



Program Information Form

Program Name	Ph.D. Program in Geomatic Engineering Remote Sensing and GIS
Academic Unit	Department of Geomatic Engineering
Type	PhD Program
Level Of Qualification	This is a Third Cycle (Doctorate) Program
Qualification Awarded	The students who successfully complete the program are awarded the degree of Doctor of Philosophy (PhD) in Ph.D. Program in Geomatic Engineering Remote Sensing and GIS
Mode Of Study	Full-Time
Programme Director	Not Assigned
Specific Admission Requirements	The general achievement score for all candidates who apply to this programs is calculated by the candidate assessment judges by taking the %60 of ALES the %20 of the CGPA of undergraduate or master program and the %20 of the entrance exam into account. Candidates are put in an order of achievement and accepted within the limits of the contingency. The admission requirement details a candidate should provide are stated in YTU Regulations on Graduate Studies Article 10 (4-b). For further information, please refer to: http://www.fbe.yildiz.edu.tr/haberler.php?id=121
Specific Arrangements For Recognition Of Prior Learning	A student can only be exempt from maximum four previous elective courses in which they have been successful in being a special student, transfer from another university or another master program that they no longer have an enrollment.
Qualification Requirements And Regulations	The graduate students in this program must complete a minimum of 24 local credits (8 courses) and a thesis (Thesis is non-credit and assessed as successful/fail); they must be successful in all of the courses with a minimum achievement grade of BB, must have completed 180-240 ECTS credits and have scored a minimum GPA of 3.00/4.00 to qualify for graduation.
Profile Of The Programme	The aim of the program is to raise engineers and academician candidates who are specialized in the field of remote sensing and GIS.
Occupational Profiles Of Graduates With Examples	Graduates of this doctorate program are expected to build their career on research and development in the field of remote sensing and GIS. They can work either in private or public companies in the fields or they can continue to their career in academia.
Access To Further Studies	The graduates of this program can apply to postdoctoral programs in accordance with their areas of specialty.
Examination Regulations Assessment And Grading	(1) A student has to attend at least 70 percent of the courses he has enrolled. (2) In one semester, there must at least be two measurements of success. One of these must be a written exam by all means at the discretion of relevant faculty member. In case of on written examination, the other assessment could be an assignment, project, laboratory report or similar kinds of assessment. (3) At the end of the semester, a final exam on the entire course is administered. Achievement grade is calculated taking the work during the semester with a percentage between 40 and 60 and the final exam with a percentage between 60 and 40 into consideration. In case of failure, except for F0, resit exam is granted to the student. (4) Achievement grades are defined as follows: a)

Percentage Points	Achievement Grade	Coefficient
90-100	AA	4.00
80-89	BA	3.50
70-79	BB	3.00
60-69	CB	2.50
50-59	CC	2.00
40-49	DC	1.50
30-39	DD	1.00
20-29	FD	0.50
0-19	FF	0.00
NA	F0	0.00
b) Grades not included in the Average Scores:		
1) G: Pass/Successful,		
2) K: Fail/Unsuccessful,		
3) M: Exemption,		
4) E: Incomplete		
(5) Minimum achievement grade to be successful in a course is BB (3.00).		
(6) A student can only be successful in all courses if he has scored a minimum GPA of 3.00.		
(7)The student who has scored CB, CC, DC, DD, FD, FF and F0 are considered to have failed the course. These grades are included in his CGPA (AGNO).		
(8)G (Pass/Successful) grade indicates that the student has been successful / satisfactory in a course or activity. K(Fail/Unsuccessful) grade indicates that the student has been unsuccessful / unsatisfactory in a course or activity. M (Exemption) grade indicates that the student have exemption for the previous program courses which are deemed equivalent to the courses offered in the program. Decision for the course exemption is made by the relevant faculty committee. G, K and M grades aren't included in the CGPA (AGNO). E(Incomplete) grade indicates that the faculty member who carries out the course hasn't entered the grade into the automation system. These grades are entered into the system by the decision of the execute board of the Graduate School.		
Graduation Requirements	The graduate students in this doctoral program must complete a minimum of 24 local credits (8 courses) and a thesis; they must be successful in all of the courses with a minimum achievement grade of BB, must have completed 180-240 ECTS credits and have scored a minimum CGPA of 3.00/4.00 to qualify for graduation.	

Program Outcomes

1	Enhancing and deepening basic theoretical and practical knowledge of remote sensing and geographic information system in accordance with the level of the expertise area based on graduate level qualifications and reach unique conclusions leading to improvements in the field
2	Ability to develop a new method, design and/or application enhancing remote sensing and geographic information system field
3	Being able to reach unique conclusions through knowledge requiring expertise and being able to analyze and evaluate new and complex ideas within a multi-disciplinary understanding

4	Being able to conduct an independent study requiring remote sensing and geographic information system expertise, be able to reach conclusions and summarize findings in a report
5	Ability to design, conduct and collect data from remote sensing and geographic information system experiments within expertise area, to investigate/interpret such data using scientific methods
6	Being able to effectively use national and international academic resources, comfortably communicate with national and international colleagues, systematically present written or oral content in scientific meetings
7	Knowledge of computer softwares in remote sensing and geographic information system field and their effective utilization
8	Introduce scientific, technological, social and cultural advancements in remote sensing and geographic information systems to the society, thus contributing to the process of becoming an information society and sustaining it
9	Improving expertise area by conducting a scientific study in remote sensing and geographic information system individually and/or collectively
10	Being able to effectively evaluate all processes as a globally developed and sensitive person, contribute to solving scientific, social, cultural and ethical problems encountered

