

Environmental Health Department, FHS  
ENHL 300: Introduction to Environmental Health  
Fall Semester AY 2017-18

**I. Course Title:** Introduction to Environmental Health (2 credits)

**II. Course Instructor:** Dr. Mey Jurdi

**E-mail Contact:** [mjurdi@aub.edu.lb](mailto:mjurdi@aub.edu.lb)

**Office Hours:**

Tuesday 11:00 a.m. - 1:00 pm or by Appointment (ENVD, Rm. 420)

**III. Timing:**

Section 1: Tuesday: 9:00-11:00 a.m. Van Dyke Building – Rm 201.

Section 2: Tuesday: 1:00-3:00 p.m. Van Dyke Building – Rm 201.

**IV. Course Description:**

This course introduces students to the physical life support systems and interactions within the socioeconomic context. The course emphasizes the importance of assessing, preventing and controlling environmental hazards affecting human health, and ecological wellbeing. Further, it highlights the role of local and global regulatory systems in influencing change and sustaining a healthy environment. The course will also critically assess means to enable communities through the process of sustainable development is also critically assessed.

**V. Course Learning Objectives:**

By the end of the course, you should be able to:

- LO1. Analyze the interplay between environmental health and other public health disciplines.
- LO2. Describe the interaction of constituents of the physical and social environment.
- LO3. Identify the inter-link between environmental protection and sustainable development.
- LO4. Specify approaches for assessing, preventing and controlling environmental hazards that pose risk for human health and wellbeing.
- LO5. Specify current environmental risk assessment and management tools.
- LO6. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.
- LO7. Identify major occupational risks and hazards in the workplace and appraise control measures.
- LO8. Identify ways that public health interventions and practitioners can engage in environmentally sound practice.
- LO9. Describe local and global regulatory programs, guidelines and authorities that control environmental health issues in Lebanon and the Region.
- LO10. Appraise ethical considerations in environmental and Public health Issues.
- LO11. Critically evaluate an environmental health issue (impacts on human and ecologic health) and recommend sound environmental strategies its management.

## VI. Course Content:

<b>Date</b>	<b>Session/Topic</b>	<b>Learning Objectives (LOs)</b>	<b>Assessment Mode of LOs</b>	<b>Reference Material</b>
<b>Sept. 5 2017</b>	<b>I. Introduction</b> A. Environment and Public Health B.- Visualizing the Environmental System C.- Social Determinants	LO1 & LO2	VII.A, VII.B & VII.C	UR1-UR1d
<b>Sept. 12 2017</b>	<b>II. Environmental Protection &amp; Sustainable Development</b>	LO3	VII.A, VII.B & VII.C	UR2- UR2b
<b>Sept. 19 2017</b>	<b>III. Environmental Assessment and Management Tools (A-B)</b> A. Living Planet Index and Ecological Foot Print. B. The Cost of Environmental Deterioration and the Global Burden of Disease. C. Risk Analysis. D. Strategic Environmental Assessment and Environmental Impact Assessment. E. Environment Sustainability and Environmental Performance Indicators.	LO4 & LO5	VII.A, VII.B & VII.C	UR3 - UR5a
<b>Sept. 26 2017</b>	<b>IV. Environmental Assessment and Management Tools (Cont'd C-D)</b>	LO4 & LO5	VII.A, VII.B & VII.C	UR3 - UR5a
<b>Oct. 3, 2017</b>	<b>V.A. Environmental Assessment and Management Tools (Cont'd E-F)</b> <b>V.B. Environmental Ethics and Justice</b>	LO4 & LO5	VII.A, VII.B & VII.C	UR3 - UR5a UR5b
<b>Oct. 10, 2017</b>	<b>VI. Air Quality Management</b>	LO5, LO6, LO8, LO9 & LO10	VII.A, VII.B & VII.C	UR6 - UR6b
<b>Oct. 17, 2017</b>	<b>VII. Food Safety</b>	LO5, LO6. LO8, LO9 & LO10	VII.A, VII.B & VII.D	UR7- UR7b
<b>Oct. 21, 2017</b>	<b><u>MIDTERM (Sessions I – VII)</u></b>	LO1-LO5 LO8-LO9		
<b>Oct. 24, 2017</b>	<b>VIII. Water Quality and Management</b>	LO5, LO6, LO8, LO9 & LO10	VII.A-B & VII.E	UR8 – UR8b
<b>Oct. 31, 2017</b>	<b>IX. Housing &amp; Indoor Environments</b>	LO5, LO6, LO8, LO9 & LO10	VII.A-B & VII.E	UR9 – UR9a

