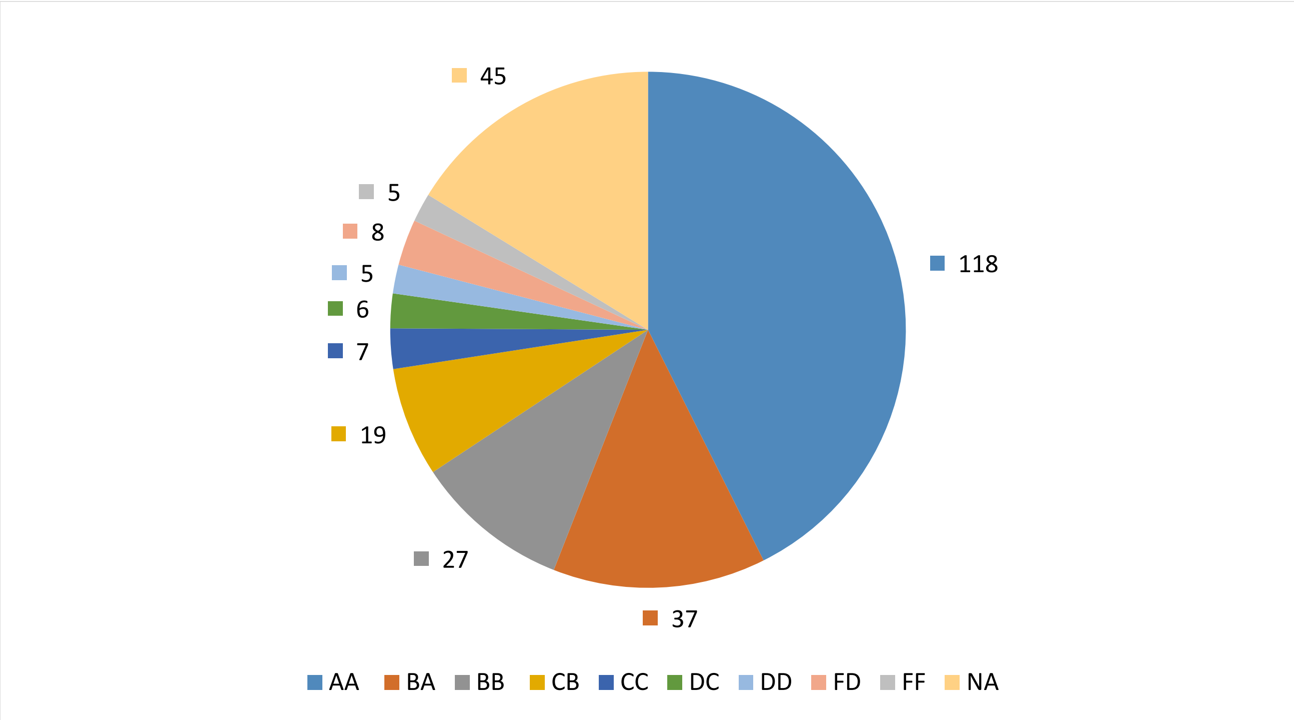
KAYIT OLAN ÖĞRENCİLERİN MEZUN OLDUKLARI ÜNİVERSİTELERE GÖRE DAĞILIMI



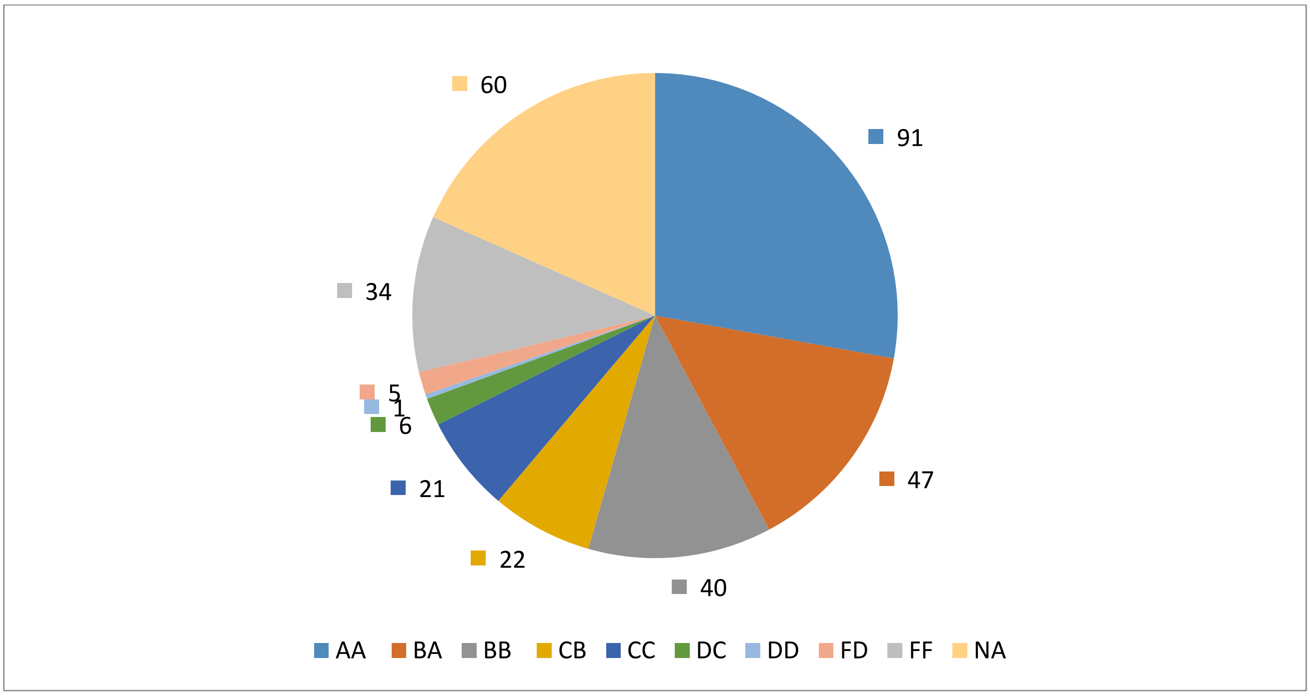
UME DERSLERİNİ ALAN UME DIŞI ÖĞRENCİLERİN BÖLÜMLERE GÖRE DAĞILIMI

2012-2013 II. dönemde, toplam 277 öğrenci ders almış olup, bunların % 25.2'si Enstitü dışındaki bölümlerdendir. Benzer şekilde 2013-2014 I. dönemde, ders alan öğrenci sayısı 327 olup, bunun % 29.6'sı Enstitü dışındandır.

