Architecture 565 "Research in Environmental Technology" (3-credit hrs.)
Time: Monday, 8:00 to 11:30 AM – Flexible hours if necessary
Location: Room 2227-Art & Architecture Building, North Campus,
Instructor: Mojtaba Navvab, Ph.D., FIES, Art & Arch. Bldg. Email:,moji@umich.edu
Office: Rm.1205D. Laboratory: B.T. Computer Laboratory, Room 1221.

DESCRIPTION: This course focuses on applying research methods and tools to better understand the use of technology in building design. Students will explore and examine the impact of technology in buildings, in some cases, through "hands-on" exercises. In addition, an understanding of particular technology-related issues, including the ability to conduct relevant research and its application at the different design stages, is presented.

OBJECTIVES: The course participants will learn how to use and develop methods to study a chosen design problem in-depth. This study may consist of building design evaluations (design awarded buildings), computer simulations, laboratory experiments, computer modeling, or combinations of these research methods. In addition, this course's essential goal is to develop competence in collecting, analyzing, and reporting research data to gain confidence and knowledge in evaluating other architectural-related research work. As designers and researchers, students intending to successfully enter and advance within the current architecture profession should acquire these skills.

ORGANIZATION: A series of formal lectures on building technology and design-related analysis techniques, including applying the latest building standards toward LEED certification based on the recommended process by USGBC for various building types, will be presented. In addition, numerous case studies will be discussed to highlight individual design solutions toward sustainable building design and building standards compliance.

Possible Areas of Research:
1) Design Alternatives: This area permits the students to study their own or proposed design project to investigate the implication of each design alternative.
2) Evaluation of Existing Design Solutions: This area allows students to explore and examine existing architectural design awarded buildings.
3) Design for Environment: This area allows students to apply and test new technology and building standards toward LEED certification of a building and testing the implementation of new technology, such as additive manufacturing, known as 3D printing, as part of the future growth within architectural design.