COURSE INFORMATION FORM

FACULTY / GRADUATE SCHOOL	**Faculty of Arts and Sciences**
DEPARTMENT / PROGRAMME	**Chemistry**
TITLE OF COURSE	**Professional English**
CODE	**KIM4471**
LOCAL CREDIT	**3**
ECTS	**5**
LECTURE HOUR / WEEK	**3**
PRACTICAL HOUR / WEEK	**0**
LABORATORY HOUR / WEEK	**0**
PREREQUISITE	**None**
SEMESTER	**Fall**
COURSE LANGUAGE	**English**
LEVEL OF COURSE	**First Cycle**
COURSE TYPE	**Elective @ Bachelor Programme in Chemistry**
COURSE CATEGORY	**Core Courses**
MODE OF DELIVERY	**Face-to-Face**
OWNER ACADEMIC UNIT	**Department of Chemistry**
COURSE COORDINATOR	**Nergis ARSU**
ASSISTANT(S)	
COURSE OBJECTIVES	The aim of this course is to develop students' ability to scan international publications, comprehend, interpret, present, and translate scientific texts in English in order to keep track of current technological developments in chemistry and related disciplines. The course is designed to help students gain mastery of scientific terminology, directly access innovations in their field through English sources, and effectively communicate this knowledge. In addition, by delivering presentations and participating in discussions on current chemical technologies in English, students will strengthen their professional communication skills while also enhancing their critical thinking, analytical, and synthesis abilities. This course further aims to enable students to use English not only as a means of communication but also as a tool for professional development and academic advancement; thereby increasing their ability to access, interpret, and share knowledge on a global scale within the field of chemistry.
COURSE CONTENT	Nuclear energy; alternative energy sources; ozone layer; fuel cell; biodiesel; boron and hydrogen; food additives; sun energy; smart materials; water pollution; polymers I; biopolymers I; recycling.
RECOMMENDED OR REQUIRED READINGS	**Literature Review** (Search Engines, Online Journals, Web of Science) **[1]** Ezdesir, Ayhan, Erbay, Erol, Taskiran, Isa, Yagci, M. Ali, Cobek, Mehves, Bilgic, Tulin. *Polymers I*. 1999. **[2]** Fried, Joel R. *Polymer Science and Technology*. 1995. **[3]** Piskin, Erhan. *Polymers II*. 1999.
Course Learning Outcomes	Upon successful completion of this course, students will be able to 1. Identify current English terminology used in chemistry and related disciplines

	and use it effectively in professional communication. 2. Scan international scientific literature to understand, interpret, and summarize essential information. 3. Learn technological developments in chemistry from English sources and present this knowledge in classroom presentations and discussions. 4. Participate in discussions on current chemical technologies and enhance their scientific thinking skills. 5. Recognize new technological fields they may encounter in their professional careers through English sources and determine their own areas of specialization.

EVALUATION SYSTEM

Activities	Number	Percentage of Grade
Attendance/Participation: • **Content:** Student attendance and participation in class discussions and activities. • **Detailed Assessment Criteria:** -Active participation in lessons and asking questions - Contribution to group discussions - Coming prepared for class activities	**14**	**%5**
Laboratory		
Application (Oral Examination):		
Field Work		
Special Course Internship (Work Placement)		
Quizzes/Studio Critics:		
Homework Assignments:		
Presentations/Jury: • **Content:** Students are expected to deliver group or individual presentations in English on selected topics. • **Format:** Group or individual presentations • **Detailed Assessment Criteria:** - Accurate and clear explanation of the topic - Correct use of scientific terminology - Use of presentation techniques and visual materials - Contribution to Q&A session	**1**	**%25**
Project:		
Seminar/Workshop		
Midterms: • **Content:** Comprehensive questions covering all topics addressed up to the exam week • **Format:** Face-to-face written exam. (90 minutes). • **Detailed Assessment Criteria:** - Reading comprehension skills - Knowledge of terminology - Ability to complete short translation and summarization tasks	**1**	**%30**

Final: • **Content:** Comprehensive questions covering the entire content of the course • **Format:** Face-to-face written exam. (90 minutes). • **Detailed Assessment Criteria:** - Understanding and interpreting scientific texts in English - Accurate use of professional terminology - Ability to synthesize and present information in written form	**1**	**%40**
Percentage of In-Term Studies		**%60**
Percentage of Final Examination		**%40**
TOTAL		**%100**