DÖNEMSEL VERİLEN TOPLAM NOT SAYISI

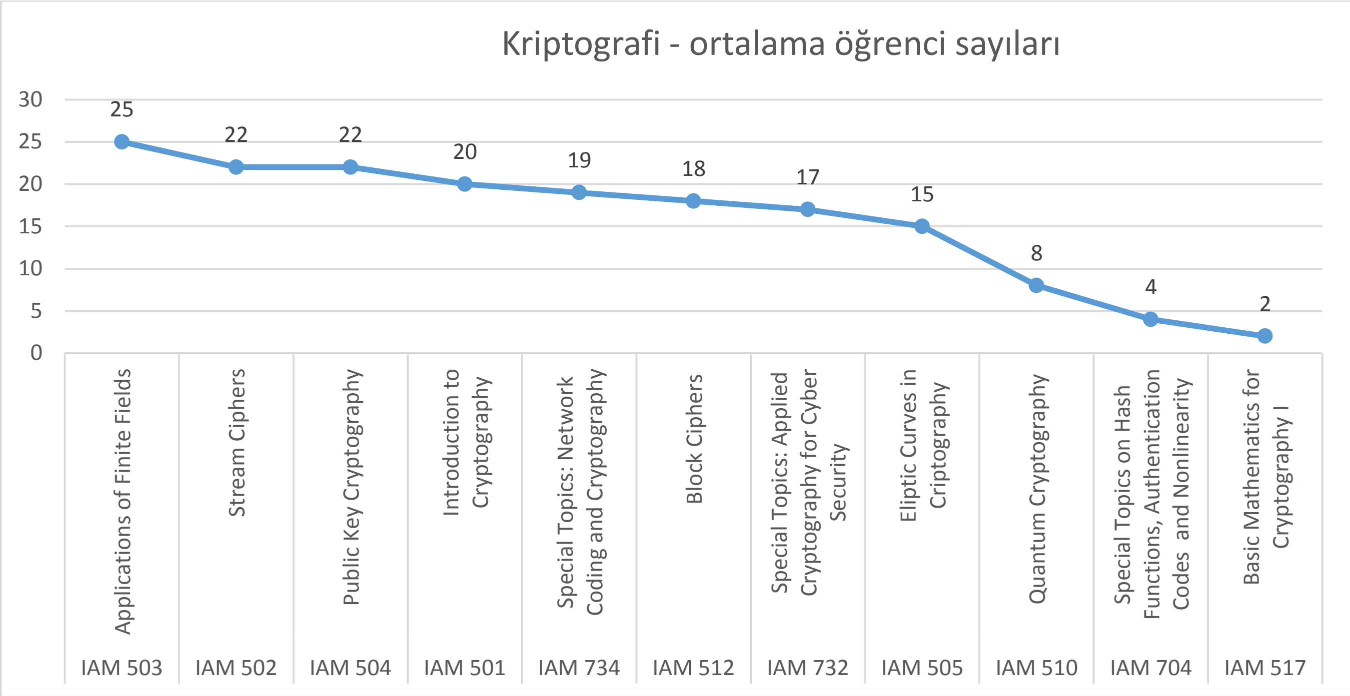


2012-2013 II. Dönem



2013-2014 I. Dönem

PROGRAMLARA GÖRE DERSLERDEKİ ORTALAMA ÖĞRENCİ SAYILARI



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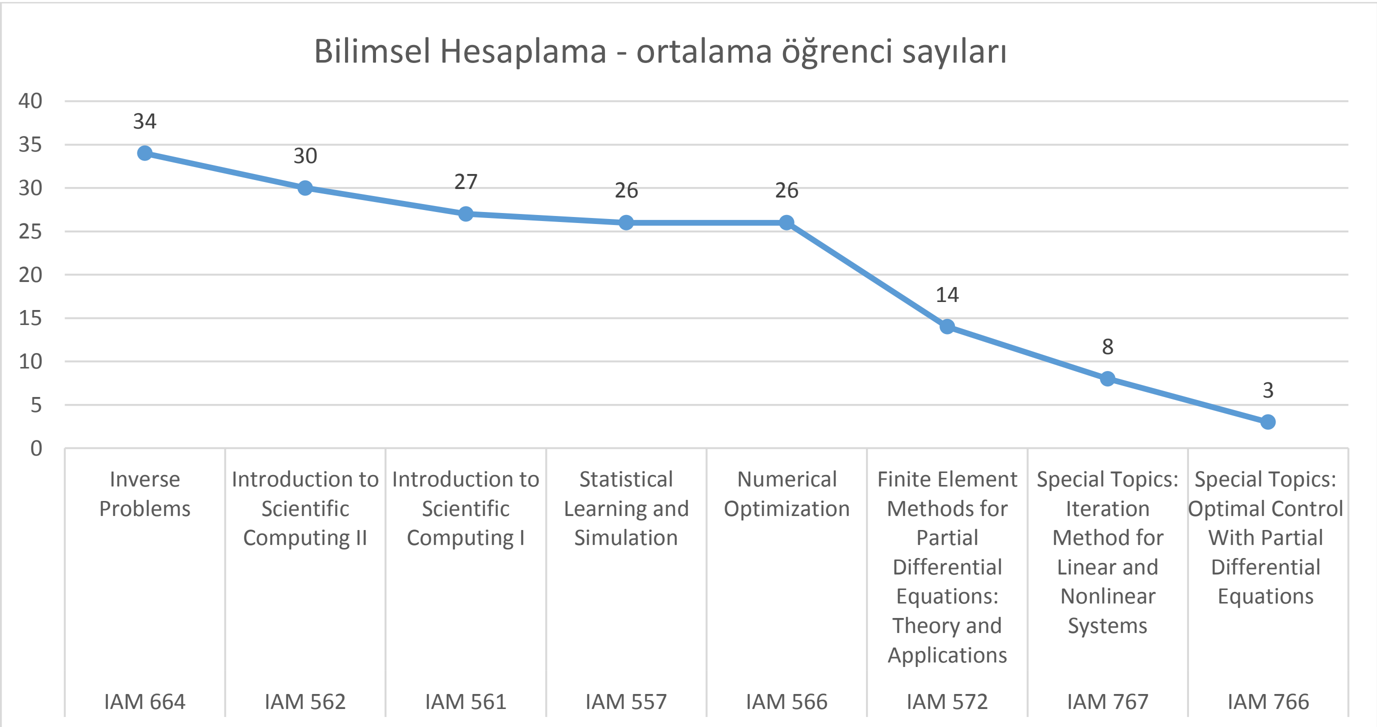
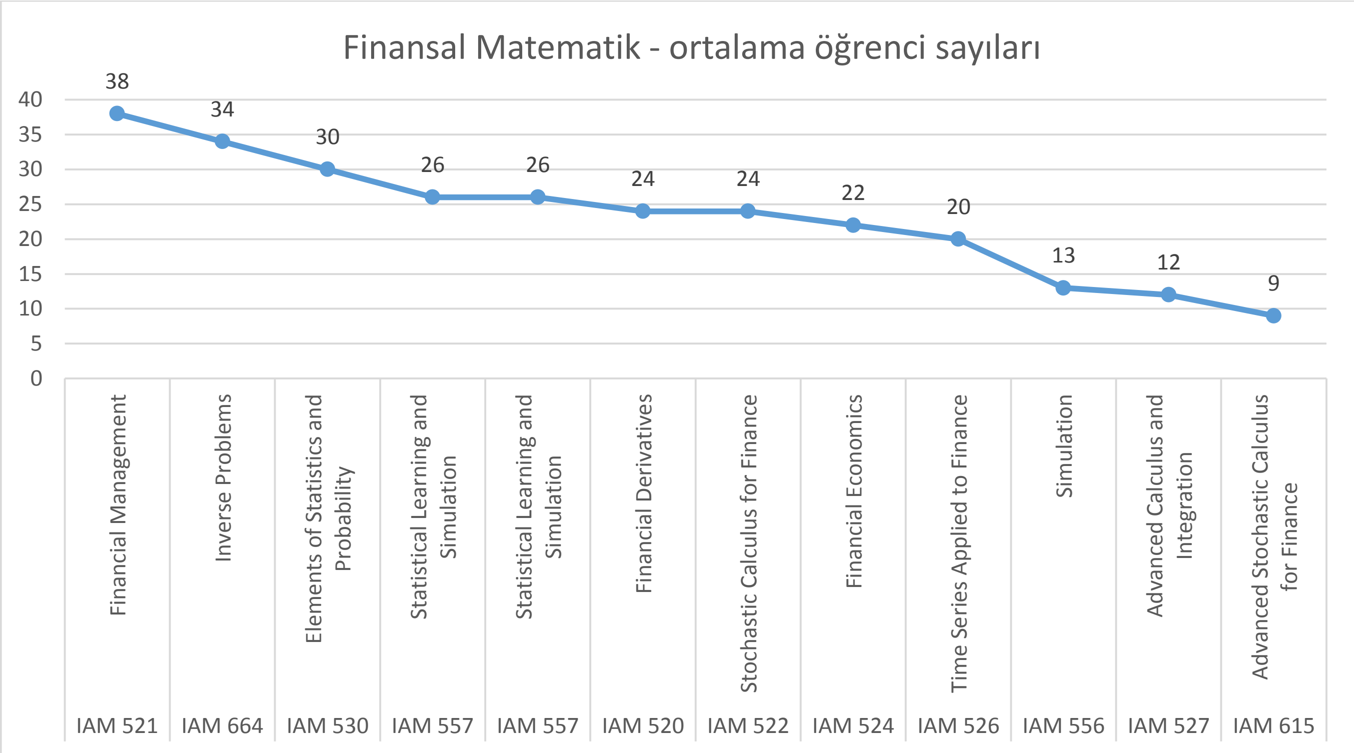
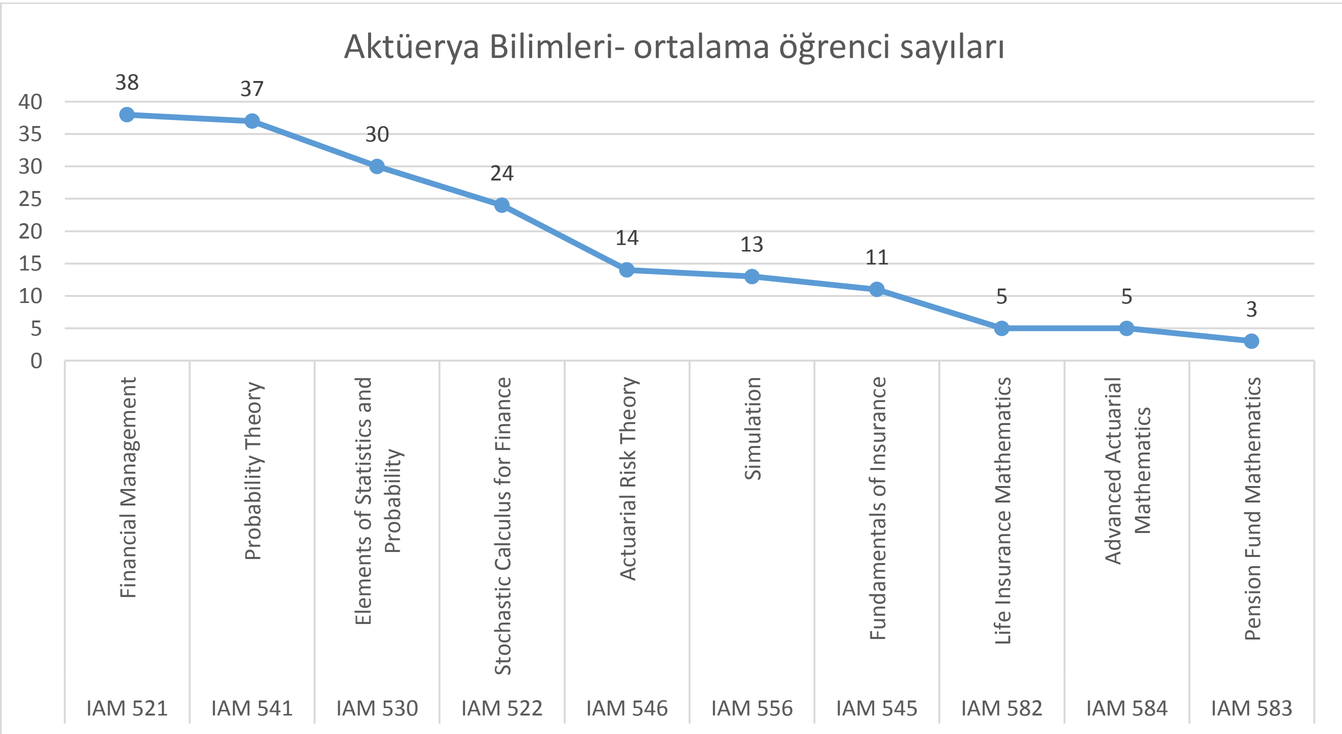



