

COURSE SYLLABUS

NOTE: The course has not been offered for teaching due to low demand from students. The outline will be updated and completed by the Teacher in Charge at the start of the teaching

(1) GENERAL

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| SCHOOL | HEALTH SCIENCES MANAGEMENT AND ECONOMICS SCIENCES | | |
| DEPARTMENT | SOCIAL WORK NUTRITION AND DIETETICS SCIENCES BUSINESS ADMINISTRATION AND TOURISM | | |
| LEVEL OF STUDY | Graduate/Master's | | |
| COURSE CODE | CDDA-B13 | SEMESTER | B |
| COURSE TITLE | Body Composition and Energy Expenditure as Health Improvement Indicators | | |
| INDEPENDENT TEACHING ACTIVITIES | TEACHING HOURS WEEKLY | CREDIT UNITS (ECTS) | |
| Lectures | 3 | 7.5 | |
| COURSE TYPE | Special background course –Optional mandatory | | |
| PREREQUISITE COURSES: | No | | |
| LANGUAGE OF TEACHING and EXAMINATIONS: | Greek | | |
| THE COURSE IS OFFERED TO ERASMUS STUDENTS | No | | |
| COURSE WEBSITE (URL) | https://eclass.hmu.gr/courses/SW355/ | | |

(2) LEARNING OUTCOMES

Learning Outcomes

The course provides information on assessing and improving health through assessment of body composition and energy expenditure. Students learn to interpret body composition data and understand metabolic implications to design individualized health improvement plans. The course is offered at the postgraduate level and the learning outcomes correspond to level 7 of the European Qualifications Framework for Lifelong Learning (EQF). Based on the above, after successful completion of the course, students are expected to have or be able to:

- Understand the importance of body composition and energy expenditure in improving health.
- Know the physiological basis of body composition, including adipose tissue, lean mass and their distribution.
- Know physiology mechanisms related to body composition.
- Describe the effect of genetics, age and gender on body composition.
- Understand the basic principles of metabolism.
- Know the factors that influence basal metabolic rate and total daily energy expenditure.
- Describe body composition measurement techniques (anthropometry, bioelectrical impedance, DEXA).
- Critically evaluate the advantages and limitations of each method.
- Know the effect of physical activity, diet and environmental factors on energy expenditure.
- Understand how lifestyle choices affect individual energy needs.
- Investigate the relationship between physical activity and changes in body composition.
- Analyse the role of different modes of exercise in promoting healthy body composition.
- Know the effect of diet and dietary choices on body composition.
- Understand the role of macronutrients and micronutrients in maintaining healthy

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| <p>body composition.</p> <ul style="list-style-type: none"> • Examine the health effects of obesity and related body composition disorders. • Evaluate the effect of aging on body composition and energy expenditure. • Know the nutrition management in elderly people. • Know the effects of neoplastic diseases on body composition. • Discuss how changes in body composition are used as prognostic markers for neoplastic diseases. • Know how chronic diseases are related to changes in body composition |
| General Skills |
| <p>The course aims to provide students with the following general skills:</p> <ul style="list-style-type: none"> • Search, analysis and synthesis of data and information, using the necessary technologies • Independent and group work • Work in an interdisciplinary environment • Decision making • Promotion of free creative and inductive thinking |

(3) COURSE CONTENT

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| <p>The course includes the following thematic sections:</p> <ul style="list-style-type: none"> • Body composition and energy expenditure • Physiology of body composition • Basic principles of metabolism and energy expenditure • Body composition assessment methods • Factors affecting energy expenditure • Exercise and body composition • Nutrition and body composition • Aging and changes in body composition • Body composition in people with neoplasms • Body composition in people with other chronic diseases |
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(4) TEACHING and LEARNING METHODS - EVALUATION

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| METHOD OF DELIVERY | <p>The teaching includes:</p> <ul style="list-style-type: none"> • Interactive face-to-face (in vivo) and distance learning lectures. • Case studies and critical commentary, exercises and group assignments. • Presentation of videos / documentaries and reflective discussion. | |
| USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES | <p>Presentation of PowerPoint slides and videos. Use of the e-class electronic platform to access slides/scientific articles. Frequent communication with students through the same platform and through the teachers.hmu.gr for responding to questions related to the educational process.</p> | |
| TEACHING ORGANIZATION | Activity | Semester Workload |
| | Lectures, Seminars and Interactive teaching | 39 |
| | Study and analysis of articles - bibliography - Independent Study | 149 |
| | Total Course | 188 |

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| STUDENT EVALUATION | Final written exams during the exam period (100% of the final grade). All graded papers are accessible to students Evaluation language: Greek |
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(5) RECOMMENDED-BIBLIOGRAPHY

- Suggested Bibliography:

- Anderson, LJ, Erceg, DN, & Schroeder, ET (2020). Utility of multi-frequency bioelectrical impedance compared to dual-energy X-ray absorptiometry for assessment of total and regional body composition varies between men and women. *Nutrients*, 12(12), 3724.
- Hills, AP, Mokhtar, N., & Byrne, NM (2014). Assessment of physical activity and energy expenditure: an overview of objective measures. *Frontiers in nutrition*, 1, 5.
- Busetto, L., Bettini, S., Makaronidis, J., Roberts, CA, Halford, JC, & Batterham, RL (2021). Mechanisms of weight regain. *European journal of internal medicine*, 93, 3-7.
- Nunes, EA, Colenso-Semple, L., McKellar, SR, Yau, T., Ali, MU, Fitzpatrick-Lewis, D., ... & Phillips, SM (2022). Systematic review and meta-analysis of protein intake to support muscle mass and function in healthy adults. *Journal of cachexia, sarcopenia and muscle*, 13(2), 795-810.
- Ponti, F., Santoro, A., Mercatelli, D., Gasperini, C., Conte, M., Martucci, M., ... & Bazzocchi, A. (2020). Aging and imaging assessment of body composition: from fat to facts. *Frontiers in endocrinology*, 10, 861.
- Liu, C., Cheng, KYK, Tong, X., Cheung, WH, Chow, SKH, Law, SW, & Wong, RMY (2023). The role of obesity in sarcopenia and the optimal body composition to prevent against sarcopenia and obesity. *Frontiers in Endocrinology*, 14, 1077255.
- Lustig, RH, Collier, D., Kassotis, C., Roepke, TA, Kim, MJ, Blanc, E., ... & Heindel, JJ (2022). Obesity I: Overview and molecular and biochemical mechanisms. *Biochemical pharmacology*, 199, 115012.
- Čolak, E., & Pap, D. (2021). The role of oxidative stress in the development of obesity and obesity-related metabolic disorders. *Journal of Medical Biochemistry*, 40(1), 1.

-Related scientific journals:

- American Journal of Clinical Nutrition (AJCN)
- European Journal of Clinical Nutrition
- Exercise and Sport Sciences Reviews
- Journal of Applied Physiology
- Journal of Human Nutrition and Dietetics
- Journal of the Academy of Nutrition and Dietetics
- Metabolism: Clinical and Experimental
- Nutrition and Metabolism
- Obesity
- The Journal of Nutrition