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

WEEKS	COURSE OUTLINE	Related Preparation
1	**Lecture:** Nuclear Energy, Nanotechnology **Quick Practice (5 minutes):** Students prepare a short definition list of key terms **In-Class Discussion (5 minutes):** Ethical aspects of nuclear energy and nanotechnology	Read an article from online journals
2	**Lecture:** Alternative Energy Sources, Carbon Nanotubes **Quick Practice (5 minutes):** Matching energy types with real-life applications **In-Class Discussion (5 minutes):** Advantages and disadvantages of alternative energy	Literature search on carbon nanotube applications
3	**Lecture:** Ozone Layer, Biopolymers **Quick Practice (5 minutes):** Analyze a figure/chart about ozone depletion **In-Class Discussion (5 minutes):** The role of biopolymers in sustainable development	Read a text on ozone layer and biopolymers
4	**Lecture:** Fuel Cell, Enzymes in Denim Bleaching **Quick Practice (5 minutes):** Diagram of a fuel cell **In-Class Discussion (5 minutes):** Biotechnological applications of enzymes	Short reading on enzyme use in industry
5	**Lecture:** Biodiesel, Textile Chemicals **Quick Practice (5 minutes):** Translate a short text on biodiesel **In-Class Discussion (5 minutes):** Environmental impact of textile chemicals	Read one article on biodiesel production
6	**Lecture:** UV-Curing, Nanocoatings **Quick Practice (5 minutes):** Case study analysis (UV-curing in industry) **In-Class Discussion (5 minutes):** Nanocoatings and their everyday applications	Read selected material from online databases
7	**Lecture:** Food Additives, Polymers II **Quick Practice (5 minutes):** Identify food labels and	Literature search on polymers and food additives

	English equivalents **In-Class Discussion (5 minutes):** Safety and controversies around food additives	
8	**Midterm 1**	Review of all topics covered up to the exam week.
9	**Lecture:** Solar Energy **Quick Practice (5 minutes):** Vocabulary practice (types of solar cells) **In-Class Discussion (5 minutes):** Efficiency and limitations of solar energy	Read an article on solar energy
10	**Lecture:** Smart Materials, Drug Delivery **Quick Practice (5 minutes):** Mini-presentation on smart materials **In-Class Discussion (5 minutes):** Ethical concerns in drug delivery systems	Literature search on recent studies
11	**Lecture:** Water Pollution, Nobel Prize Winners **Quick Practice (5 minutes):** Analyze environmental data **In-Class Discussion (5 minutes):** Discussion of Nobel Prizes in Chemistry and their impact	Read about major Nobel prize winners in Chemistry
12	**Lecture:** Polymers I, Forensic Chemistry **Quick Practice (5 minutes):** Translate a short forensic chemistry case **In-Class Discussion (5 minutes):** The role of chemistry in law and society	Read *Polymers I* and one article on forensic chemistry
13	**Lecture:** Biopolymers I, Glass **Quick Practice (5 minutes):** Group brainstorming on biopolymer products **In-Class Discussion (5 minutes):** Glass applications in modern technology	Read some chapters/articles
14	**Lecture:** Recycling, Photolithography **Quick Practice (5 minutes):** Vocabulary quiz on recycling methods **In-Class Discussion (5 minutes):** Recycling technologies and semiconductor industry	Read articles on recycling and photolithography
15	**Lecture:** Recycling (Review) **In-Class Activity (15 minutes):** Group summary presentations **In-Class Discussion (5 minutes):** Recycling as a global challenge	Review all recycling-related sources
16	Final	Review of all topics covered.

ECTS WORKLOAD TABLE

Activities	Number	Duration (Hour)	Total Workload
Course Hours	**14**	**3**	**42**
Laboratory			
Application			

Field Work			
Study Hours Out of Class	**10**	**5**	**50**
Special Course Internship (Work Placement)			
Homework Assignments	**1**	**10**	**10**
Quizzes/Studio Critics			
Project			
Presentations / Seminar	**1**	**12**	**12**
Mid-Terms (Examination Duration + Examination Prep. Duration)	**1**	**12**	**12**
Final (Examination Duration + Examination Prep. Duration)	**1**	**12**	**12**
		Total Workload:	**138**
		Total Workload / 30(h):	**4.60**
		ECTS Credit:	**5**

