AGU Graduate School of Engineering & Science
Materials Science and Mechanical Engineering PhD Program

Program Records

About the Program	The AGÜ Materials Science and Mechanical Engineering PhD program aims to provide a comprehensive, interdisciplinary research perspective in both materials sciences and mechanical engineering. This graduate-level training seeks to inspire students in their respective fields to undertake groundbreaking research in materials sciences or apply mechanical engineering principles across diverse industries. Participants in the program undergo advanced education, engaging in research and development to cultivate creative and innovative thinking in science, engineering, and technology. The program emphasizes the development of responsible and ethical professionals for future careers. Conducted entirely in English, the program features a dynamic core faculty comprised of young academics who are graduates of prestigious universities worldwide. Drawing on their diverse research and work experiences, the faculty ensures the program's research quality aligns with the best institutes in Türkiye. Graduates emerge with a broad understanding and the capability to conduct R & D, equipped with theoretical and technical knowledge across various scientific and engineering fields.
Program Objectives	Develop the ability to access, analyze, and evaluate scientific research information. Cultivate the development of new ideas, complex system design, and original methods. Encourage inventive solutions and the application of materials science and mechanical engineering approaches in addressing diverse technical and societal challenges.
Qualification Awarded	Doctor of Philosophy (PhD Degree) / PhD in Materials Science and Mechanical Engineering
Length of Program & Credits	4 years, 240 ECTS (Integrated PhD Program 5 years, 300 ECTS)
Level of Qualification	Third Cycle (Doctorate) Degree; EQF-LLL Level 8, QF-EHEA Level 3
Mode of Study	Full Time
Field of Study	Graduates of the program can pursue careers in research and R & D institutions or in various industrial areas.
Admission Requirements	Applicants to the program are required to hold a bachelor's degree and master's degree diploma for the PhD program and a Bachelor's degree diploma for the integrated PhD program. Also, applicants should demonstrate proficiency in English through exams such as YDS (Foreign Language Exam), YÖKDİL (Foreign Language Exam for Higher Education Institutions), TOEFL, or the Abdullah Gül University English Proficiency Exam. Additionally, applicants must meet the Academic Personnel and Postgraduate Education Entrance Exam (ALES - Mathematical Score Type) grade requirements specified by the program. The Equivalency Table, established by the Council of Turkish Higher Education (YÖK), guides GPA conversions between the 4.00 and 100 Grading Systems. For those applying to an integrated PhD program with only a bachelor's degree, a minimum ALES Mathematical score of 80 and a GPA of at least 3.00/4.00 are prerequisites.
Recognition of Credit Mobility	Course Substitution: For course substitutions, medium of instruction of a previous course must be English, its final grade must be at least 3.00 out of 4.00 and approval of a relevant University Board is required. Lateral Transfer: Spending at least one semester at the master's program currently enrolled in, taking at least 2 credit courses and passing them with at least 3.00 out of 4.00 and approval of a relevant University Board is required.

Graduation Requirements & Regulations

PhD Program:

Successful completion of the one Compulsory course (MSME 650), six Elective courses (at least half of these elective courses must be taken from MSME program), Introduction to Scientific Research Methods and Scientific Publication Ethics (GCC 1001), and Seminar course (MSME 600); a minimum GPA of 3.00; earning 240 ECTS credits; passing the PhD qualifying exam, and approval of a dissertation proposal; at least three Thesis Monitoring Committee Report; Publication and activity requirements for taking the thesis defense exam; and successful defense of the dissertation.

Integrated PhD Program:

Successful completion of two Compulsory courses (MSME 650, AMN 501), thirteen Elective courses (at least 8 of them must be taken from MSME or AMN (Advanced Materials and Nanotechnology) programs); at least 4 out of these 8 courses must be taken from MSME program), Introduction to Scientific Research Methods and Scientific Publication Ethics (GCC 1001), and Seminar course (MSME 600); a minimum GPA of 3.00; earning 300 ECTS credits; passing the PhD qualifying exam, and approval of a dissertation proposal, at least three Thesis Monitoring Committee Report, Publication and activity requirements for taking the thesis defense exam; and successful defense of the dissertation.

