



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Chemistry of Boron Compounds							
Course Code		KİM523		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	155 ( <i>Hours</i> )	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The objective of this course is to give the students information about chemical structure, properties and reactions of boron, the similarities with other functional groups, and improve a multi-step chemical synthesis capabilities.							
Course Content		The examination of reactions and properties of organoboron compounds							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	28
Final Examination	1	60
Assignment	4	12

### Recommended or Required Reading

1	Houben-Weyl, Method of molecular Transformation, volume 6, Thieme, 2005.
2	Spectroscopic identification of Organic Compounds, sixth edition by R. M. Silverstein, F. X. Webster, Wiley, 1998.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to boron compounds
2	Theoretical	Three coordinate boron compounds
3	Theoretical	Boron-Hydrogen compounds
4	Theoretical	Boron-halogene compounds
5	Theoretical	Boron-Oxygene compounds
6	Theoretical	Boron-Sulphur and Selenium compounds
7	Theoretical	Boron-Nitrogen compounds
8	Theoretical	Boron-Phosporus and Arsenic compounds
9	Intermediate Exam	Midterm exam
10	Theoretical	Boron-3A and 4A groups compounds
11	Theoretical	Boron - ?-metal compounds
12	Theoretical	Four coordinate boron compounds
13	Theoretical	Four and five coordinate boron compounds
14	Theoretical	Rearrangement compounds of boron
15	Theoretical	Spectroscopic analysis of organoboron compounds
16	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	4	0	9	36
Reading	14	0	1	14
Midterm Examination	1	30	1.5	31.5
Final Examination	1	30	1.5	31.5
Total Workload (Hours)				155
[Total Workload (Hours) / 25*] = ECTS				6

\*25 hour workload is accepted as 1 ECTS



**Learning Outcomes**

1	to be able to acquire basic knowledge of the chemical behavior of a multi-step synthesis of boron compounds.
2	to be able to estimate the stability of boron compounds which have three and four bonds.
3	to be able to estimate the reactivity of boron compounds
4	to be able to evaluate the spectroscopic data, assessment of boron compounds
5	to learn the rearrangement compounds of boron

**Programme Outcomes (Chemistry Master)**

1	To be able to gain proficiency in depths and analysis by statistical methods in the same or a related area depending on the undergraduate competence,.
2	To be able to use the knowledge of his/her field and the skills to solve problems and/or applications in interdisciplinary research.
3	To be able to adopt to evaluate the information and skill his/her field by critical approach.
4	To be able to evaluate the effect of important persons, case and fact on his/her field applications.
5	To be able to gain the ability to discuss write and orally present to a group of literate listener.
6	To be able to communicate orally and written in a foreign language at least at European language B2 level.
7	To be able to use computer programs related to his/her field and have skills for informatics communication.
8	To be able to be careful in protecting social, scientific and cultural ethics in collection data, application and presentation.
9	To be able to develop strategic, political and application plans in his/her field and may evaluate the outcomes in quality periods.

**Contribution of Learning Outcomes to Programme Outcomes** 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	5	5	5	5	5
P2	4	5	4	5	5
P3	4	5	5	5	5
P4	5	5	5	5	5
P5	5	5	5	5	5
P6	3	3	3	3	3
P7	3	3	3	3	3
P8	5	5	5	5	5
P9	5	5	5	5	5

