EE8061 - INNOVATION AND TECHNOLOGY MANAGEMENT

Academic Units | 3
Contact Hours | Lectures (39)
Pre-requisite | -

**Learning Objective**
The course aims to provide a broad understanding of the dynamics of technological development through innovation and the related management issues and practices.

**Contents**

**Student Assessment**
- Continuous Assessment
- Written Examination

**Textbook**

**References**

EE8064 - INTELLECTUAL PROPERTY FOR ELECTRONIC ENGINEERS

Academic Units | 3
Contact Hours | Lectures (26); Tutorials (12)
Pre-requisite | -

**Learning Objective**
The course aims to equip students with essential knowledge about Intellectual Property (IP) and its significance in the electronics/semiconductor/IC design industry. There is a need to move towards innovation and enterprise, and research and development to rejuvenate future economic growth. The knowledge-intensive electronics industry is one such area that provides a realm for innovation, and therefore, its chemistry with the IP Law is important. The search for new and more innovative electronic gadgets can continue to be pursued only by acquiring legal protection via IP rights. As a result, students should equip themselves with substantial understanding of the numerous forms of IP and the governing legal principles to efficiently protect and exploit their own inventions, on top of thriving on the ownership of IP.

**Contents**

**Student Assessment**
- Continuous Assessment
- Written Examination

**Textbook**

**References**
EE8066 - HAPPINESS 101

Academic Units | 3
Contact Hours | Lectures (39)
Pre-requisite | -

Learning Objective

Happiness 101 is the scientific study of the strengths and virtues that enable individuals and communities to thrive and not just survive. This field is founded on the belief backed by Positive Psychology empirical studies that people can lead meaningful and fulfilling lives by cultivating what is best within themselves, and to enhance their happier experiences of love, work, and play.

Contents

Specifically the course is designed to: (a) Understand the fundamental ideas of Positive Psychology - and how these ideas can radically change the way we relate to ourselves and others; (b) Increase the "positivity ratio" as a means toward higher levels of creativity, motivation, health, and overall success - in individuals, groups, and organizations; (c) Use a variety of scientifically proven techniques from within the Positive Psychology toolbox that can lead to lasting change rather than a temporary high; (d) Practice the art and science of effective communication - how to present ideas, with authenticity, to individuals and groups; (e) Understand the key drivers of healthy and happy interpersonal relationships, and learn how to apply this understanding to one's own and others' relationships; (f) Practice and learn a variety of mind-body techniques that help enhance physical and mental health.

Student Assessment

- Continuous Assessment
- Written Examination

Textbook


EE8067 - CERAMICS IN HISTORY, ARTS, GEMSTONES, ENVIRONMENT, AND MODERN LIFE

Academic Units | 3
Contact Hours | Lectures (39)
Pre-requisite | ‘O’ Level Physics or equivalent

Learning Objective

Ceramics have a wide range of forms such as rocks, soils, sands, gemstones, architecture-blocks, and as various functional materials from insulator to semiconductor to superconductor, piezoelectrics, ferroelectrics, ferromagnetics, optical ceramics, etc. This course will introduce students to the basic concepts and applications in electrical, electronic, optical, energy, civil, environment and pollution control areas and allow them to learn the role of ceramics in history, arts, social and cultural development, and appreciate the fact that we live in, touch on, and use ceramics in our daily modern life.

Contents


Student Assessment

- Continuous Assessment
- Written Examination

Textbooks


References

EE8084 - CYBER SECURITY
Academic Units | 3
Contact Hours | Lectures (26); Tutorials (12)
Pre-requisite | -

Learning Objective
The objective of this course is to provide students with basic appreciation and understanding of the underlying security issues and implications of the use of various networked systems and electronic devices in the modern cyber-society from a user perspective. Topics to be covered include overview of information systems and devices in a global network environment, threats to information systems and devices, security models, and concepts for secrecy, integrity and availability. Other topics of security concerns will also be explored: evaluations of secure information systems, security requirements analysis, security management policies, security trends and emerging technologies.