Publication requirements for graduation from PhD Program or Integrated PhD Program;

* At least 1 accepted article indexed in SCI (Science Citation Index) or SCI-Expanded (Science Citation Index Expanded) journals which is derived from the student's thesis. The PhD student must be the first author or corresponding author in this paper.

* At least 1 accepted article in SCI (Science Citation Index), SCI-Expanded (Science Citation Index Expanded) or other international field indexed journals.

* The student as a first author or corresponding author must present at least two (2) oral presentations, one of which should be international.

Occupational Profiles of Graduates

The program aims to inspire students to undertake pioneering research in materials science or mechanical engineering. The program, conducted in English, requires candidates to submit an original thesis based on research or application in related fields for the PhD degree. Graduates have the opportunity to pursue post-doctoral studies at AGU or top global universities. Additionally, they are well-equipped to work in advanced technology companies both in Türkiye and worldwide.

Access to Further Studies

Program graduates can apply for the postdoctoral research programs.

Assessment & Grading Policy

Based on Abdullah Gul University Graduate Education and Examination Regulation rules.

Letter Grade	Coefficient	Score	Status
A	4,00	90-100	Pass
A-	3,67	87-89	Pass
B+	3,33	83-86	Pass
B	3,00	80-82	Pass
B-	2,67	77-79	Pass
C+	2,33	73-76	Failed
C	2,00	70-72	Failed

Information letters	Explanation
NA	Not Attended
W	Withdrawn
I	Incomplete
T	Transferred
S	Satisfactory
U	Unsatisfactory
P	In Progress

	C-	1,67	64-69	Failed	EX	Exempt
	D+	1,33	56-63	Failed	Q	PhD Qualified
	D	1,00	50-55	Failed	T	Thesis Level
	F	0,00	0-49	Failed		

Program Outcomes

PO1. Describe information by doing scientific research in the field of Materials Science and Mechanical Engineering

PO2. Use science and engineering knowledge for development of new methods in Materials Science and Mechanical Engineering.

PO3. Analyze materials by using basic knowledge on Materials Science and Mechanical Engineering.

PO4. Determine analytical modeling and experimental research.

PO5. Design the problems encountered in experimental research.

PO6. Consider scientific and ethical values during the collection and interpretation of data.

PO7. Formulate knowledge of different disciplines with the help of scientific methods, completion and implementation of scientific knowledge using data.

PO8. Show leadership ability and responsibility in disciplinary and interdisciplinary team works.

PO9. Contribute to the solution of social, scientific and ethical problems encountered in the field of Materials Science and Mechanical Engineering.

PO10. Define information about the interactions between various discipline of Materials Science and Nanotechnology

TQF-HE & Program Outcomes Coverage

	Knowledge		**Skills**	**Competences**			
	Theoretical Conceptual		Cognitive Practical	Work Independently and Take Responsibility	Learning	Communication and Social	Field Specific
P01			X	X	X	X	
PO2	X			X			X
PO3	X		X	X	X		
PO4	X			X	X		X
PO5				X	X		
PO6	X			X			X
PO7	X		X	X		X	
PO8				X		X	
PO9	X			X		X	
PO10			X			X	X

Institutional & Program Outcomes (IOs) * Coverage

	IO1	IO2	IO3	IO4	IO5	IO6	IO7
P01	X						X
PO2		X	X				
PO3	X				X		
PO4	X	X		X			
PO5			X		X	X	X
PO6		X		X			
PO7			X		X	X	X
PO8		X		X	X		
PO9	X					X	
PO10							

* Link for the AGU Institutional Student Learning Outcomes (IOs)
https://cat.agu.edu.tr/Pages/KurumsalOgrencmeCiktilari.aspx?lang=en-US

