Example form for Module Handbook (Đề cương tổng quát môn học)

A **Module Handbook or collection of module descriptions that is also available for students to consult** should contain the following information about the individual modules:

Module designation (Tên môn học)	*Biological processes in environmental engineering*
Semester(s) in which the module is taught (Học kỳ giảng dạy)	*Semester 5*
Person responsible for the module (	*Assoc./Prof. Dr. Bui Xuan Thanh* *Please indicate a specific person.*
Language (ngôn ngữ)	*English, Vietnamese*
Relation to curriculum (Các môn học liên quan)	*Chemistry for Environmental Engineering (required)* *Names of other study programmes with which the module is shared (Environmental Engineering program)*
Teaching methods (Phương pháp giảng dạy)	*Lecture, seminar (invited expert, if any), presentation, video, lab visit (if any).*
Workload (incl. contact hours, self-study hours) (Thời lượng làm việc)	*Total workload:* *- 45 hr of lecture,* *- 135 hous of self-study*
Credit points (số tín chỉ)	*3*
Required and recommended prerequisites for joining the module (những yêu cầu kiến thức trươc khi học)	*Basic knowledge on:* *- Environmental Chemistry;* *- Analytical chemistry;* *- Microbiology.*
Module objectives/intended learning outcomes (Mục tiêu môn học, yêu cầu CĐR)	*Student understand the basics of biological processes and its application in environmental engineering.* – *Student understands the nature of biological processes in environment.* – *Students know how to calculate/apply the therory into practice.* – *Knowledge: familiarity with information, theory and/or subject knowledge* *Skills: cognitive and practical abilities for which knowledge is used* – *Competences: integration of knowledge, skills and social and methodological capacities in working or learning situations*[1]
Content (Nội dung)	– *Introduction, parameters used, pollutants transformation, kinectic, reaction rate, microbe growth, activated sludge processes, anaerobic processes, operational problems and solution, calculations and design.*
Exams and assessment formats (Hình thức kiểm tra và thi)	• *Midterm: Term project (30 minutes/presentation)* • *Final exam: Writting exam (60-120 minutes)*

[1] Cf. European Commission: Proposal for a Recommendation of the European Parliament and the European Council on the establishment of the European Qualifications Framework for lifelong learning, COM(2006) 479 final, 2006/0163 (COD), Brussels 05/09(2006.

Study and examination requirements (Tỉ lệ đánh giá học tập)	• *Midterm: 30%* • *Final exam: 70%*
Reading list (Tài liệu)	• Metcalf & Eddy, (1991 & 2003), *Wastewater Engineering: Treatment and Reuse (3 rd & 4 th edition),* McGraw-Hill • Nguyễn Văn Phước, *Giáo trinh xử lý nước thải sinh hoạt và công nghiệp bằng phương pháp sinh học*, NXB Xây Dựng, 2007. • C.P. Leslie Grady, Glen T. Daigger, Henry C. Lim (1999), *Biological Wastewater treatment,* Marcel Dekker Inc • Joseph S. Devinny, Marc A. Deshusses, Todd S. Webster (1998), *Biofiltration and Air Polution Control,* Lewis Publishers. • Bui Xuan Thanh, Chart Chiemchaisri, Takahiro Fujioka, Sunita Varjani (2018). Water and Wastewater treatment technologies, 2018, Springer. • Bùi Xuân Thành (2012), *Sổ Tay Hướng Dẫn Thiết Kế các Công Trình Xử Lý sinh học,* NXB ĐH Quốc Gia TPHCM • Bùi Xuân Thành & Lê Văn Khoa (2013), *Thuật ngữ chuyên ngành kỹ thuật & quản lý nước – nước thải,* NXB ĐH Quốc Gia TPHCM • Journals: Water Research, Bioresource Technology, Journal of Membrane Sciences, Environmental Technology, Water Scienceand Technology, Environmental Science Technology, Environmental Technology and Innovation, etc.