

MODULE	CONTENT	YEAR	TERM	CREDITS	TYPE
	CANCER AND NUTRITION	3rd or 4th	2nd	6	Optional
<b>LECTURER(S)</b>			<b>Postal address, telephone nº, e-mail address</b>		
<ul style="list-style-type: none"> <li>Mariana F. Fernández Cabrera</li> </ul>			- Dpto. Radiology, School of Medicine (new). 10 <sup>th</sup> floor. - Centro Investigación Biomédica (Lab 207). 2 <sup>nd</sup> floor  E-mail: <a href="mailto:marjeta@ugr.es">marjeta@ugr.es</a> and <a href="mailto:radiología@ugr.es">radiología@ugr.es</a>		
<b>DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT</b>			Tutoring and mentoring on my office (Lab 207)		
Human Nutrition and Dietetics Degree			Monday, Thursday, 12.30-14.30 Wednesday: 11.30-12,30 and 13.30-14.30		
<b>PREREQUISITES and/or RECOMMENDATIONS (if necessary)</b>					
The topic Cancer and Nutrition is taught at the end of the Human Nutrition and Dietetics Degree course					
<b>BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE)</b>					
Cancer and Nutrition addresses basic concepts of nutrition and disease, especially cancer (concept of malignant tumor, theories of carcinogenesis, cancer incidence, etc.). It also highlights nutritional and lifestyle recommendations for cancer prevention, with special reference to the European Code Against Cancer and the recent recommendations of the American Cancer Society. Nutritional influences on the onset and progression of cancer are approached through case studies. Finally, the nutritional effects of cancer and cancer therapy and the nutrition of the oncological patient are studied					
<b>GENERAL AND PARTICULAR ABILITIES</b>					
General abilities The aim is for the student to acquire general and specific abilities of value for their personal and professional futures.					
<b>OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)</b>					
<u>For the student:</u>  To learn the concepts of a malignant tumor and carcinogenesis To know the geographic distribution and temporal trends of cancer around the world (and in Spain) To know the nutritional and lifestyle factors related to cancer prevention To understand nutritional influences on the onset, development and progression of tumor disease					



## **DETAILED SUBJECT SYLLABUS**

### **THEORETICAL SUBJECT MATTER:**

#### **Part 1: Introduction; Basic concepts.**

LESSON 1. Introduction and Presentation of the subject  
LESSON 2. Basic concepts of malignant neoplastic disease  
LESSON 3. Epidemiology of cancer  
LESSON 4. Natural history of cancer  
LESSON 5. Mechanisms of tumour progression  
LESSON 6. Classification system of tumour spread  
LESSON 7. Aetiology of cancer  
LESSON 8. Genes and cancer  
LESSON 9. Carcinogenesis  
LESSON 10. Chemical, physical and biological carcinogens  
LESSON 11. Chemical carcinogenesis mediated by nutrition  
LESSON 12. Tumour diagnosis and treatment  
LESSON 13. Epidemiological designs on the study of cancer  
LESSON 14. EPIC study (Prospective European study of Cancer and Nutrition)

#### **Part 2: Nutritional and lifestyle recommendations for cancer prevention.**

LESSON 15. Control and prevention of cancer  
LESSON 16. European Code against Cancer and recommendations of the American Cancer Society  
LESSON 17. Chemoprevention of cancer

#### **Part 3: Nutritional influences on cancer development.**

LESSON 18. Diet and cancer. Dietary patterns  
LESSON 19. Diet and Cancer: Influence of non-nutritional components of the diet on cancer development  
LESSON 20. Diet and cancer: Macronutrients  
LESSON 21. Diet and cancer: Micronutrients  
LESSON 22. Nutritional influences on breast cancer.  
LESSON 23. Nutritional influences on oesophageal and gastric cancer  
LESSON 24. Nutritional influences on colorectal cancer  
LESSON 25. Nutritional influences on hepatic cancer  
LESSON 26. Nutritional influences on pancreatic cancer  
LESSON 27. Nutritional influences on head and neck cancer

#### **Part 4 Nutritional effects of cancer and cancer therapies; Nutritional care of the oncological patient**

LESSON 28. Nutritional effects of cancer.  
LESSON 29. Nutritional consequences of oncologic therapeutic measures  
LESSON 30. Nutritional care for terminal oncologic patients

### **PRACTICAL SUBJECT MATTER:**

#### **SEMINARS**

Seminar I. Recourses for the search for and critical analysis of information  
Seminar II. Acquisition of communication skills  
Seminar III. The clinical history. Guided anamnesis  
Seminar IV. Acquisition of health skills



## READING

### Books (some samples):

- Cancer Prevention: The causes and prevention of cancer. Volume 1. Series: Cancer Prevention-Cancer Causes. Colditz, Graham A.; Hunter, D.J. (Eds.) 2001.
- Fundamentals of cancer prevention. Alberts, David S.; Hess, Lisa M. (Eds.). Segunda Edición. 2008.
- Mechanisms in Carcinogenesis and Cancer Prevention. Harri Vainio, Eino Hietanen. Springer, 2003.
- Nutrition, Diet and Cancer. Springer Science+Business Media. 2012.  
DOI: 10.1007/978-94-007-2923-0\_24
- Dietary Options for Cancer Survivors by American Institute for Cancer Research ([www.aicr.org](http://www.aicr.org))  
A guide to research on foods, food substances, herbals and dietary regimens that may influence cancer.