Finansal Matematik - ortalama öğrenci sayıları
38
34
30
26
26
24
24
22
20
13
12
9
40
35
30
25
20
15
10
5
0
Financial Management
IAM 521
Inverse Problems
IAM 664
Elements of Statistics and Probability
IAM 530
Statistical Learning and Simulation
IAM 557
Statistical Learning and Simulation
IAM 557
Financial Derivatives
IAM 520
Stochastic Calculus for Finance
IAM 522
Financial Economics
IAM 524
Time Series Applied to Finance
IAM 526
Simulation
IAM 556
Advanced Calculus and Integration
IAM 527
Advanced Stochastic Calculus for Finance
IAM 615


Aktüerya Bilimleri- ortalama öğrenci sayıları
38
37
30
24
14
13
11
5
5
3
40
35
30
25
20
15
10
5
0
Financial Management
IAM 521
Probability Theory
IAM 541
Elements of Statistics and Probability
IAM 530
Stochastic Calculus for Finance
IAM 522
Actuarial Risk Theory
IAM 546
Simulation
IAM 556
Fundamentals of Insurance
IAM 545
Life Insurance Mathematics
IAM 582
Advanced Actuarial Mathematics
IAM 584
Pension Fund Mathematics
IAM 583

4.1. DOKTORA MEZUNLARI

Bilal Alam	Hfe Based Multi-Variate Quadratic Cryptosystems And Dembowski Ostrom Polynomials	**Ferruh Özbudak** **Oğuz Yayla**	**Kriptografi**
Muhammad Ashraf	On the Trace Based Public Key Cryptosystems Over Finite Fields	**Ersan Akyıldız** **B. Barış Kırlar**	**Kriptografi**
Atilla Bektaş	On Secure Electronic Auction Process of Government Domestic Debt Securities in Turkey	**Ersan Akyıldız** **Mehmet Sabır Kiraz**	**Kriptografi**
Çağdaş Çalık	Computing Cryptographic Properties of Boolean Functions From The Algebraic Normal Form Representation	**Ali Doğanaksoy**	**Kriptografi**
Tamer Ergun	Security Analysis of Electronic Signature Applications and Test Suite Study	**Ferruh Özbudak**	**Kriptografi**
Nurgül Gökgöz	Modeling Stochastic Hybrid Systems With Memory With An Application To Immune Response Of Cancer	**Hakan Öktem** **Carla Piazza**	**Bilimsel Hesaplama**
Erkan Kalaycı	A Multi-Period Stochastic Portfolio Optimization and Hedging Model Applied for the Aviation Sector in EU ETS	**Esma Gaygısız** **G. Wilhelm Weber**	**Finansal Matematik**
Mansoor Ahmed Khan	Construction of Cryptographically Strong Boolean Functions Well Suited for Symmetric Cryptosystems	**Ferruh Özbudak**	**Kriptografi**
Efsun Kürüm	Early-Warning on Stock Market Bubbles Via Methods of Optimization, Inverse Problems and Clustering	**G. Wilhelm Weber** **Cem İyigün**	**Finansal Matematik**
Canan Özel	Results On The Multiplication In Finite Fields Of Characteristic Three Using Modified Polynomial Representation And Normal Elements In Binary Fields	**Ferruh Özbudak** **Sedat Akleylek**	**Kriptografi**
Muhammad Riaz Sial	FBGA Based Cryptography Computation Platform and the Basis Conversion in composite Finite Fields	**Ersan Akyıldız** **H. Murat Yıldırım**	**Kriptografi**
Önder Türk	Fem Solutions Of Magnetohydrodynamic And Biomagnetic Fluid Flows in Channels	**Münevver Tezer**	**Bilimsel Hesaplama**
Erdener Uyan	Analysis of Boolean Functions with Respect to Walsh Spectrum	**Ali Doğanaksoy**	**Kriptografi**
Fatma Yerlikaya-Özkurt	Refinements, Extensions and Modern Applications of CMARS by Advanced Methods of Applied Mathematics and Statistics	**G. Wilhelm Weber**	**Bilimsel Hesaplama**

