

## MAT598 - THESIS STUDIES - Fen Bilimleri Enstitüsü - Matematik Ana Bilim Dalı

## General Info

## Objectives of the Course

The purpose of this course is to enable students to conduct in-depth scientific research on their thesis topic, make original contributions, and develop their skills in producing academic publications. Under the guidance of their advisor, students systematically plan their thesis, collect and analyze data, and compile the results into a scientific report. They will also gain the skills to prepare academic outputs such as articles, papers, and book chapters from the thesis.

## Course Contents

This course covers the thesis work process that the graduate student carries out one-on-one with his/her thesis advisor; clarifying the research problem, deepening the literature review, developing methods and carrying out data collection and analysis processes, preparing the thesis chapters, preparing scientific publications (articles or papers) and preparing the thesis for defense are within the scope of this course.

## Recommended or Required Reading

Existing studies such as sources, articles, theses in the literature related to the students' thesis topic.

## Planned Learning Activities and Teaching Methods

Learning activities in this course include one-on-one advising sessions with the student's thesis advisor, guided literature reading and discussions, data collection and analysis practices, preparation of interim reports, articles, or presentation drafts, writing the thesis draft and editing it according to advisor feedback, presentation and defense rehearsals, and discussions on scientific ethics and the publication process.

## Recommended Optional Programme Components

In this course, students are expected to meet one-on-one with their advisors weekly to submit a progress report and demonstrate full compliance with ethical principles in their thesis and publications. Thesis progress is progressively monitored and evaluated by the advisor throughout the course. This course, conducted in parallel with the Specialization Course, aims to focus on individual development, data analysis, and the production of results.

## Instructor's Assistants

There is no assistant instructor teaching the course.

## Presentation Of Course

Courses are conducted face-to-face, with research, presentations, discussions and questions and answers.

## Dersi Veren Öğretim Elemanları

Prof. Dr. Sezer Sorgun Assoc. Prof. Dr. Cahit Köme Assoc. Prof. Dr. Hatice Topcu Prof. Dr. Seydi Battal Gazi Karakoç Dr. Öğr. Üyesi Hayrullah Özımamoğlu Dr. Öğr. Üyesi Çağla Ramis İlgüz Dr. Öğr. Üyesi Sevda Atpınar Dr. Öğr. Üyesi İbrahim Şanlıbaba Prof. Dr. Yasin Yazlık Dr. Öğr. Üyesi Sure Köme Dr. Öğr. Üyesi Esmā Demir Çetin Prof. Dr. Mehmet Şenol Assoc. Prof. Dr. Zarife Zararsız Assoc. Prof. Dr. Samed Özkan Dr. Öğr. Üyesi Ahmet Kaya

## Program Outcomes

1. Researches the thesis topic in depth and analyzes it using scientific methods.
2. Develops and applies appropriate data collection and analysis methods.
3. Interprets and reports the results of his/her thesis in an academic manner.
4. Can produce scientific publications (articles, papers, etc.) from the thesis work.
5. Continuously improves its work in line with consultant feedback.
6. Demonstrates full compliance with academic ethical rules.

## Weekly Contents

Order	PreparationInfo	Laboratory TeachingMethods	Theoretical Practise
1	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Course Introduction and Thesis Plan Review
2	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Review of recent studies in the literature and examination of new sources
3	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Identifying/reviewing the research problem
4	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Identifying/reviewing the research problem
5	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Collection of necessary data within the scope of the thesis
6	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Collection of necessary data within the scope of the thesis
7	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Collection of necessary data within the scope of the thesis

<b>Order</b>	<b>PreparationInfo</b>	<b>Laboratory TeachingMethods</b>	<b>Theoretical Practise</b>
8	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Organizing and analyzing the collected data
9	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Organizing and analyzing the collected data
10	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Organizing and analyzing the collected data
11	Reading literature related to the thesis study	Oral presentation	Interim evaluation presentations regarding the thesis study
12	Reading literature related to the thesis study	Oral presentation	Interim evaluation presentations regarding the thesis study
13	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Making improvements based on consultant feedback on interim evaluation presentations
14	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Making improvements based on consultant feedback on interim evaluation presentations
15	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Making improvements based on consultant feedback on interim evaluation presentations
16	Making final checks of the prepared report and presentation	Oral presentation	Research Presentation and Report Submission
17	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
18	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
19	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
20	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
21	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
22	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
23	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
24	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
25	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
26	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
27	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
28	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
29	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work
30	Reading literature related to the thesis study	Face to face, Discussion, Question-Answer	Continuing the thesis work and preparations for publication related to the thesis work