### Reviews/articles (some samples):

1. Palou A. New challenges in basic and applied nutrition. Rev Med Univ Navarra. 2006;50(4):62-70. Review
2. Serra Majem L, García Alvarez A, Ngo de la Cruz J. Mediterranean diet. Characteristics and health benefits. Arch Latinoam Nutr. 2004;54(2 Suppl 1):44-51.
3. Agudo A, González CA. Potential diet carcinogenics and risk of cancer. Med Clin (Barc). 2002;119(15):579-89. Review.  
Gonzalez C, Navarro C, Martinez C, Quirós JR, Dorronsoro M, Barricarte A, Tormo MJ, Agudo A, Chilarque MD, Amiano P, Ardanaz E, Pera G, Sanchez MJ, Berenguer A. El estudio prospectivo europeo sobre cáncer y nutrición (EPIC). Rev. Esp. Salud Publica [online]. 2004, vol.78, n.2, pp. 167-176.
4. Ramírez Ramos A, Sánchez Sánchez R. Helicobacter pylori and gastric cancer. Rev Gastroenterol Peru. 2008;28(3):258-66. Review.
5. Caro MM, Laviano A, Pichard C, Candela CG. Relationship between nutritional intervention and quality of life in cancer patients. Nutr Hosp. 2007;22(3):337-50. Review.
6. Rodrigo L, Riestra S. Diet and colon cancer. Rev Esp Enferm Dig. 2007;99(4):183-9. Review.
7. Gualdrini UA, Sambuelli A, Barugel M, Gutiérrez A, Avila KC. Prevention of colorectal cancer. Acta Gastroenterol Latinoam. 2005;35(2):104-40. Review.
8. Planas M, Puiggrós C, Redecillas S. Contribution of nutritional support to fight cancer cachexia. Nutr Hosp. 2006;21 Suppl 3:27-36. Review.
9. García Mediero JM, Romero Cajigal I, Angulo Cuesta J, Ferruelo Alonso A, Berenguer Sánchez A. Diet and bladder cancer. Arch Esp Urol. 2006;59(3):239-46. Review.
10. Jané-Salas E, Chimenos-Küstner E, López-López J, Roselló-Llabrés X. Importance of diet in the prevention of oral cancer. Med Oral. 2003;8(4):260-8. Rev
11. Romero Cagigal I, Ferruelo Alonso A, Berenguer Sánchez A. Diet and prostate cancer. Actas Urol Esp. 2003;27(6):399-409. Review.
12. Bradbury KE, Appleby PN, Key TJ. Fruit, vegetable, and fiber intake in relation to cancer risk: findings from the European Prospective Investigation into Cancer and Nutrition (EPIC). Am J Clin Nutr. 2014;100 Suppl 1:394S-8S.
13. Verberne L, Bach-Faig A, Buckland G, Serra-Majem L. Association between the Mediterranean diet and cancer risk: a review of observational studies. Nutr Cancer. 2010;62(7):860-70.
14. Schüz J, Espina C, Villain P, Herrero R, Leon ME, Minozzi S, Romieu I, Segnan N, Wardle J, Wiseman M, Belardelli F, Bettcher D, Cavalli F, Galea G, Lenoir G, Martin-Moreno JM, Nicula FA, Olsen JH, Patnick J, Primic-Zakelj M, Puska P, van Leeuwen FE, Wiestler O, Zatonski W; Working Groups of Scientific Experts. European Code against Cancer 4th Edition: 12 ways to reduce your cancer risk. Cancer Epidemiol. 2015;39 Suppl 1:S1-S10
15. Norat T, Scoccianti C, Boutron-Ruault MC, Anderson A, Berrino F, Cecchini M, Espina C, Key T, Leitzmann M, Powers H, Wiseman M, Romieu I. European Code against Cancer 4th Edition: Diet and cancer. Cancer Epidemiol. 2015 Dec;39 Suppl 1:S56-66.

## RECOMMENDED INTERNET LINKS

AECC. ASOCIACIÓN ESPAÑOLA CONTRA EL CÁNCER. Consejos: Código Europeo Contra el Cáncer.

[http://www.aecc.es/codigo\\_europeo.html](http://www.aecc.es/codigo_europeo.html)  
[http://www.msssi.gob.es/ciudadanos/enfLesiones/.../docs/Codigo\\_Cancer.pdf](http://www.msssi.gob.es/ciudadanos/enfLesiones/.../docs/Codigo_Cancer.pdf)

REGISTRO DE CÁNCER DE GRANADA (RCG).

<http://www.cancergranada.org>

Revista BioCancer.

<http://www.biocancer.com>

SEOM: Sociedad Española de Oncología Médica.

[www.seom.org](http://www.seom.org)



SOCIEDAD AMERICANA CONTRA EL CÁNCER. Guías sobre nutrición y actividad física para la prevención del cáncer.  
<http://onlinelibrary.wiley.com/doi/10.3322/caac.20140/full>  
<http://www.cancer.org/Espanol/salud/Guiasparaunavidasaludable/nutricion/guias-de-la-sociedad-americana-contr-el-cancer-sobre-nutricion-y-actividad-fisica-para-la-prevencion-del-cancer-guidelines>  
[http://www.wcrf.org/cancer\\_research/cup/index.php](http://www.wcrf.org/cancer_research/cup/index.php)  
<http://www.dietandcancerreport.org/>  
<http://www.cancer.org/cancer/cancercauses/dietandphysicalactivity/diet-and-physical-activity>  
[www.aicr.org/assets/docs/pdf/.../heal-well-guide.pdf](http://www.aicr.org/assets/docs/pdf/.../heal-well-guide.pdf)

The European Prospective Investigation into Cancer and Nutrition (EPIC) study.  
[www.epic.iarc.fr/](http://www.epic.iarc.fr/)

Cancer Research UK  
<http://www.cancerresearchuk.org/about-cancer/causes-of-cancer/diet-and-cancer/diet-facts-and-evidence>