4.2. YÜKSEK LİSANS MEZUNLARI

Saad Ahmed	Cloud Computing Presentation	**Ersan Akyıldız**	**Kriptografi**
Ezgi Barutçu	External Debt Sustainability in Turkey Using Arima Model	**Ceylan Yozgatlıgil**	**Finansal Matematik**
Ezgi Çalışkan	Statıstıcal Analysıs of Automobıle Insurance ın Turkey	**A.Sevtap Selçuk-Kestel**	**Aktüerya Bilimleri**
Pınar Çomak	Construction of quasi-cyclic self-dual codes	**Ferruh Özbudak** **Jon Lark Kim**	**Kriptografi**
Simge Güneri	Ensemble Clustering of Time Series Data	**G. Wilhem Weber**	**Bilimsel Hesaplama**
Eylül Kanıcı	Modern Cryptography For Electronic Voting	**Mehmet Sabır Kiraz**	**Kriptografi**
G. Görkem Küçüközmen	The Effects of Stock Recommendations of Financial Intermediaries to Istanbul Stock Exchange for 2003-2010	**Seza Danışoğlu**	**Finansal Matematik**
Sinem Kozpınar	Pricing American Options With Numerical Applications	**Yeliz Yolcu Okur** **Nuray Güner**	**Finansal Matematik**
Alev Meral	Optimal Portfolio Strategies Under Various Risk Measures	**Ömür Uğur**	**Finansal Matematik**
Hanife Sevda Nalbant	Backward Stochastic Differential Equations and Their Applications to Stochastic Control Problems	**Yeliz Yolcu Okur** **Azize Hayfavi**	**Finansal Matematik**
Hacer Öz	Advances and Applıcatıons of Stochastıc Ito-Taylor Approxımatıon and Change of Time Method: in the Financial Sector	**G. Wilhelm Weber**	**Finansal Matematik**
Asena Özdemir	Demand, Supply and Partial Equilibrium Analysis of Turkish Electricity Energy Pricing	**A. Sevtap Selçuk-Kestel** **Ş. Kasırga Yıldırak**	**Aktüerya Bilimleri**
Seçil Özkan	Internet Votıng And Homomorphıc Encryptıon	**Mehmet Sabır Kiraz**	**Kriptografi**
Elif Tokatlı	Hedging BIST Warrants Under Volatility Smile Effect	**Nuray Güner**	**Finansal Matematik**
Ayça Yetere	Consensus Clustering Of Time Series Data	**İnci Batmaz** **Cem İyigün**	**Bilimsel Hesaplama**
Handan Yılmaz	Adaptation of the Conventional Voting Systems to Modern Era: Prêt à Voter	**Mehmet Sabır Kiraz**	**Kriptografi**
Cansu İncegül Yücetürk	Backward Stochastic Differential Equations and Feynman-Kac Formula in the Presence of Jump Processes	**Yeliz Yolcu Okur**	**Finansal Matematik**

4.3. ÖDÜLLER

- **Doç. Dr. Murat Manguoğlu**, TÜBA Üstün Başarılı Genç Bilim İnsanlarını Ödüllendirme Programı (GEBİP) Ödülü
- **Dr. Hamdullah Yücel** (Bilimsel Hesaplama) ODTÜ Yılın Tezi Ödülü
- **Dr. Serkan Zeytun** (Finansal Matematik) ODTÜ Yılın Tezi Ödülü
- **Mete Tepe** (Finansal Matematik) ODTÜ Yılın Tezi Ödülü
- **Tuğba Akman** (Bilimsel Hesaplama) Doktora Ders Performans Ödülü
- **Simge Güneri** (Bilimsel Hesaplama) Yüksek Lisans Ders Performans Ödülü
- **Fuad Hamidli** (Kriptografi) Doktora Ders Performans Ödülü

5. SOCIETY OF INDUSTRIAL AND APPLIED MATHEMATICS (SIAM) ÖĞRENCİ TOPLULUĞU

METU SIAM Student Chapter yarışması sonucu birinci seçilen Endüstri Mühendisliği Bölümü öğrencisi Ali Cem Randa Temmuz 2013'de Roma'da düzenlenen EURO-INFORMS toplantısında Topluluğu temsil etmiştir. SIAM öğrenci topluluğu üniversitemiz öğrenci toplulukları arasına katılmıştır.

EKLER

EK1 – ARAŞTIRMA

ULUSLARARASI HAKEMLİ KONFERANS SUNUMLARI

6th International Conference on Information Security and Cryptology, ODTÜ, 20-21 Eylül 2013

- Alam, B., and Yayla, O. Recent Attacks against HFE/Multi-HFE MQ Cryptosystems and Connection with Ore's p-Polynomial Decomposition, 192-198.
- Akyıldız, E., Çalık, Ç. Özarar, M., Tok, M., and Yayla, O. RSA Kriptosistemi Parametreleri için Güvenlik Testi Yazılımı, 124-127.
- Balıkçıoğlu, P., and Diker Yücel, M. Perido Analysis of Pseudorandom Vector Sequences With Dynamical Polynomial Systems, 132-136.
- Ergun, T., Özbudak, F., and Topcan, F. Test Suite Study for Security Analysis of Digital Signature Applications, 15-20
- Sial, R., and Akyıldız, E. Storage Free Basis Conversion over Composite Finite Fields of odd Characteristics, 199-204.
- Sinak, A., Sabır Kiraz, M., Özkan, S. and Yıldırım. H. A Secure Internet Voting Protocol Based On Homomorphic Encrption, 142-148.
- Taşkın, H. K. and Demircioğlu, M. Off-The-Record Communication with Location Hiding, 128-131.
- Uyan, E., and Doğanaksoy, A. Distiribution of Boolean of 6 Variables According to the Frequency of Walsh Coefficients, 120-123.

