The Edward de Bono Institute for the Design and Development of Thinking
UNIVERSITY OF MALTA

Master in Creativity and Innovation

AIMS AND STUDY UNITS DESCRIPTIONS

Courses commencing October 2008 or later

email: instituteofthinking@um.edu.mt

website: http://home.um.edu.mt/create
In a changing environment, the future is not necessarily a repetition of the past. There is a central role for human thinking processes to cope with and make the best of the changes which are occurring all around us. The Master in Creativity and Innovation focuses directly on the skills of creativity and design.

The Master in Creativity and Innovation is an innovative and challenging programme, designed to be useful for anyone who wishes to improve their skills where creativity and innovation are concerned. An integration of experiential and cognitive approaches prepares participants to tackle concrete situations in a flexible manner which allows for the development of operational skills and creative possibilities.

The Master Degree Program is based on the world-renowned de Bono methods and on creativity, innovation and management in organisations - which applies to all fields as it is understood in a broad sense. Graduates would be expected to move on to managerial posts in organisations that recognise and value the crucial importance of key competencies, transferable skills and knowledge where creativity and innovation are concerned.

The Master in Creativity and Innovation is composed of both taught study units and research. Students are expected to obtain a total of 90 ECTS over a period of three academic semesters full time or six academic semesters part time (60 ECTS - taught study units; 30 ECTS - final dissertation). The study units will be offered during the daytime (ca. 0800 – 1700 hrs). Maltese residents who wish to follow this Master program on a part time basis will be expected to make all the necessary arrangements to attend lectures as attendance is compulsory.

Due to the interdisciplinary nature of this postgraduate degree, students are expected to come from a number of different backgrounds that include business management, marketing, economics, policy, IT, media, education, and other fields. These would consist of ambitious and motivated persons who acknowledge the importance of creativity and innovation in today’s global and constantly changing environment and who wish to become instigators of change in their particular field of expertise. The Master in Creativity and Innovation includes a number of workshops through which students can apply the methods, skills and techniques that they learn.

Through this postgraduate degree, the University of Malta is offering a specialist, innovative, unique and interdisciplinary post-graduate degree which should be useful in a number of organisational contexts. For further information on the University of Malta see [http://um.edu.mt](http://um.edu.mt). International students can access relevant details on the International Office website at [http://um.edu.mt/intoff](http://um.edu.mt/intoff).

“Traditional university education has been concerned with knowledge, analysis and judgement. In a rapidly changing world, the categories and classifications derived from the past may not be enough. There is also a need to develop the skills of design in its broadest sense: new concepts, new perceptions and new ways of doing things. Such design needs creativity. For the first time in history, we can now treat creativity in a systematic way as the changing of patterns in self-organising systems. There is a growing demand for such new thinking and a need to pay attention to these new demands from society.”

Edward de Bono.

*****

The University of Malta’s courses are subject to a continuous process of review. While every effort has been made to ensure the accuracy of material in this document, the University is not liable for any errors or omissions. The University of Malta reserves the right in every case at its discretion to vary the contents of courses or parts of courses, to offer new courses, to discontinue existing courses and to cancel courses in the event of low enrolments.
TAUGHT COMPONENT

In addition to the compulsory study-units, students are required to register for a total of 24 ECTS credits as elective study-units, from the list shown hereunder:

YEAR ONE

Semester 1

Compulsory Study-Units (all students must register for these units)

IOT 5019 Creativity: Idea generation, methods and applications 10 credits
IOT 5020 Entrepreneurship: Innovation and foresight in practice 8 credits
IOT 5021 Strategic marketing and creative decision making 6 credits
IOT 5004 Qualitative and quantitative research methods 6 credits

Elective Study Unit

IOT 5011 Creativity and innovation in the media 4 credits

Semester 2

Compulsory Study Units (all students must register for these units)

IOT 5023 Creativity, innovation and new digital technologies 6 credits

Elective Study Units

IOT 5006 Enhancing business performance through strategic innovative design 4 credits
IOT 5007 Foresight techniques for creativity and innovation 4 credits
IOT 5024 Creativity: Psychological perspectives 4 credits
IOT 5025 Innovation diffusion: Selection, complexity and probability dynamics 4 credits
IOT 5026 Innovation in organisations 4 credits
IOT 5027 Creativity and innovation in education, science and technology       4 credits

**RESEARCH COMPONENT**

YEAR TWO

**Semester 3**

**Compulsory Study Unit** *(all students must register for this unit)*

IOT 5030 Dissertation       30 credits

**Total Workload**       90 credits

**Requirement for award of Master in Creativity and Innovation:**
- 60 credits – taught study-units
- 30 credits – research component
- 90 credits – total credits

Note. This course of study is governed by “The General Regulations for University Postgraduate Awards, 2007” and by the Bye-Laws for the award of the Master in Creativity and Innovation under the auspices of the Edward de Bono Institute for the Design and Development of Thinking.
Code: IOT 5019
Title: Creativity: Idea generation, methods and applications
Type: Lectures, workshops and distance learning
ECTS Credits: 10
Pre-Requisite Study Units: nil

Method of Assessment: Presentation: 25%
Assignment: 25%
Examination: 50%

Result: Percentage Mark and Grade

Lecturers: Professor Edward de Bono, Dr. Sandra M. Dingli
and Ms. Shirley Pulis Xerxen (coordinator)

Learning Objectives:

On completion of this study unit students are expected to:

- Understand the importance of creativity and the manner in which theorists claim that it can be generated
- Understand the important role that perception plays in the process of thinking and of creativity
- Learn to apply tools and methods (including Edward de Bono’s Lateral Thinking, Six Thinking Hats, DATT and CoRT tools) which will enable them to generate new ideas and to broaden their perception
- Be proficient in the application of various methodologies and to understand the variety of situations to which they may be applied.
- Apply critical thinking skills to their own work and that of others

Description:

This study unit offers a variety of perspectives on creativity with particular emphasis on the de Bono thinking methods. Students will gain an understanding of the implications of creativity and its applications. Interactive workshops will enable students to apply the tools of creative and critical thinking.