Contents

Student Assessment
- Continuous Assessment
- Written Examination

Textbook

References

EE8085 - ELECTRIFICATION FOR THE BUILT ENVIRONMENT
Academic Units | 3
Contact Hours | Lectures (39)
Pre-requisite | -

Learning Objective
The objective of this course is to impart to students knowledge pertaining to the generation and distribution of electricity, and how electricity usage impacts on a modern society. Essential aspects of power system technology, electricity utilization and recent developments on electricity industry restructuring would be discussed. Energy conservation and safety issues will also be covered.

Contents

Student Assessment
- Continuous Assessment
- Written Examination

Textbook

Reference
EE8086 - ASTRONOMY – STARS, GALAXIES AND COSMOLOGY

Academic Units | 3
Contact Hours | Lectures (39)
Pre-requisite | -

Learning Objective
The basic goal of this course is to give students a fundamental understanding of astronomy. Through the course, the students will learn about the birth of the universe, the origin of galaxies, the evolution of stars and the formation of planets. Our solar system will be one of the main topics to be studied. Some unanswered mysteries of the universe and mankind will be discussed and hopefully lead the students to further their own exploration. During this course, the diverse facts that form the context of a science will be delivered. During the course, students will also have opportunities to participate in various practical sessions and trips may be organized where appropriate.

Contents
The origin of modern astronomy – An introduction. Learn to read the stars. Overview of the solar system. The beginning and life of stars. The mysteries ahead. The future of space exploration.

Student Assessment
• Continuous Assessment
• Written Examination

Textbook

References

EE8087 - LIVING WITH MATHEMATICS

Academic Units | 3
Contact Hours | Lectures (26); Tutorials (12)
Pre-requisite | -

Learning Objective
Mathematics plays a fundamental role in everyday life. The purpose of this course is to explore the various topics of mathematics, e.g. algebraic equations, trigonometry, conic sections, functions, differentiation and integration, which have direct applications in real world problems. Students will learn (i) how to translate real life problems into appropriate mathematical context and (ii) skills and techniques for solving these problems.

Contents

Student Assessment
• Continuous Assessment
• Written Examination

References
EE8092 - DIGITAL LIFESTYLE
Academic Units | 3
Contact Hours | Lectures (39)
Pre-requisite | -

Learning Objective
iPod and MP3 players, 3G mobile phones, Multi-megapixel digital cameras, Spy cameras, 3CCD video camcorders, Intel Pentium Core-Duo Processors, Xbox/PlayStation, LCD/Plasma/HD TVs, and Dolby Digital Surround Sound play a big part in our lives today, but do you really know how these digital gadgets and technologies work? Do you know how to choose among the various brands and features that best suit your budget and requirements? Enroll into this course, and you won't be baffled by salespersons, advertisements and terminologies. The digital gadgets and lifestyle covered in this course include: Home Entertainment Systems, Game Consoles, Digital Audio Players and Systems, Digital Cameras and Video Camcorders, Personal Computers, Mobile Phones and PDA.

Contents
Home entertainment systems and game consoles. Digital audio systems. Digital cameras and video camcorders. Personal computers. Mobile phones and PDA.

Student Assessment
• Continuous Assessment
• Written Examination

Textbooks

References

EE8093 - ENERGY DEVICES FOR SUSTAINABLE URBAN ENVIRONMENT
Academic Units | 3
Contact Hours | Lectures (39)
Pre-requisite | -

Learning Objective
This course will introduce students to the basic operating principles and applications of photovoltaic devices used for solar energy conversion, thermoelectric devices for energy harvesting and electrochemical devices for renewable energy storage.

Contents

Student Assessment
• Continuous Assessment
• Written Examination

Textbooks

References
Learning Objective
This course covers the fundamental process of innovation through its implications on organizations and innovation ecosystems. It emphasizes historical and modern examples of innovation in materials and devices, and discusses the final implications for innovation ecosystems. This course also presents a simple model for students to understand the innovation process as a highly iterative process, in which many factors in the areas of Technology, Market and Implementation are cycled repeatedly through until the right pieces come together.

Contents

Student Assessment
• Continuous Assessment

Textbook

Reference
1. The online reading material will be available through the course website.