International Conference On Preconditioning Techniques For Scientific And Industrial Applications, 19-21 June 2013, Oxford

- Tarı, Ö., and Manguoğlu, M. Revealing the Saddle Point Structure Using the Largest Eigenvector of the Laplacian

EURO INFORMS, 26TH European Conference on Operational Research, Rome 1-4 July, 2013

- Akteke-Öztürk, B., Weber, G.-W. and Köksal, G. Robust Optimization of Generalized Desirability Functions
- Defterli, Ö., and Weber, G.-W. Higher-Order Numerical Methods for the Discrete Dynamics and Anticipation of Genetic Regulatory Systems
- Evcin, C., and Ugur, Ö. Analysis of threshold dynamics of epidemic models in a periodic environment
- Karimov, A., Kılıç, E., and Weber, G.-W. Stochastic Hybrid Systems in Portfolio Optimization: Parameter Estimation and Simulation
- Kuter, S., Weber, G.-W., Akyürek, Z., and Özmen, A. Incorporating the modern techniques of continuous optimization within spatial analysis
- Özmen, A., and Weber, G.-W. Evaluating the Performance of Robust Multivariate Adaptive Regression Splines (RMARS) by Simulation and an Application in Finance under Polyhedral Uncertainty
- Temoçin, B.Z., and Selçuk-Kestel, A. S. Pension Fund Management for Turkish Individual Retirement System
- Weber, G.-W., Temoçin, B.Z., Karimov, A., and Kılıç, E. New Advances in the Financial Sector and Their Impacts in Economics and Sustainability
- Yerlikaya Özkurt, F., Aşkan, A., and Weber, G.-W. A Novel Non-parametric Adaptive Regression Methodology for Ground Motion Prediction

- Yıldırım, M.H. , and Weber, G.-W. A New Robust Electricity Market Model under Uncertainties
- Yılmaz, B., İnkaya, A., and Yolcu Okur, Y. Application of the Malliavin Calculus for Computation of Greeks in Black-Scholes and Stochastic Volatility Models
- Yolcu Okur, Y. A Survey on the Analysis of Financial Markets with Asymmetric Information

25th. Biennial Numerical Analysis Conference, 25-28 June, University of Strathclyde, Glasgow

- Uzunca, M., and Karasözen, B. Adaptive Discontinuous Galerkin Methods For Nonlinear Diffusion-Convection-Reaction Models

European Conference on Computational Optimization, 16-19 Jun, Chemnitz 2013

- Akman, T., and Karasözen, B. Space-Time Discontinuous Galerkin Solution of Convection Dominated Optimal Control Problems

Savunma Bakanlığı, 2 July,

- Yayla, O.

Üniversite Sanayi İşbirliği Proje Pazarı, 10 July, Teknokent,

- Demircioğlu, M.

Game Theory and Management, The Seventh International Conference, GTM2013, June 26-28, 2013, St. Petersburg, Russia

- Palancı, O. Alparslan Gök, S.Z., and Weber, G.-W. Cooperative interval games: forest situations with interval data, pp. 180-181.
- Palancı, O. Alparslan Gök, S.Z., and Weber, G.-W. Forest situations and cost monotonic solutions, pp. 351-361.

ENUMATH (European Numerical Mathematics and Advanced Applications) 2012 Conference, 26-30 August 2013, Lozan, İsviçre

- Akman, T., and Karasözen, B. Reduced Order Optimal Control of Diffusion-Convection-Reaction Equation Using Proper Orthogonal Decomposition, pp. 19
- Karasözen, B., and Uzunca, M. Adaptive Discontinuous Galerkin Methods for nonlinear Diffusion-Convection-Reaction Models, pp. 55
- Pekmen, B., and Tezer, M. Steady Mixed Convection in a Heated Lid-Driven Square Cavity Filled with a Fluid-Saturated Porous Medium, pp. 296-297.
- Tezer, M., and Pekmen, B. DRBEM Solution of Full MHD and Temperature Equations in a Lid-driven Cavity, pp. 376-377.

8th International Summer School, AACIMP-2013, National University of Technology of the Ukraine, Kyiv, Ukraine, August 1-17, 2013:

- Weber, G.-W., Defterli, Ö. Özdamar, L. Alparslan-Gök, S.Z. Chandra Sekhar Pedamallu, Temoçin, B.Z. Karimov A., Can, C.E. and Kürüm, E. Predicting Dynamics Under Various Assumptions on Time and Uncertainty - in Education, Life Sciences, Finance
- Weber, G.-W., Yerlikaya Özkurt, F., Kılıç, E., Temocin, B.Z., Karimov, A., Yolcu Okur, Y., Vardar-Acar, C., Algümüş, B., Kropat, S., Kürüm, E., and Özmen, A. Some Advances in Modeling and Optimization of Stochastic Dynamics with Fractional Brownian Motion
- Yıldırım, M.H., Türker-Bayrak, Ö., and Weber, G.-W. New Hybrid Model to Forecast Day-Ahead Electricity Prices: Wavelet-MARS

InteriOR 2013, Medan, Indonesia, August 25-28, 2013:

- Kuter, S., Weber, G.-W., and Özmen, A. Regional Atmospheric Correction by Conic Multivariate Adaptive Regression Splines
- Weber, G.-W., Kılıç, E., Yerlikaya Özkurt, F., Temocin, B.Z., Karimov, A., Yolcu Okur, Y., Vardar-Acar, C., Algümüş, B., Kropat, S., Kürüm, E., Özmen, A., and Selçuk-Kestel, A.S. Advances in OR, Optimization and Control of Stochastic Dynamics - Applications in Finance, Economics, Biology and Environment
- Weber, G.-W., and Özmen, A. Robust Counterparts of MARS and CMARS in Regression and Classification: RMARS and RCMARS,

12th international workshop on dynamical systems and applications (IWDSA 2013) Atılım University, Ankara, 12-15 August 2013:

- Evcin, C., and Uğur, Ö. Threshold dynamics of avian-human influenza in a periodic environment.

SciCADE 2013, International Conference on Scientific Computation and Differential Equations, Valladolid (Spain), September 16-20 Eylül, 2013.

- Sarıaydın, A., Karasözen B. , and Uzunca, M. Structure Preserving Discontinuous Galerkin methods in space and time for Allen-Cahn equation

Innovations in Stochastic Analysis and Mathematical Finance, The Norwegian School of Economics, Bergen, Norveç 24-26 Eylül 2013.

- İnkaya, A. Analysis of Stochastic Volatility Models using the Malliavin Calculus
- Yolcu Okur, Y. Forward Backward Stochastic Differential Equations and Feyman-Kac Formula in the Presence of Jump Processes

OR 2013 Conference - the International Conference on Operations Research, Rotterdam, the Netherlands, September 3-6, 2013

- Yıldırım, M.-H., and Weber, G.-W. A Stochastic-Global Optimization Approach to Electricity Market Model,
- Weber, G.-W., Kılıç, E., Yolcu Okur, Y., Yerlikaya Özkurt, F., Karimov A., and Aydın, N.S. Advances in Modeling, Optimization and Control of Stochastic Dynamics - Applications in Finance.

Derivatives 2013: The State of the Art 40 Years after the Black-Scholes-Merton Model, New York-Amerika, 11 October 2013

- Güner, N.

Uluslararası 8. İstatistik Konferansı, Antalya, 27-29 October 2013

- Akat, F., and Selçuk-Kestel, A. S. Markov Ageing approach in Turkish Mortality estimation, International 8th Statistics Congress, 254-255.
- Erdem, O.N., and Selçuk-Kestel, A.S. The impact of replacement migration policyon demographic indicators and labor force in Turkey, International 8th Statistics Congress, 162-163.
- Selçuk-Kestel, A.S., and Akman, O. A predictive density approach to evaluate the morbidity based on time between claims, Symposium on Biomathematics and Ecology: Education and Research, Marymount University, Arlington VA, USA, 11-13 Oct. 2013.
- Ocak G., and Selçuk-Kestel, A.S. An early warning model for the insurance companies in Turkey, The International 8th Statistics Congress, 252-253.
- Özdemir, A., Ünlü, D., Selçuk-Kestel, A.S., and Yıldırak, K. Turkish Electrıcıty Price Behavior Based On Some Economıc Indicators: An Econometric Approach
- Ünlü, D., and Selçuk-Kestel, A.S. The Linkage between education, economic growth and Co2 Emission: A multivariate analysis on Turkey, The International 8th Statistics Congress, 296-297.
- Yılmaz, B., İnkaya, A., and Yolcu Okur, Y. Comparison of Different Methods to Compute the Greeks, International 8th Statistics Congress,Extended Abstract Book pp.248-249.

