

Module Title Macronutrients	Reference AS1023 SCQF Level SCQF 7 SCQF Points 15 ECTS Points 7.5 Created August 2002
Keywords Macronutrients, malnutrition.	Approved September 2004 Amended February 2011 Version No. 1

This Version is No Longer Current

The latest version of this module is available [here](#)

Prerequisites for Module

None, in addition to course entry requirements.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide students with an understanding of the requirements for macronutrients as sources of energy and for other essential functions, including consideration of protein-energy malnutrition, complementarity of proteins, essential amino acids and fatty acids, and the requirement for

Indicative Student Workload

<i>Contact Hours</i>	Full Time
Assessment	2
Lectures	24
Practicals	5
Tutorials	6
<i>Directed Study</i>	
Directed Study	25
<i>Private Study</i>	
Private Study	88

Mode of Delivery

Theoretical material is delivered by lectures and web-based materials with supporting tutorials and a computer program and calorimetry are used in practical classes.

Assessment Plan

acids, and the requirement for water.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1. Describe macronutrients in terms of their main features including methods of analysis and their distribution in foods.
2. Explain nutritional concepts relevant to macronutrients including that of nutrient balance.
3. Explain the requirements for macronutrients and water and how they are determined.
4. Assess nutrient intakes by a weighed inventory and energy expenditure using an activity diary.

Indicative Module Content

Dietary reference values.
Carbohydrates and dietary fibre.
Lipids, essential fatty acids, eicosanoids. Protein and nitrogen balance. Alcohol.
Water and the basis of its requirement. Energy value of macronutrients, direct and indirect calorimetry, energy balance, and adaptation to altered energy intake and output.

	Learning Outcomes Assessed
Component 1	1,2,3
Component 2	4

Component 2 is a 7-day diet and activity analysis assessed as a competence.

Component 1 is an examination.

Indicative Bibliography

1. BENDER, D.A. *Introduction to nutrition and metabolism*, Current Edition. Boca Raton FL: CLC Press.
2. DEPARTMENT OF HEALTH. *Dietary reference values for food, energy and nutrients for the United Kingdom. Report on health and social subjects, 41*. London: HMSO.
3. GIBNEY, M.J. et al. *Introduction to human nutrition*. Recent Edition. Oxford: Wiley-Blackwell.
4. LANHAM-NEW, S.A., MACDONALD, I.A. and ROCHE, H.M. *Nutrition and metabolism*. Current Edition. Oxford: Wiley-Blackwell.
5. INSEL, P.M., et al. *Nutrition* Current Edition. Burlington, MA: Jones and Bartlett Learning.

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Dietary sources of
macronutrients, their calculation
manually and using a computer
program. Protein-energy
malnutrition, signs and methods
available for prevention.