<b>Nov. 7, 2017</b>	<b>X. Occupational Environments</b>	LO7, LO9 & LO10	VII.D-VII.E	UR10
<b>Nov. 14, 2017</b>	<b>XI. Management of Wastes</b> A. <u>Municipal Solid Wastes</u> B. Hazardous Wastes C. Wastewater	LO4, LO5, LO6, LO8, LO9 & LO1	VII.A-B & VII.E	UR11
<b>Nov. 21, 2017</b>	<b>XII. Management of Wastes</b> A. Municipal Solid Wastes B. <u>Hazardous Wastes</u> D. Wastewater	LO4, LO5, LO6, LO8, LO9 & LO10	VII.A-B & VII.E	UR11
<b><u>Nov. 19, 2017</u></b>	<b><u>Deadline for Submission of Term Paper</u></b>	LO11		
<b>Nov. 28, 2017</b>	<b>XIII. Management of Wastes</b> A. Municipal Solid Wastes B. Hazardous Wastes C. Wastewater	LO4, LO6, LO8, LO9 & LO10	VII.A-B & VII.E	UR11
<b>Dec. 5, 2017</b>	<b>XIV. Environmental Sustainability in the Arab Region</b>	LO1-LO10	VII.E	UR12
<b>To be assigned</b>	<b>FINAL EXAM (Sessions VII-XIV)</b>			

### **VII. Course Evaluation:**

<b>VII A</b>	Attendance and Class Contribution	<b>5%</b>
<b>VII B</b>	Case Studies	<b>10%</b>
<b>VIIIC</b>	Midterm Exam	<b>30%</b>
<b>VIIID</b>	Term Paper	<b>20%</b>
<b>VIIIE</b>	Final Exam	<b>35%</b>
		<b>100%</b>

### **VIII. Useful References:**

#### **Session I: Introduction:**

UR1. Fris, R.H. (2012). Essentials of Environmental Health (Chapter 1: Introduction: The Environment at Risk Pages 14-21), Second Edition. Johns and Barlett Learning, USA.

UR1a. Fris, R.H. (2012). Essentials of Environmental Health (Chapter 4: Environmental Policy and Regulations Pages 67-91), Second Edition. Johns and Barlett Learning, USA.

UR1b. World Health Organization (1999). “Environmental Health Indicators; framework and methodologies” World Health Organization Sustainable Development and Healthy Environments. WHO/SDE/OEH/99.10. Available at: <http://www.who.int/ceh/publications/cehframework/en/>

UR1c. Cutter, S.L., Boruff, B. J., and Shirley, W. L. (2003). “Social Vulnerability to Environmental Hazards”. Social Science Quaternary 84(2): 242-261. <http://www.colorado.edu/hazards/resources/socy4037/Cutter%20%20%20Social%20vulnerability%20to%20environmental%20hazards.pdf>

UR1d. Cutter, S.L (2013). Social Vulnerability Analysis Background to Concept and Measurement. Presented at the Multihazard Mitigation Council Symposium, January 8, 2013. Washington D.C. Available at: [https://c.ymcdn.com/sites/www.nibs.org/resource/resmgr/Conference/MMC\\_SCutter.pdf](https://c.ymcdn.com/sites/www.nibs.org/resource/resmgr/Conference/MMC_SCutter.pdf)

## **Session II: Environmental Protection and Sustainable Development:**

UR2. United Nations (2012). “The Millennium Development Goals Report 2012” Available at: <http://www.unfpa.org/public/home/publications/pid/6090>

UR2a. United Nations (2012). “Rio + 20: The Future We Want” Available at: <http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf> OR [http://www.emro.who.int/Publications/emhj/14\\_S1/PDF/14\\_s1\\_15.pdf](http://www.emro.who.int/Publications/emhj/14_S1/PDF/14_s1_15.pdf)

UR2b. UN (2015). “The Millennium development Goals 2015” Available at: [http://www.un.org/millenniumgoals/2015\\_MDG\\_Report/pdf/MDG%202015%20rev%20\(July%201\).pdf](http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf)

