MECH 1905 – Buildings for Contemporary Living

School:	**School of Engineering**
Subject Area:	**Mechanical and Aerospace Engineering**
Course Credit:	**3**
Instructor:	**NG Lung Fai Moses**
Pre-requisite/co-requisite:	**Nil**

Notes:

- The syllabi provided here is for reference only and may be subject to changes and adjustments as determined by the course instructors.

MECH1905 Building for Contemporary Living

Course Code: MECH1905	**Course Title:** Building for Contemporary Living
Required Course Or Elective Course:	**Terms Offered (Credits):** Spring (3 credits)
Faculty In Charge: Yi-Kuen Lee	**Pre/Co-Requisites:** NA
Course Structure: 2 classes (1.5 hours) per week	
Textbook/Required Material: Class notes and online references on Canvas	

Bulletin Course Description:

(1) This course introduces the applications of modern mechanical engineering technologies to buildings systems and how they relate to our livings. A wise design of building systems could offer high convenience to the occupants. Also, building systems such as water supply, safety and air conditioning are of high importance to maintain a satisfying temperature, humidity, lighting and indoor air quality for comfortable living and efficient working.

(2) Most technologies require energy to provide the services needed and understandably. This course also introduce the latest trend of building design, such as intelligent and green buildings and how to maintain the sustainability and efficiency of the whole building in terms of building duration, energy and operation.

(3) The aim of the course is to provide students fundamental understanding and latest case studies on the current technologies for attaining contemporary living, and the difficulties we are facing that we may be ready for future challenges.

Course Topics:

(1) Introduction
(2) Urban Living
(3) Building Systems
(4) Intelligent/Smart Buildings
(5) IoT Sensors Technologies for Buildings
(6) Green Buildings
(7) Heat Transfer in Buildings
(8) Air-Conditioning and Refrigeration
(9) Water Supply for Buildings
(10) Guest lecture about advanced topics

Course Objectives:	1. To equip the students with fundamental working principles and technologies in building services 2. To introduce basic and entry level theories and terminology of mechanical engineering that are foundations of building services 3. To provide students an overview and understanding of the social and environmental influence related to building services
Course Outcomes:	1. Students are grouped to a mini project where the basic principles of science will be applied to the development of building systems and how energy is used and the consequential social and philosophical implications of scientific discoveries and technological development will be evaluated.

	2. Societal and behavioral issues raised from the developments of contemporary living will be analyzed. Along with different cases studies and guest lecture to extend the exposure of students to international building projects. 3. The importance of physical, psychological, social, and occupational wellness will be recognized and worked out with the development of different technology.
Assessment Tools:	(1) Attendance and Quiz via Canvas 15 % (2) Mid-term Examination 35 % (3) Final Examination 50 %