Course Syllabus

I. **General Information**

Course name in English	Cancer chemoprevention
Course name in Polish	Chemoprewencja nowotworów
Programme	Bioanalytical technologies
Level of studies (BA, BSc, MA, MSc, long-cycle MA)	MSc
Form of studies (full-time, part-time)	Full-time
Discipline	Biological sciences
Language of instruction	English

Course coordinator/person responsible	Dr hab. Konrad Kubiński/ mgr Lidia Aftyka

Type of class *(use only the types mentioned below)*	Number of teaching hours	Semester	ECTS Points
lecture	30	III	6
tutorial			
classes	30	III	
laboratory classes			
workshops			
seminar			
introductory seminar			
foreign language classes			
practical placement			
field work			
diploma laboratory			
translation classes			
study visit			

Course pre-requisites	-

II. **Course Objectives**

C1 - To acquaint students with selected organisms from which chemopreventive compounds are isolated,
C2 - To aware students relationships that exist between the structure and its chemopreventive activity,
C3 -To present students to the possibilities of using natural compounds in modern biotechnology and medicine.

III. **Course learning outcomes with reference to programme learning outcomes**

Symbol	Description of course learning outcome	Reference to programme learning

		KNOWLEDGE	
W_01	knows the specific terminology used in cancer chemoprevention, understands and is able to define complex phenomena and processes occurring in cancer cells		K_W01
W_02	has advanced knowledge of cancer chemoprevention necessary for practical use in biotechnological processes used in industry		K_W02
		SKILLS	
U_01	proficiently uses literature in the field of cancer chemoprevention in the language as courses are provided and another modern language, shows knowledge in specialised vocabulary in the field of cancer chemoprevention, uses modern foreign language at level B2+		K_U02
U_02	displays the ability to prepare oral presentations and communicate with diverse audiences using various media, initiates and conducts a debate on cancer chemoprevention		K_U05
U_03	regularly updates the knowledge in cancer chemoprevention and knows its practical application, understands the need to follow regularly the scientific literature as well as to familiarize himself with scientific journals to deepen this knowledge		K_U16
U_04	has deepened awareness of level of his knowledge and skills, understands the need for continuous personal and professional development and is open to modern technologies used in cancer chemoprevention		K_U17
		SOCIAL COMPETENCIES	
K_01	correctly identifies and resolves dilemmas associated with the cancer chemoprevention and is aware of the need for ethical conduct during planning and carrying out research experiments		K_K04

IV. Course Content

Lectures
1. Various aspects of nutrition, 2. Healthy diet, 3. Epidemiological studies, 4. Cancer – global problem, 5. Historical aspect of chemoprevention, 6. Natural anticancer agents 7. Chemical groups of anticancer groups, 8. Mechanisms of action of chemopreventive compounds 9. Smoking and chemoprevention, 10. Limitations of chemoprevention, 11. Preclinical studies on chemopreventive agents 12. Clinical studies on chemopreventive compounds.

Classes
1. Safety rules, 2. The application of bacteria and cell lines for the determination of chemopreventive potential, 3. Ames test, 4. The SOS ans Umu chromotests, 5. Comet Assay in Cancer Chemoprevention, 6. The application of bacteria and cell lines for the determination of chemopreventive potential 7. Angiogenesis Assay, 8. Genotoxicity test using mutation of p53 gene, 10. The analysis of DNA adducts formation, 11. The application of FM3A cell line for the determination of chemopreventive potential, 12. The chemopreventive potential of lunasis, 13. Enzymatic assays in chemoprevention studies,

V Didactic methods used and forms of assessment of learning outcomes

Symbol	Didactic methods *(choose from the list)*	Forms of assessment *(choose from the list)*	Documentation type *(choose from the list)*
KNOWLEDGE			
W_01	Conventional lecture	exam	Evaluated test
W_02	Conventional lecture	exam	Evaluated test
SKILLS			
U_01	laboratory classes	Test	Evaluated test
U_02	laboratory classes	Test	Evaluated test
U_03	laboratory classes	Test	Evaluated test
U_04	laboratory classes	Test	Evaluated test
SOCIAL COMPETENCIES			
K_01	laboratory classes	Test	Evaluated test

VI Grading criteria, weighting factors

Dergee	Degree criteria	
Very good (5)	the student realizes the assumed learning outcomes to a very good degree	Student demonstrates knowledge of the content of education at the level of 95-100 %
More than good (4,5)	the student realizes the assumed learning outcomes to a more than good degree	Student demonstrates knowledge of the content of education at the level of 85-94 %
good (4)	the student realizes the assumed learning outcomes to a good degree	Student demonstrates knowledge of the content of education at the level of 75-84%
Good enough (3,5)	the student realizes the assumed learning outcomes to a good enough degree	Student demonstrates knowledge of the content of education at the level of 65-74%
sufficient (3)	the student realizes the assumed learning outcomes to a sufficient degree	Student demonstrates knowledge of the content of education at the level of 55-64%
unsufficient (2)	the student realizes the assumed learning outcomes to an unsufficient degree	Student demonstrates knowledge of the content of education at the level of 55%

VII Student workload

Form of activity	Number of hours
Number of contact hours (with the teacher)	70 (60 + 10 individual consultation)
Number of hours of individual student work	80

VIII Literature

Basic literature
Cancer chemoprevention: an overview, Summya Rashid, Springer, 2017
Cancer Chemoprevention Methods and Protocols, Editors: Strano, Sabrina (Ed.), Springer, 2016
Additional literature
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