Decomposition Methods (MuS-TDD) May 6 –8, 2013 Heidelberg University

- Akman, T., and Karasözen, B. Optimal Control of Diffusion-Convection-Reaction Equations Using Space-Time Discontinuous Galerkin Methods, pp. 21.

International Workshop on Regime-Switching Models in Finance: Statistics and Optimization, Kaiserslautern, Germany, 22nd-23rd November 2013

- Temoçin, B.Z., Selçuk-Kestel, A.S., and Yolcu Okur Y.

Fraunhofer ITWM, Kaiserslautern, Germany - 25.11.2013

- Temoçin, B. Z. Pension Fund Management for Turkish Individual Retirement System

The 6th International Conference on Security of Information and Networks, November 26-28, Aksaray, 2013.

- Tezcan, C. Improbable Differential Cryptanalysis, SIN 2013.

Algebraic curves over finite fields, Linz, Austria, November 11-15, 2013

- Özbudak, F., and Sınak, A. Special Semester on Applications of Algebra and Number Theory

ICOTA 2013 - The 9th International Conference on Optimization: Techniques and Applications (ICOTA 9), Taipei, Taiwan, December 13-15, 2013.

- Yılmaz, F., Öz H., and Weber, G.-W. Approximation and Numerical Solution of Optimal Stochastic Control Problems for Multi-dimensional Stochastic Differential Equations by Using Ito-Taylor Method with Malliavin Calculus.

Diğer Konferans Sunumları

- Belton, V., Bedford, T., and Weber G.-W. EURO 2015, Glasgow - Scotland – UK.
- Çalık, Ç. ODTÜ Uygulamalı Matematik Enstitüsü - ASELSAN Kriptografi Projeleri, Üniversite Sanayi İşbirliği - Başarılı Uygulamalar Çalıştayı, 9-10 Ocak 2013, ODTÜ Kültür ve Kongre Merkezi.
- Fernandez, E., Nickel, S., and Weber G.-W. IFORS Barcelona 2014 - The Art of Modeling, 13th - 18th July.

Special Issues:

- Martello, S., Weber G.-W., and Kasımbeyli, R. An overview of advances in combinatorial optimization and related topics, Optimization 62, 10 (2013), special issue of at the occasion of ECCO XXV Conference, Antalya, Turkey, April 26-28, 2012.
- Sezer, A.D., and Weber, G.W. Optimization Methods in Mathematical Finance, special issue Optimization 62, 11 (2013).

PROGRAM/BİLİMSEL KOMİTESİNDE BULUNULAN ÇALIŞTAY/SEMPOZYUMLAR

- International Conference on Operations Research and Enterprise Systems (ICORES 2013), Barcelona, Spain, February 16-18, 2013 (member of International PC).
- International Istanbul Finance Congress 2013 (IIFC2013), Kadir Has University, Istanbul, Turkey, May 30-31, 2013 (member of Scientific Committee).
- 2nd Mediterranean Conference on Embedded Computing (MECO), Budva, Montenegro June 16-20, 2013 (member of PC).
- EUROPT 2013 - Meeting of the Continuous Optimization Group of EURO, Florence, Italy, June 26-28, 2013 (member of PC).
- Joint ICORD / EWG ORD workshop OR: Addressing Issues of Development, Rome, Italy, June 27-28, 2013 (member of PC).
- EURO-INFORMS MMXIII, 26th European Conference on Operational Research, Rome, Italy, July 1-4, 2013 (member of PC).
- The Eighth International Multi-Conference on Computing in the Global Information Technology (ICCGI 2013), Nice, France, July 21- 26, 2013, (member of Technical PC).
- IADIS European Conference Data Mining 2013, Prague, Czech Republic, July 22-24, 2013 (member of PC).
- VIII Summer School Achievements and Applications of Contemporary Informatics, Mathematics and Physics (AACIMP-2013) Kyiv Polytechnic Institute in Kiev, Ukraine, August 1-17, 2013 (member of Advisory Board/PC).
- The 2nd International Conference on Industrial Design and Mechanics Power (ICIDMP2013), Nanjing, China, August 24-25, 2013 (member of Technical PC).
- The Seventh Global Conference on Power Control & Optimization (PCO2013), Prague, Czech Republic, August 25-27, 2013 (member of Steering Committee).
- INTERIOR (International Conference on Operational Research), Medan, Indonesia, August 25-28, 2013 (member of International Scientific Committee).
- 2nd International Conference on Operations Research and Enterprise Systems (ICORES 2013), Barcelona, Spain, September 16-18, 2013 (member of PC).

EK2 – SEMİNERLER

GENEL SEMİNERLER

Codes, Arithmetics and Manifolds I	Matthias Kreck	02.01.2013
Codes, Arithmetics and Manifolds II	Matthias Kreck	03.01.2013
Codes, Arithmetics and Manifolds III	Matthias Kreck	04.01.2013
Mathematical Models for Earthquake Simulations: Forward and Inverse Model Applications on North Anatolian Fault Zone	Ayşegül Askan Department of Civil Engineering METU	26.02.2013
On General Properties of Stochastic Modeling approach and Chemical Master Equation	Derya ALTINTAN Department of Mathematics Selçuk Üniversity	05.03.2013
Computing the Nonlinearity of a Boolean Function from its Algebraic Normal Form	Çağdaş Çalık Institute of Applied Mathematics METU	12.03.2013
Mean Semi-Deviation from a Target and Robust Portfolio Choice under Distribution and Mean Return Ambiguity	Mustafa C. Pınar Department of Industrial Engineering Bilkent University	19.03.2013
A Production Model with Multiple Inputs Under Carbon Emission Constraint and Stochastic Demand	Ülkü Gürler Department of Industrial Engineering Bilkent University	26.03.2013
Variable Selection in Regression using Maximal Correlation and Distance Correlation	C. Deniz Yenigün Department of Business Administration Bilkent University	02.04.2013
Economic Uncertainty and Its Measurement	Timur Hulagu T.C. Merkez Bankası	09.04.2013
Gaussian Measures and Differential Analysis in Infinite Dimensions	Uluğ Çapar	16.04.2013
Computational Methods in Nanobiotechnology	Ersin Emre Ören Department of Biomedical Engineering TOBB University of Economics and Technology	30.04.2013
Side Channel Resistant Algorithms	Koray Karabina Department of Mathematics Bilkent University	07.05.2013
Risk Capital Allocation for Linear & Non-Linear Loss Models	Uğur Karabey Department of Actuarial Sciences Hacettepe University	14.05.2013
A Stochastic R&D Competition with Lower and Upper Bounds	Pelin Gülşah Canbolat Department of Industrial Engineering Koç University	21.05.2013
Quality of Pseudo-Random Numbers and finding best generators	Fatin Sezgin Bilkent University	28.05.2013
Nonsmooth optimization models in Data Mining	Adil Bagirov Department of Science, Information Technology and EngineeringUniversity of Ballarat, Australia	24.09.2013
Optimal control problems governed by a system of convection-diffusion PDEs with nonlinear reaction terms	Hamdullah Yücel Max Planck Institute Dynamics of Complex Technical Systems, Magdeburg, Germany	01.10.2013

