



MALTA UNIVERSITY CONSULTING



## PHARMACOGNOSY AND HERBAL PRODUCTS

July 2018

(28 hours)

**Course registration fee:** €350

**Closing date for registration:** Monday 11<sup>th</sup> June 2018

**Date:** July (17.00 – 20.00) Mon 2; Thurs 5; Mon 9; Thurs 12; Mon 16; Thurs 19; Fri 20; Wed 25  
(17.00 – 19.00) Fri 27; Mon 30

**Venue:** University Residence, Robert Mifsud Bonnici Street, Lija (ample parking space available)

**Accreditation Level:** This course has been approved by the National Commission for Further & Higher Education as equivalent to Level 6 (5 ECTS) (Licence No: 2013-FHI-019; Further & Higher Education Institution)

**Get Qualified:** This course has been approved by Malta Enterprise under the Get Qualified Scheme.

*This can be done online by registering and applying at: <https://getqualified.maltaenterprise.com/login>. Applications will be accepted until one year from start date of course or by the last day of the calendar year in which the student was awarded the certification'*

**Aim and contents of course:** This course is primarily aimed at Qualified Personnel candidates that work in the pharmaceutical industry having a BSc in Chemistry/Biology, Professionals with a degree in Pharmacy-related subjects and Postgraduate students reading for Master's degree in Pathology/Pharmacology.

Attendees will learn how pharmacognosy has evolved throughout the ages and has developed into a way of life for some patients and consumers. Topics on how the European Union safeguards the European consumer from toxic and harmful natural medicines by a strict directive shall be covered. Due to the distinct classification of herbal substances and preparations into herbal medicines, food supplements and cosmetics, participants are guided on the general characteristics of these herbals from the legal and also scientific points of view to classification of herbal medicines in accordance with the 2004/24/EC herbals directive that has been now implemented in the general medicines directive, 2001/83/EC.

### **Learning outcomes:**

By the end of this course, participants will be able to:

- Define ethnobotany and discuss the methodology used in this field;
- Distinguish between herbal medicines, nutraceuticals (food supplements) and cosmetics with their respective legislation;
- Understand these three categories by examples discussed in class;
- Distinguish between primary and secondary metabolism in terms of role and complexity within the plant species;
- Distinguish the utilisation of plant species to humans with respect to primary and secondary metabolites;
- Compare and contrast metabolites falling under different phytochemical classes particularly terpenoids, alkaloids, flavonoids and shikimate products, tannins, proteins, organic acids, non-flavonoid polyphenolics;
- Understand the different extraction processes depending on the class of metabolites in question;
- Understand the importance of pharmacological and toxicological testing for research but also commercialization of herbal medicines;
- Understand the problems provoked by poisonous plants due to intention or unintentional administration of these plants that may have potentially beneficial pharmacological effects at lower doses.

Attendees will be able to:

- ✓ Apply the principles of ethnobotany and devise a protocol for a specific useful plant;
- ✓ Apply legislative definitions to distinguish between herbal medicines, nutraceuticals and cosmetics;
- ✓ Classify any given compound as a primary or secondary metabolite;
- ✓ Categorise specific compounds into phytochemical classes;
- ✓ Devise an extraction protocol for a given plant with an un/known array of metabolites;
- ✓ Determine the best method of testing for the extract in question;
- ✓ Apply theoretical knowledge to practical and technical issues involving qualitative and quantitative approaches;
- ✓ Discuss the methods of preparation of herbal extracts;
- ✓ Give advice on the preparation of herbal extracts;
- ✓ Discuss with others quality and safety issues of the extract in question;
- ✓ Determine which extracts are safe
- ✓ Assess a herbal medicine dossier with all the scientific information provided
- ✓ Assess whether there is sufficient information on the herbal extract to be registered or authorised on the market
- ✓ Search for information related to ethnobotany and devise a protocol for a specific useful plant;
- ✓ Interpret legislation in terms of herbal medicines, nutraceuticals and cosmetics categorisation;
- ✓ Distinguish any given compound as a primary or secondary metabolite;
- ✓ Commence a study on a new plant or herbal extract;
- ✓ Prepare a dossier for the herbal extract.

**Course outline:** The following topics will be covered throughout the course:

- Introduction to Pharmacognosy: from Tradition to medicine.
- Drug Development in the case of Natural Products.
- History of Herbalism and Ethnobotany
- Legislation: Herbal Products: Medicine or Food?
- Phytomedicines used in Modern Therapies and Nutraceuticals
- Alternative medicine: Herbal Medicine, Aromatherapy and Apitherapy
- Zoopharmacognosy
- Introduction to Secondary Metabolites: Terpenoids, Glycosides, Flavonoids, Tannins and Alkaloids and principles of Extraction and Processing of secondary metabolites from Plants.
- In vitro and in vivo testing of secondary metabolites from Plants
- Poisonous Plants and their metabolites: Their Use and Misuse
- Marine Bioactive Compounds

**Course Tutor:** Prof Everaldo Attard graduated with honours in Pharmacy at the University of Malta (1994) and later furthered his studies on Maltese aromatic and medicinal plants by undertaking a Master of Science degree in Agricultural and Veterinary Pharmacy (1995). He furthered his specialization and obtained a Doctorate in Agriculture from the same University in 2001. Prof Attard has been lecturing in several areas related to medicinal plants and agricultural chemistry at the ex-Institute of Agriculture, Division of Rural Sciences and Food Systems within the Institute of Earth Systems and the Department of Pharmacy at the University of Malta. In 2007 he was officially recognised by the Medicines Authority and appointed as the herbal consultant in assessing herbal medicinal products and food supplements. Since then, he has been the Maltese delegate on the Committee on Herbal Medicinal Products at the European Medicines Agency and the Homeopathic Medicinal Products Working Group of the Heads of Medicines Agencies of the European Union. Prof Attard is the author/co-author of many papers and articles in renowned peer-reviewed medicinal plant journals, articles in professional journals and three book chapters. He has delivered a number of presentations and posters at various conferences both at national and international levels.

**Certification:** Participants who attend at least 80% of the sessions will be awarded a Certificate of Attendance issued by Malta University Consulting Ltd.

**Course Registraton Fee and contact information:** Cheques are to be made payable to **Malta University Consulting Ltd.** For further information kindly contact: Malta University Consulting Ltd, Robert Mifsud Bonnici Street, Lija. Tel: 21 240746/9982 9244; e-mail: [maria.bugeja@muhc.com.mt](mailto:maria.bugeja@muhc.com.mt); website: [www.muhc.com.mt](http://www.muhc.com.mt)