Curriculum							
1. Year - Fall Semester							
Code	Req.	Title	Lecture	Practical	Laboratory	Local Credit	ECTS
SEC0001		Elective 1	3	0	0	3	7.5
SEC0002		Elective 2	3	0	0	3	7.5
SEC0003		Elective 3	3	0	0	3	7.5
SEC0004		Compulsory 1	3	0	0	3	7.5
Total:							30
1. Year - Spring Semester							
Code	Req.	Title	Lecture	Practical	Laboratory	Local Credit	ECTS
SEC0005		Elective 4	3	0	0	3	7.5
SEC0006		Elective 5	3	0	0	3	7.5
SEC0007		Elective 6	3	0	0	3	7.5
HRT5004		Research Methods and Scientific Ethics	2	0	0	2	2.5
HRT6001		Seminar	0	2	0	0	5
Total:							30
2. Year - Fall-Spring Semester							
Code	Req.	Title	Lecture	Practical	Laboratory	Local Credit	ECTS
HRT6003		Specialized Field Course	5	0	0	0	20
HRT6000		Ph.D. Thesis	0	1	0	0	40
Total:							60
3. Year - Fall-Spring Semester							
Code	Req.	Title	Lecture	Practical	Laboratory	Local Credit	ECTS
HRT6003		Specialized Field Course	5	0	0	0	20

HRT6000		Ph.D. Thesis	0	1	0	0	40	
							Total:	60
4. Year - Fall-Spring Semester								
Code	Req.	Title	Lecture	Practical	Laboratory	Local Credit	ECTS	
HRT6003		Specialized Field Course	5	0	0	0	20	
HRT6000		Ph.D. Thesis	0	1	0	0	40	
							Total:	60
							Program Total ECTS:	240
Compulsory Courses								
Code	Req.	Title	Lecture	Practical	Laboratory	Local Credit	ECTS	
HRT5111		Statistical Analysis in Geodesy	3	0	0	3	7.5	
HRT5223		Digital Photogrammetry	3	0	0	3	7.5	
HRT5313		GIS Algorithms and Programming	3	0	0	3	7.5	
HRT6210		Image Processing in Photogrammetry and Remote Sensing	3	0	0	3	7.5	
HRT6307		Spatial Statistics	3	0	0	3	7.5	
Elective Courses								
Code	Req.	Title	Lecture	Practical	Laboratory	Local Credit	ECTS	
HRT6296		Topographical Information System	3	0	0	3	7.5	
HRT5220		Data Collection with Mobile Sensing System	3	0	0	3	7.5	
HRT5203		GIS and Information Technologies	3	0	0	3	7.5	
HRT5205		Accuracy Assessment of GIS and Remotely Sensed Data	3	0	0	3	7.5	
HRT5206		Geo-Information Processing and Analysis	3	0	0	3	7.5	
HRT5228		Special Topics in Geographic Calculation	3	0	0	3	7.5	
HRT5218		Spatial Databases	3	0	0	3	7.5	
HRT5226		Three Dimensional Modeling	3	0	0	3	7.5	
HRT5209		Data Quality and Reliability in GIS	3	0	0	3	7.5	
HRT5212		Geographic Information System (GIS) Technology for Management of Coastal Zones	3	0	0	3	7.5	
HRT5229		Geodetic Applications Using Mobile Devices	3	0	0	3	7.5	
HRT5230		Deep Learning in Remote Sensing	3	0	0	3	7.5	
HRT6201		Geometric Fundamentals of GIS	3	0	0	3	7.5	
HRT6202		Multi-Resolution Spatial Data Modelling and Production	3	0	0	3	7.5	
HRT6203		Inertial Navigation Systems and Applications in Photogrammetry and Remote Sensing	3	0	0	3	7.5	
HRT6204		Projects Management Process for Photogrammetry and GIS	3	0	0	3	7.5	
HRT6207		Geospatial Semantic Web	3	0	0	3	7.5	

HRT6208		Digital Cartography	3	0	0	3	7.5
HRT6206		Special Topics in Cartography	3	0	0	3	7.5
HRT6209		Medical Image Processing	3	0	0	3	7.5
HRT6205		Image Fusion Algorithms and Applications	3	0	0	3	7.5
HRT5240		Geometric Integration of Geographic Data	3	0	0	3	7.5
HRT5222		Digital Terrain Models	3	0	0	3	7.5
HRT5207		DEM and GIS implementation for Landform Analysis	3	0	0	3	7.5
HRT5208		Special Topics in GIS	3	0	0	3	7.5
HRT5215		Location Based Services	3	0	0	3	7.5
HRT5219		Microwave Remote Sensing	3	0	0	3	7.5
HRT6198		Analytical Photogrammetry	3	0	0	3	7.5
HRT5227		Object Detection by using Multiple Sensing System Data	3	0	0	3	7.5
HRT6199		Photogrammetric Information Systems	3	0	0	3	7.5
HRT5202		Analytical Cartography	3	0	0	3	7.5
HRT6295		Spatial Data Infrastructure	3	0	0	3	7.5
HRT5211		Internet Based Cartography and GIS	3	0	0	3	7.5
HRT6195		Special Topics in Photogrammetry	3	0	0	3	7.5
HRT5204		Disaster Management with GIS	3	0	0	3	7.5
HRT6303		River Basin Based Terrain Modelling and Analysis	3	0	0	3	7.5
HRT5250		Thematic Cartography and Visualization	3	0	0	3	7.5
HRT6197		Photo-Triangulation	3	0	0	3	7.5
HRT5210		Map Projections and Coordinate Systems	3	0	0	3	7.5
HRT6193		Special Topics in Remote Sensing	3	0	0	3	7.5
HRT5217		The Laser Scanning Technology	3	0	0	3	7.5