Plagiarism and how to avoid it	Murat Manguoğlu Department of Computer Engineering METU	08.10.2013
An Overview of Seismic Risk Analysis for Turkish Building Stock	Ahmet Yakut Department of Civil Engineering METU	22.10.2013
Deterministic Approximations to Stochastic Dynamics of Evolutionary Games	Özgür Aydoğmuş	05.11.2013
Asymptotic behaviour of random walks in random potentials: avariational approach	Atilla Yılmaz Department of Mathematics Boğaziçi University	12.11.2013
The Unbundling Process in the Turkish Electricity Sector and the Requirements of New Quantitative Methods and Applications	Erkan Kalaycı	10.12.2013
Computational Approaches to Coupled Cardiac Electromechanics Incorporating Electrical and Mechanical Dysfunctional Cases	Serdar Göktepe Department of Civil Engineering METU	17.12.2013
Product and Process Design Optimization with Multiple Responses: Analysis of Quality Loss and Desirability Functions	Gülser Köksal Department of Industrial Engineering METU	24.12.2013

FİNANSAL RİSK YÖNETİMİ GRUBU SEMİNERİ

Türkiye'de Konut Fiyatlarını Etkileyen Faktörlerin Hedonik Fiyat Modeli İle Belirlenmesi	Aslı KAYA T.C. Merkez Bankası	08.03.2013
Central Banks' Role in the Economy	Özgür Özel T.C. Merkez Bankasi	22.03.2013
Türkiye'de Sermaye Piyasaları ve Sermaye Piyasası Mevzuatına Giriş	İnci Esen Kılıçkaya Sermaye Piyasası Kurulu (SPK)	05.04.2013
Aspects of interest rate modelling	Ralf Korn TU Kaiserslautern & Fraunhofer ITWM	18.04.2013
The Collective Bauspar System	Martin Fuchs	21.10.2013
Detecting Stock Market Bubbles via Methods of Clustering and Inverse Problems	Efsun Kurum IAM, METU	20.12.2013

No	Title Abstract	Author	Date
227	Financial Bubbles	Efsun Kürüm Gerhard Wilhelm Weber Cem İyigün	Ocak, 2013
228	All-at-once Approach for Optimal Control of Unsteady Burgers Equation	Bülent Karasözen Fikrîye Yılmaz	Ocak, 2013
229	Efficient Adaptive Regression Spline Algorithms Based on Mapping Approach with a Case Study on Finance	Elçin Kartal-Koç Cem İyigün İnci Batmaz Gerhard-Wilhelm Weber	Ocak, 2013
230	Restructuring Forward Step of MARS Algorithm Using a New Knot Selection Procedure Based on a Mapping Approach	Elçin Kartal-Koç Cem İyigün	Ocak, 2013
231	Forest situations and cost monotonic solutions	O Palancı S. Z. Alparslan-Gök Gerhard-Wilhelm Weber	Ocak, 2013
232	Aggregate Codifferential Method for Nonsmooth Convex Optimization	Ali Hakan Tor A. M. Bagirov Bülent Karasözen	Ocak, 2013
233	Space-Time Discontinuous Galerkin Methods for Optimal Control Problems governed by Time Dependent Diffusion-Convection-Reaction Equations	Tuğba Akman Bülent Karasözen	Ocak, 2013
234	Efficient Message Transmission for GH-Public Key Cryptosystem	Muhammad Ashraf Barış Bülent Kırlar	Şubat, 2013
235	Distributed and Robin Boundary Control of Diffusion-Convection-Reaction Equations Using Discontinuous Galerkin (DG) Methods	Hamdullah Yücel Bülent Karasözen	Şubat, 2013
236	Estimation of Hurst Parameter of Fractional Brownian Motion Using CMARS Method	Fatma Yerlikaya Özkurt Ceren Vardar Acar Yeliz Yolcu Okur Gerhard-Wilhelm Weber	Şubat, 2013
237	Initialization Phase of the Gravitational Search Algorithm by means of Low-Discrepancy Sobol Quasi Random-Number Sequence	Okkes Tolga Altınoz Asım Egemen Yılmaz Gerhard-Wilhelm Weber	Şubat, 2013
238	RMARS: Robustification of Multivariate Adaptive Regression Spline, and an Application in Finance	Ayşe Özmen Gerhard Wilhelm Weber	Şubat, 2013
239	Ito-Taylor Expansions for Systems of Stochastic Differential Equations with Numerical Applications	F. Yilmaz H. Özadam Gerhard Wilhelm Weber	Mart, 2013
240	A Novel Non-parametric Adaptive Regression Methodology for Ground Motion Prediction	Fatma Yerlikaya Özkurt Ayşegül Askan Gerhard Wilhelm Weber	Mart, 2013
241	Optimal Pricing and Ordering Policy for Non-instantaneous Deteriorating Items under Inflation and Customer Returns	M. Ghoreishia A. Mirzazadeha Gerhard Wilhelm Weber	Mart, 2013
242	Model Order Reduction for Nonlinear Schödinger Equation	Canan Akkoyunlu Murat Uzunca Bülent Karasözen	Nisan, 2013

243	Interval obligation rules for minimum interval cost spanning tree situations	Osman Palancı S.Z. Alparslan Gök Gerhard-Wilhelm Weber	Nisan, 2013
244	A value-adding approach to reliability under preventive maintenance costs and its applications	Sadia Samar Ali Erdem Kılıç Gerhard Wilhelm Weber Rameshwar Dubey	Nisan, 2013
245	Identification of Stochastic Differential Equations by Conic Optimization of Multivariate Adaptive Regression Splines	Fatma Yerlikaya Özkurt Gerhard Wilhelm Weber	Mayıs, 2013
246	Stochastic processing time modelling in manufacturing and finance	S. Kannan S. Ali O. Nazarenko Gerhard-Wilhelm Weber	Mayıs, 2013
247	Dynamical Biological Processes on Evolutionary Networks - Dynamic Networks and Conjugation Processes in Microbiology	Selma Belen Erik Kropat Gerhard Wilhelm Weber	Ağustos, 2013
248	Dynamic programming for a Markov–switching jump-diffusion	N. Azevedo D. Pinheiro Gerhard Wilhelm Weber	Ağustos, 2013
249	Generalization by Optimization in Menger Probabilistic Normed Spaces with Application on Portfolio in Insurance	Farnaz Solatikia Gerhard-Wilhelm Weber	Ağustos, 2013
250	Fuzzy Optimization for Portfolio Selection based on Embedding Theorem in Menger Probabilistic Normed Spaces	Farnaz Solatikia Gerhard Wilhelm Weber	Ağustos, 2013
251	Minimum Relative Entropy Method: Application to Inverse Electrocardiography Problem	Önder Nazım Onak Yeşim S. Doğrusöz Gerhard Wilhelm Weber	Ağustos, 2013
252	Cooperative games under bubbly uncertainty	Osman Palancı S.Z. Alparslan Gök Gerhard-Wilhelm Weber	Eylül, 2013
253	Cooperative Grey Games and An Application on Economic Order Quantity Model	Mehmet Onur Olgun S.Z. Alparslan Gök	Ekim, 2013
254	Fuzzy Evolving Networks and Fuzzy Regression Analysis for Two-Modal Regulatory Systems – Prediction Strategies for Fuzzy Target-Environment Networks	Erik Kropat Ayşe Özmen Gerhard Wilhelm Weber Silja Meyer Nieberg Özlem Defterli	Kasım, 2013

EK3 – 2013 YILINDA YENİ AÇILAN DERSLER

Enstitümüzde 2013–2014 I. döneminde IAM 517 "Basic Mathematics for Cryptography I", IAM 527 "Advanced Calculus and Integration", IAM 615 "Advanced Stochastic Calculus for Finance" ve IAM 767 "Special Topics: Iteration Method for Linear and Nonlinear Systems" dersleri açılmıştır.