## Workload

<b>Activities</b>	<b>Number</b>	<b>PLEASE SELECT TWO DISTINCT LANGUAGES</b>
Derse Katılım	30	4,00
Ders Öncesi Bireysel Çalışma	30	4,00
Ders Sonrası Bireysel Çalışma	30	4,00
Araştırma Sunumu	1	5,00
Final	1	5,00
Final Sınavı Hazırlık	30	8,00
Tartışmalı Ders	30	4,00

## Assesments

<b>Activities</b>	<b>Weight (%)</b>
Araştırma Sunumu	40,00
Final	60,00

	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18
<b>L.O. 1</b>	5	4	4	4	5	5	5	4	4	5	4		4		5		5	
<b>L.O. 2</b>	4	5	5	5	5	5	5	4	3	4	4		4		5		5	
<b>L.O. 3</b>	4	5	5	5	5	5	4	4	3	5	4		4		5		5	
<b>L.O. 4</b>	4	5	4	4	4	5	4	4	3	5	5		5		5		5	
<b>L.O. 5</b>	5	5	5	5	4	5	4	4	3	5	5		5		5		5	
<b>L.O. 6</b>	4	4	4	4	4	5	4	5	3	5	4		4		5		5	

Table :

- P.O. 1 :** Analiz, Uygulamalı matematiğin, Geometri ve Cebirin bazı alt toerileri hakkındaki temel teoremleri yeni problemlere uygulayabilir.
- P.O. 2 :** programcılığı 2
- P.O. 3 :** Matematik, fen bilimleri ve kendi dalları ile ilgili konularda yeterli alt yapıya sahiptir ve bu alanlardaki teorik ve uygulamalı bilgileri matematik problemlerin çözümleri için kullanır.
- P.O. 4 :** Bilimsel, matematiksel düşünme yeteneği kazanabilme ve ilgili alanlarda bu bilgiyi kullanabilme.
- P.O. 5 :** Bilimsel, matematiksel düşünme yeteneği kazanabilme ve ilgili alanlarda bu bilgiyi kullanabilme.
- P.O. 6 :** Temel matematiksel beceriler (problem çözme, akıl yürütme, ilişkilendirme, genelleme) ve bu becerilere dayalı yetenekler edinebilme. (Rasyonel düşünme tekniği kazandırabilme)
- P.O. 7 :** Bilim ve teknolojideki gelişmeleri izleme ve kendini sürekli yenileme becerisi kazanabilme.
- P.O. 8 :** Bilgiye erişebilme ve bu amaçla kaynak araştırması yapabilme, veri tabanlarını ve diğer bilgi kaynaklarını kullanabilme becerisine sahip olabilme.
- P.O. 9 :** Çalışma hayatında etik sorumlulukların gereklerini yerine getirebilme.
- P.O. 10 :** Bilim tarihi ve bilimsel bilginin üretimiyle ilgili bilgi edinebilme.
- P.O. 11 :** Eleştirel ve yaratıcı düşünmenin ve problem çözme becerilerinin gelişimi için uygun yöntem ve tekniklerle etkinlikler düzenleyebilme.
- P.O. 12 :** Çalışma hayatı ve sosyal yaşam ile ilgili konularda bireysel ve takım çalışmaları yapabilme.
- P.O. 13 :** Alanı ile ilgili konularda düşüncelerini ve konulara ilişkin çözüm önerilerini yazılı ve sözlü olarak aktarabilme.
- P.O. 14 :** Matematiksel bilgi birikimlerini teknolojide kullanabilme.
- P.O. 15 :** Alanındaki bilgileri izleyebilecek ve meslektaşları ile iletişim kurabilecek düzeyde bir yabancı dili geliştirebilme.
- P.O. 16 :** Gerçek dünya problemlerinde Matematiksel prensipleri uygulayabilme.
- P.O. 17 :** Farklı disiplinlerin yaklaşım ve bilgilerini Matematikte kullanabilme.
- P.O. 18 :** Matematik alanındaki bir problemi, bağımsız olarak kurgulayabilme, çözüm yöntemi geliştirebilme, çözebilme, sonuçları değerlendirebilme ve gerektiğinde uygulayabilme.
- L.O. 1 :** Tez konusunu derinlemesine araştırır ve bilimsel yöntemlerle analiz eder.
- L.O. 2 :** Uygun veri toplama ve analiz yöntemlerini geliştirip uygular.
- L.O. 3 :** Tezine ilişkin sonuçları akademik biçimde yorumlar ve raporlar.
- L.O. 4 :** Tez çalışmasından bilimsel yayın (makale, bildiri vb.) üretebilir.
- L.O. 5 :** Danışman geribildirimini doğrultusunda çalışmasını sürekli iyileştirir.
- L.O. 6 :** Akademik etik kurallarına tam uygunluk gösterir.