Curriculum

PhD Program in Materials Science and Mechanical Engineering Curriculum

Semester	Code	Course		T	P	C	ECTS
1st	MSME 650	Experimental Techniques in Fluid Mechanics		3	0	3	7,5
	GCC 1001	Introduction to Scientific Research Methods and Scientific Publication Ethics		3	0	3	7,5
	MSME 6XX	Elective		3	0	3	7,5
	MSME 6XX	Elective		3	0	3	7,5
		Semester Credits	**12**	**12**	**0**	**12**	**30**
2nd	MSME 6XX	Elective		3	0	3	7,5
	XXX XXX	Elective		3	0	3	7,5
	XXX XXX	Elective		3	0	3	7,5
	XXX XXX	Elective		3	0	3	7,5
		Semester Credits	**12**	**12**	**0**	**12**	**30**
3rt	MSME 600	Seminar		0	2	0	5
		Semester Credits	**0**	**0**	**2**	**0**	**180**
3rd-8th	MSME 697	PhD Special Topics		4	0	0	30
	MSME 699	PhD Thesis		0	1	0	145
		Semester Credits	**0**	**4**	**3**	**0**	**180**
		TOTAL	**24**	**28**	**3**	**24**	**240**

Curriculum Summary

%		Courses	Credit	ECTS
3,13	**YÖK/HEC Courses** GCC 1001*	1	3	7,5
18,75	**Elective** MSME 6XX, XXX XXX (other graduate programs)**	6	18	45
3,13	**Compulsory** MSME 650	1	3	7,5
75	**Thesis** MSME 600, MSME 697, MSME 699	3	0	180
100.0	**TOTAL**	**11**	**24**	**240**

* If students took the GCC 1001 course in the M.Sc., they must take another course with the same ECTS in the PhD

** At least half of these 6 elective courses must be taken from the MSME program; other elective courses can be taken with the same ECTS from other graduate programs.

The semester in which the courses will be offered is under the authority of the Program Executive Board.

Curriculum

Integrated PhD Program in Materials Science and Mechanical Engineering Curriculum

Semester	Code	Course		T	P	C	ECTS
1st	MSME 650	Experimental Techniques in Fluid Mechanics		3	0	3	7,5
	AMN 501	Materials Science and Engineering		3	0	3	7,5
	GCC 1001	Introduction to Scientific Research Methods and Scientific Publication Ethics		3	0	3	7,5
	AMN XXX	Elective		3	0	3	7,5
		Semester Credits	**12**	**12**	**0**	**12**	**30**
2nd	AMN XXX	Elective		3	0	3	7,5
	AMN XXX	Elective		3	0	3	7,5
	AMN XXX	Elective		3	0	3	7,5
	MSME 6XX	Elective		3	0	3	7,5
		Semester Credits	**12**	**12**	**0**	**12**	**30**
3rd	MSME 6XX	Elective		3	0	3	7,5
	MSME 6XX	Elective		3	0	3	7,5
	MSME 6XX	Elective		3	0	3	7,5
	XXX XXX	Elective		3	0	3	7,5
		Semester Credits	**12**	**12**	**0**	**12**	**30**
4th	XXX XXX	Elective		3	0	3	7,5
	XXX XXX	Elective		3	0	3	7,5
	XXX XXX	Elective		3	0	3	7,5
	XXX XXX	Elective		3	0	3	7,5
		Semester Credits	**12**	**12**	**0**	**12**	**30**
5th	MSME 600	Seminar		0	2	0	5
		Semester Credits	**0**	**0**	**2**	**0**	**5**
5th-10th	MSME 697	Ph.D. Special Topics		4	0	0	30
	MSME 699	Ph.D. Thesis		0	1	0	145
		Semester Credits	**0**	**4**	**1**	**0**	**175**
		TOTAL	**48**	**52**	**3**	**48**	**300**

Curriculum Summary

%		Courses	Credit	ECTS
2,5	**Research** GCC 1001	1	3	7,5
5	**Compulsory** MSME 650, AMN 501	2	6	15
32,5	**Elective** AMN XXX, MSME 6XX, XXX XXX (other graduate programs)*	13	39	97,5
60	**Dissertation** MSME 600, MSME 697, MSME 699	3	0	180
100.0	**TOTAL**	**19**	**48**	**300**

* At least 8 of these 13 elective courses must be taken from MSME or AMN (Advanced Materials and Nanotechnology) programs); at least 4 out of these 8 courses must be taken from MSME program; other elective courses can be taken with the same ECTS from other graduate programs.

The semester in which the courses will be offered is under the authority of the Program Executive Board.