Course Title:	Basic Mathematics for Cryptography I
Course Code:	IAM 517
Credit:	(3-0)3
Instructor's Name:	Abdürrahim Yılmaz
Prerequisites:	Consent of the instructor
Content:	Basic properties of Integers, Divisibility, Primes, The fundamental theorem of arithmetic, Fermat numbers, Factorization methods, Diophantine equations, Congruences, Theorems of Fermat, Euler, Chinese Remainder and Wilson. Arithmetical functions, Primitive roots, Quadratic congruences.
Aims:	The main objective of this course is to prepare students for later studies in Cryptography Graduate Program of IAM, and also to explain some problems that are easy to ask but still unsolved and to give some ideas about why abstractions are to be made, by giving fundamental properties of integers and some algebraic preliminaries.
Suggested Textbooks:	K. H. Rosen, Elementary Number Theory and its Applications, Addison –Wesley, 1992 David M. Burton, Elementary Number Theory, The McGraw-Hill, 1998 R. Lidl and H. Niederreiter, Finite Fields, Cambridge Univ. Pres, 1997
Outline:	WEEKS 1- 6 : The Integers: Basic properties, Mathematical induction, Binomial Coefficients, Divisibility, Fibonacci numbers, Representation of integers. Prime numbers, Greatest common divisor, Euclidean algorithm, The fundamental theorem of arithmetic, Fermat numbers and factorization methods, Linear diophantine equations. WEEKS 7- 12 : Congruences : Linear congruences, The Chinese Remainder Theorem, Polynomial congruences, Hensel's lemma, Systems of linear congruences, Applications of congruences, Divisibility tests. WEEKS 13- 14 : Theorems of Fermat, Euler and Wilson. Aritmetical functions, Index aritmetic, Primitive roots,
Resources:	A. Adler and J. E. Coury, The Theory of Numbers, Jones and Bartlett Publishers, 1995

Course Title:	Advanced Calculus and Integration
Course Code:	IAM 527
Credit:	(4-2) 5
Instructor's Name:	Yeliz Yolcu Okur (yyolcu@metu.edu.tr)
Prerequisites:	Calculus
Content:	Review of linear algebra and multivariate calculus, sequences of series and functions, Riemann-Stieltjes and Lebesgue integration.
Aims:	This course aims to construct a foundation on mathematics, especially, Advanced Calculus, Linear algebra and integration. It gives the knowledge on basics to follow up courses in Financial Mathematics and Actuarial Sciences.
Learning Outcomes:	After having successfully completed the course, the students should have basic knowledge in linear algebra, multivariate calculus and integration which needed to start Financial Mathematics Master Degree Program.
Suggested Textbooks:	G. Strang, Introduction to Linear Algebra, 4th Edition, SIAM, 2009.P. Fitzpatrick, Advanced Calculus, 2nd Edition, AMS 2006.
Outline:	Linear Algebra Review (5 weeks): Matrices and linear Systems, Determinants Vector spaces and subspaces, orthogonality Linear transformations Eigenvalues and eigenvectors Multivariable Calculus Review (2 weeks): Limits, differentiation, chain Rule, Taylor's Theorem Inverse and implicit function theorems Directional derivatives and the Lagrange multipliers Sequences and Series Functions (3 weeks): Sequences and series (using metric and/or normed spaces) Sequences (and Series) of Functions Uniform convergence, continuity, differentiation and integration Integration (3 weeks): Riemann-Stieltjes integrals Bounded and monotone convergence theorems Other properties of integrals (change of variables, Fubini theorems)

Course Title:	Advanced Stochastic Calculus for Finance
Course Code:	IAM 615
Credit:	3(3-0)
Instructor's Name:	Azize Hayfavi (azizeh@metu.edu.tr)
Prerequisites:	-
Content:	Financial modelling beyond Black-Scholes Model. Stochastic processes. Building Lévy processes. Option pricing with stochastic processes: Stochastic calculus for semimartingales, change of measure, exponential Lévy processes, stochastic volatility models, pricing with stochastic volatility models. Hedging in incomplete markets, risk-neutral modeling. Integro-partial differential equations. Further topics in numerical solutions, simulation and calibration of stochastic processes.
Aims:	The current market models using Brownian Motion have difficulty in accounting for the abrupt changes of financial markets, whereas models based on Lévy processes, themselves practically a combination of Brownian motions and Poisson processes, are more incline to respond to this need. This course reconsiders almost all the models used in Financial Mathematics beyond Black-Scholes model and completes the knowledge of students who have already been initiated to models in terms of the Brownian Motion.
Suggested Textbooks:	Karatzas, I. and Shreve, S. E., Brownian Motion and Stochastic Calculus, Second Edition, Springer, 1991. Applebaum., D. Lévy Processes and Stochastic Calculus, Cambridge University Press, 2004. Cont, R. and Tankov, P., Financial Modelling with Jump Processes, Chapman & Hall/CRC Financial Mathematics Series, 2004. Kyprianou, A. E., Introductory lectures on Fluctuations of Lévy Processes with Applications, Springer, 2006. Barndorff-Nielsen, O. E. and Shiryaev, A., Change of Time and Change of Measure: Adv. Series on Stat. Science and App. Probability, World Scientific Publishing, 2010. Protter P. E., Stochastic Integration and Differential Equations, Springer, 2005.
Resources:	Matlab and Other Programming Languages

Course Title:	Special Topics: Iterative Methods for Large Scale Linear and Nonlinear Equations
Course Code:	IAM 767
Credit:	(3-0)3
Instructor's Name:	Murat Manguoğlu (manguoglu@metu.edu.tr) Bülent Karasözen (bulent@metu.edu.tr)
Prerequisites:	Basic knowledge in Scientific Computing
Content:	Iterative Solvers for linear and nonlinear systems of equations, precondtioning technics, analysis and implementation of the algorithms.
Aims:	Large scale systems of equations arising in the discretization of linear and nonlinear partial differential equations lie at the heart of many algorithms in scientific computing and require highly efficient solvers. The course will be based around understanding the mathematical principles underlying the design and the analysis of effective methods and algorithms.
Learning Outcomes:	At the end of the course students will become familiar with concepts and ideas related to theoretical basis for algorithms, assessing algorithms with respect to computational cost, conditioning of problems and stability of algorithms.
Suggested Textbooks	A. Greenbaum, Iterative Methods for Solving Linear Systems, SIAM, 1987. C. T. Kelley, Iterative Methods for Linear and Nonlinear Equations, SIAM, 1995. C. T. Kelley, Solving Nonlinear Equations with Newton's Method , SIAM, 2003. Y. Saad, Iterative Methods for Sparse Linear Systems, 2nd edition, 2007, SIAM
Outline:	Linear systems Basic concepts and stationary iterative methods Projection Methods: Minimum Residual and Steepest Descent Krylov subspace methods: Arnoldi, GMRES, Lanczos tridiagonalization and biorthgonalization, CG, BCG, QMR, and BiCGStab Preconditioning techniques Non-linear systems of equation Fixed Point Iterations Newton’s Method Damped Newton method Quasi-Newton Method
Resources:	MATLAB