## **Sessions III-V: Environmental Assessment and Management Tools:**

UR3. WWF Global (2014). Living Planet Report 2016. Available at: [http://awsassets.panda.org/downloads/lpr\\_living\\_planet\\_report\\_2016.pdf](http://awsassets.panda.org/downloads/lpr_living_planet_report_2016.pdf)

UR3a. Arab Forum for Environment and Development (AFED) (2012). “Arab Environments 5 Survival options; Ecological Footprint of Arab Countries”. Available at: <http://www.afedonline.org/report2012/eng2012.html>

UR3b. Sarraf, M., Larsen, B. and Owagan, M (2004). “Cost of Environmental Degradation: The Case of Lebanon and Tunisia”. The World Bank, Washington DC. Available at: <http://www.meo.gov.html>

UR3c. Global Forum for Health Research (2006). “Application of the Burden of Disease Analysis in Developing Countries”. Available at: <http://globalforumhealth.org>

UR3d. Hilgenkamp, R. (2006).”Environmental Health Ecological Perspective (Chapter 6: Environmental Risk Assessment and Interventions. Jonnes and Barlett Publishers. Massachusetta, USA, Pages 98-111).

UR3e. Achieng Ogola. P.F. (2007). Environmental Impact Assessment General Procedures. Presented at Short Course II on Surface Exploration for Geothermal Resources. Organized by UNU-GTP and KenGen, at Lake Naivasha, Kenya, 2-17 November, 2007.

UR4. Esty, D.C, Levy, M.A. and Winston A (2003, 2005, and 2008). “Environmental Sustainability in the Arab Region” Available at: [www.yemenembassy.org/.../WEF/Page\\_236\\_248\\_Environment.pdf](http://www.yemenembassy.org/.../WEF/Page_236_248_Environment.pdf)

UR4a. Yale Center of Environmental law and Policy (2016). “Environmental performance Index 2016” Available at: [https://issuu.com/2016yaleepi/docs/epi2016\\_final](https://issuu.com/2016yaleepi/docs/epi2016_final)

UR4b. Abuzaid, H., (2008). “Health and the Environment with focus on the Eastern Mediterranean Region” Eastern Mediterranean Health Journal 14 (Special Issue): S123-S-142. Available at: [http://www.emro.who.int/Publications/emhj/14\\_S1/PDF/14\\_s1\\_15.pdf](http://www.emro.who.int/Publications/emhj/14_S1/PDF/14_s1_15.pdf)

UR5. Yale University (2016). Global Metrics for the Environment: the Environmental Performance Index Available at: [http://epi.yale.edu/sites/default/files/2016EPI\\_Full\\_Report\\_opt.pdf](http://epi.yale.edu/sites/default/files/2016EPI_Full_Report_opt.pdf)

UR5a. United Nations Environmental Program (2016). “Summary of the Sixth Global Environmental Outlook Regional assessments: Key findings and policy messages Press Ltd, Malta. UNEP/EA.2/INF/17. Available at: [http://apps.unep.org/redirect.php?file=/publications/pmtdocuments/Summary\\_of\\_the\\_sixth\\_global\\_environment\\_outlook\\_GEO6\\_Regional\\_assessments\\_Key\\_findings\\_and\\_policy\\_messages\\_UNEP\\_EA2\\_INF\\_17-2016GEO-6\\_summary\\_en.p.pdf](http://apps.unep.org/redirect.php?file=/publications/pmtdocuments/Summary_of_the_sixth_global_environment_outlook_GEO6_Regional_assessments_Key_findings_and_policy_messages_UNEP_EA2_INF_17-2016GEO-6_summary_en.p.pdf)

### **Session V: Environmental Ethics:**

UR5b. Frunkim, H. Ed. (2005) “Environmental Health from Global To Local (Chapter 7: Environmental Health Ethics. Pages 143- 169). Jonney Wiley & Sons.

### **Session VI: Air Quality**

UR6. Fris, R.H. (2012). Essentials of Environmental Health (Chapter 10: Air Quality Pages 244-277), Second Edition. Johns and Barlett Learning, USA.