Ders Öğrenim Çıktısı & Program Çıktısı Matrisi

	DÖÇ-1	DÖÇ-2	DÖÇ-3	DÖÇ-4	DÖÇ-5
PÇ-1 Temel kimyasal kavramları tanımlayıp kimya ile ilgili alanlardaki bilgileri, uygulama araç-gereçlerle destekleyerek bilimsel yaklaşımı ön plana alacak şekilde ileri düzeydeki kuramsal ve uygulamalı bilgileri kazanabileceklerdir. / Define the basic chemical concepts and gain advanced theoretical and practical knowledge in the fields related to chemistry in a way to emphasize the scientific approach by supporting the knowledge with application tools and equipment.	5	4	4	5	4
PÇ-2 Alanlarında edindikleri ileri düzey teorik ve uygulamalı bilgilerini, kimya ile ilgili alanlardaki problemlerin incelenmesi için deney tasarlayıp çözüm yöntemi geliştirme, uygun analitik yöntemler ve teknikler kullanarak problemleri çözme, verileri toplama, sonuçları analiz etme ve yorumlama için kullanabileceklerdir. / Students will be able to use their advanced theoretical and practical knowledge in the field of chemistry to design experiments and develop solution methods for the investigation of problems in chemistry related fields, solve problems using appropriate analytical methods and techniques, collect data, analyze and interpret results	-	-	-	-	-
PÇ-3 Alanlarında edindikleri ileri düzey teorik ve uygulamalı bilgileri kullanarak kimya ile ilgili alanlarda karşılaşılan ve öngörülemeyen karmaşık sorunlara, araştırma yöntemlerini kullanarak, yeni stratejik yaklaşımlar geliştirerek ve sorumluluk alarak çözüm üretebileceklerdir. / To be able to solve complex and unforeseen problems encountered in chemistry related fields by using advanced theoretical and practical knowledge in their fields, using research methods, developing new strategic approaches and taking responsibility.					
PÇ-4 Kimya ve ilgili alanlarda bağımsız olarak ve paydaşlarıyla ortaklaşa çalışmalar yürütebilecek ve analitik düşünme yeteneğini kullanabileceklerdir. / Students will be able to conduct studies independently and in collaboration with stakeholders in chemistry and related fields and use analytical thinking skills.	5	3	3	3	3
PÇ-5 Seçtikleri bir veya birden fazla kimya uygulama alanında (Kalite Eğitimi, Farmasötik Ürün, Biyokimyasal Teknolojiler, Polimer	-	-	-	-	-

Teknolojisi, Gıda Kimyası, Çevre Kimyası vb) uzman statüsü kazanabileceklerdir. / They will be able to gain expert status in one or more chemistry application areas of their choice (Quality Education, Pharmaceutical Products, Biochemical Technologies, Polymer Technology, Food Chemistry, Environmental Chemistry, etc.).					
PÇ-6 Kimya alanında yaygın olarak kullanılan bilgisayar ve yapay zekâ teknolojileri ile en az bir programlama dilini, problemleri çözmek, veri analizi yapmak ve simülasyonlar gerçekleştirmek için etkin biçimde kullanabileceklerdir. / They will be able to effectively use computer and artificial intelligence technologies widely used in the field of chemistry and at least one programming language to solve problems, analyze data and perform simulations.	-	-	-	-	-
PÇ-7 Kimya ve ilgili alanlardaki kariyer fırsatlarını değerlendirerek kişisel ve mesleki gelişim hedeflerini belirleyebilecekler ve bu hedeflere ulaşmak için hayat boyu öğrenme stratejilerini kullanabileceklerdir. / Identify personal and professional development goals by evaluating career opportunities in chemistry and related fields and use lifelong learning strategies to achieve these goals.	4	5	4	5	4
PÇ-8 Bilimsel araştırmalarını ve mesleki faaliyetlerini yürütürken doğabilecek hukuksal sonuçları dikkate alarak mesleki etik ilkeler ile toplumsal ve evrensel değerler doğrultusunda ve sosyal sorumluluk bilinci ve adalet duygusuyla hareket edebileceklerdir. / They will be able to act in line with professional ethical principles and social and universal values and with a sense of social responsibility and justice, taking into account the legal consequences that may arise while conducting scientific research and professional activities.	-	-	-	-	-
PÇ-9 Bireysel ya da takım olarak yürüttükleri çalışmalarda ve projelerde kalite yönetimi ilkelerini uygulayarak süreçleri ve sonuçları kalite standartları çerçevesinde değerlendirebileceklerdir. / They will be able to evaluate processes and results within the framework of quality standards by applying quality management principles to their individual and team projects.	-	-	-	-	-
PÇ-10 Belirli bir kimya ile ilgili konu hakkında literatür taraması yaparak güvenilir bilgi kaynaklarını etkin bir şekilde kullanabileceklerdir. /	5	5	4	4	4

By conducting a literature review on a specific chemistry-related topic, they will be able to use reliable sources of information effectively.					
PÇ-11 Teorik ve uygulamalı kimya alanında özgün akademik araştırma yürütebileceklerdir. / Conduct original academic research in the field of theoretical and applied chemistry.	-	-	-	-	-
PÇ-12 İleri düzey kimya bilgilerini takip edebilecek, kimya ile ilgili konuları ve araştırmaları kimyasal terminoloji kullanarak Türkçe ve İngilizcede tüm paydaşlara sözlü ve yazılı olarak aktarabileceklerdir. / Students will be able to follow advanced chemistry knowledge, transfer chemistry related topics and researches to all stakeholders orally and in writing in Turkish and English using chemical terminology.	5	4	5	4	5