UR6a. World Health Organization (2016). Air pollution Levels Rising in many of the World’s Poorest Cities. Available at: <http://www.who.int/mediacentre/news/releases/2016/air-pollution-rising/en/>

UR6b. World Health Organization (2016).\_WHO’s Urban Ambient Air Pollution Database - Update 2016. Available at: [http://www.who.int/phe/health\\_topics/outdoorair/databases/AAP\\_database\\_summary\\_results\\_2016\\_v02.pdf](http://www.who.int/phe/health_topics/outdoorair/databases/AAP_database_summary_results_2016_v02.pdf)

### **Session VII: Food Safety**

UR7. Hilgenkamp, R. (2006). Environmental Health Ecological Perspective (Chapter 13: Food Safety Concerns. Pages 238-259). Jonnes and Barlett Publishers. Massachusetts, USA.

UR7a. World Health Organization (2015). Food Safety. Fact Sheet # 399. Available at: <http://www.who.int/mediacentre/factsheets/fs399/en/>

UR7b. World Health Organization (2015). WHO Estimates of the Global Burden of Foodborne Diseases: Foodborne diseases burden epidemiology reference group 2007-2015. Available at: [http://www.who.int/foodsafety/publications/foodborne\\_disease/Corrigendum.pdf?ua=1](http://www.who.int/foodsafety/publications/foodborne_disease/Corrigendum.pdf?ua=1)

### **Session VIII: Water Quality and Management:**

UR8. Fris, R.H. (2012). Essentials of Environmental Health (Chapter 9: Water Quality Pages 208-241), 2<sup>nd</sup> Edition. Johns and Barlett Learning, USA.

UR 8a. World Health Organization and United Nations Children’s Fund Joint Monitoring Program for Water Supply and Sanitation (2015). “25 Years Progress on Sanitation and Drinking Water: 2015 Update and MDG Assessment”. UNICEF, New York and WHO Geneva. Available at: [http://www.wssinfo.org/fileadmin/user\\_upload/resources/JMP-Update-report-2015\\_English.pdf](http://www.wssinfo.org/fileadmin/user_upload/resources/JMP-Update-report-2015_English.pdf)

UR 8b. World Health Organization and United Nations Children’s Fund Joint Monitoring Program for Water Supply and Sanitation (2017). Progress on Water, Sanitation and Hygiene- Update and SDG Baselines. UNICEF, New York and WHO Geneva. Available at: <http://www.unwater.org/publications/whounicef-joint-monitoring-program-water-supply-sanitation-hygiene-jmp-2017-update-sdg-baselines/>

### **Session IX: Housing & Indoor Environments**

UR9: Hilgenkamp, R. (2006).”Environmental Health Ecological Perspective (Chapter 15: Housing and Indoor Environment. Pages 284-303). Jonnes and Barlett Publishers. Massachusetta, USA.

UR9a. World Health Organization (2016). Indoor Air pollution and the Millennium Development Goals Available at: <http://www.who.int/indoorair/mdg/en/>

### **Session X: Occupational Health and Safety**

R10. Hilgenkamp, R. (2006).”Environmental Health Ecological Perspective (Chapter 17: Occupational Health and Safety. Pages 322-335). Jonnes and Barlett Publishers. Massachusetta, USA.

### **Sessions XI-XIII: Waste Management**

UR11. Fris, R.H. (2012). Essentials of Environmental Health (Chapter 12: Solid and Liquid waste Pp: 322-345), 2<sup>nd</sup> Edition. Johns and Barlett Learning, USA.

### **Session XIV: Environmental Sustainability in the Arab Region,**

UR12. Jurdi M et al (2012). Environmental Degradation: the Challenge of Sustaining Life in Jabour et al (ed.) Public Health in the Arab World. Cambridge University Press Chapter 4: Pp 47-59.

## **IX. Attendance**

Attendance is necessary based on AUB rules and regulations. “A student who is absent without excuse for more than one third of the number of sessions in any course may be dropped by the instructor of the course” (AUB Graduate Catalogue AY 2017-18, Pp: 50).

## **X. Students with Special Needs**

If you have documented special needs and anticipate difficulties with the content or format of the course due to a physical or learning disability, please contact me and/or your academic advisor, as well as the Counseling Center in the Office of Student Affairs (Ext. 3196), as soon as possible to discuss options for accommodations. Those seeking accommodations must submit the Special Needs Support Request Form along with the required documentation.”

## **X. Academic Integrity**

The American University of Beirut has a strict anti-cheating and anti-plagiarism policy. So please review the AUB Graduate Catalogue AY 2016/17 (Pp: 47-48), and familiarize yourself with definitions and penalties. If you are in doubt about what constitutes plagiarism, ask because it is your responsibility to know.

*Work Hard*

*And*

*Enjoy the Semester*