During the intensive workshops which will form an integral part of this study unit, emphasis will be placed on the variety of uses for these methodologies and on the practical application of the tools learnt. Students will be expected to understand the importance of skill acquisition (as opposed to knowledge or understanding) where such methodologies are concerned.

The topics which this study unit will cover include the following:

- An introduction to creativity and creative thinking
- The importance of perception
- Edward de Bono’s tools and methods:
  - Lateral thinking
  - Six thinking hats
  - DATT and CoRT
- Other generic creativity tools and applications (eg. TRIZ, SCAMPER and CPS)
- Mind mapping
- Critical Thinking
Serious Creativity and Lateral Thinking

Understanding the logic of creativity does not itself make you more creative. But it does make you aware of the necessity for creativity. It also explains the design of certain creative techniques and shows why apparently illogical techniques are actually quite logical within the logic of patterning systems. Above all, understanding the logic of creativity motivates a person to do something about creativity.

(de Bono, 1993: 5)

The great focus on developing creative thinking tools and skills that is happening across the world indicates a broadly shared view that creativity and innovation are crucial to success within the emerging global knowledge community.

Lateral thinking, in contrast to logical or rational thinking, is unpredictable and unconventional – thinking outside the box. In de Bono’s words lateral thinking ‘emphasizes the searching for different approaches and different ways of looking at things.’ (de Bono, 1993: 54). He further suggests that lateral thinking skills can be learnt and that there are specific techniques that can facilitate this acquisition.

DATT (Direct Attention Thinking Tools) and CoRT (Cognitive Research Trust)

Edward de Bono’s DATT (Direct Attention Thinking Tools) and CoRT (Cognitive Research Trust) are thinking programmes specifically designed for use in business management (DATT) and education (CoRT). They consist of a number of thinking tools that are simple but which, when used effectively, can be very powerful. The tools help to make thinking performance more deliberate, more structured, more organised and more effective. Correct use of the thinking tools helps to avoid wrong decisions.

Knowledge of the DATT and CoRT thinking tools will help students to improve the quality of their thinking, become team leaders and be prepared to accept new responsibilities. It will help them to broaden their perception, take more effective decisions and tackle problem solving in a more structured manner.

Six Thinking Hats

*The Six Thinking Hats* are often used to analyse a topic, to generate a number of perspectives and in conflictual situations. They are a convenient way of putting Parallel Thinking into practice - this is very different from argument. The hats and colours are designed to make Parallel Thinking a practical process that can be remembered and easily put to use. With the Six Hats method it is possible to separate the different aspects of thinking instead of trying to do everything at once. The Six Hats method may therefore be used as a ‘release’ from the argumentative mode as it lays out all views side by side in parallel and provides possibilities for designing a way forward.

Critical Thinking

Participants will be provided with tools to develop their critical thinking skills. Critical thinking involves a process of evaluation, and this can be applied to statements, arguments, experiences and action. Critical thinking is a skilful activity that is contrasted with unreflective thinking. Good critical thinking meets a number of intellectual standards. Some attitudes that are necessary conditions for the development of critical thinking include intellectual curiosity, objectivity, open-mindedness, flexibility, intellectual skepticism, intellectual honesty, being systematic, persistence, decisiveness and respect for other viewpoints. Critical thinking further involves developing skills to identify assumptions, ask pertinent questions and draw out implications.

---

Reading List

de Bono, Edward (1993). Teach Your Child How To Think.
de Bono, Edward. CoRT Programme and Workcards.
de Bono, Edward. DATT Programme.
de Bono, Edward (1993). Serious Creativity.
Code: IOT 5020

Title: Entrepreneurship: Innovation and foresight in practice

Type: Lectures, workshops and distance learning

ECTS credits: 8

Method of Assessment: Presentation: 15%
Assignment: 35%
Examination: 50%

Pre-Requisite Study Units: nil

Result: Percentage Mark and Grade

Lecturers: Mr. Roy Fewster, University of Teesside, UK
and Ms. Leonie Baldacchino, University of Malta

Learning Objectives:

On completion of this study unit students are expected to demonstrate their ability to:

- Demonstrate a comprehensive, detailed and critical understanding of the processes involved in entrepreneurship in multiple contexts and from different perspectives.

- Synthesize disparate concepts and theory introduced in the module into a coherent overview of entrepreneurship in practice.

- Conceptualise, identify, design and integrate a range of processes used in the creation, sustainability, development and growth of an enterprise, e.g.
  - Strategic awareness, sense-making and foresight
  - Networking and relationship building
  - Generating and evaluating opportunities
  - Innovation and experimentation
  - Designing and planning enterprise practice
  - New venture, project and value creation

- Critically examine their own competences, identity and practices with regard to entrepreneurial behaviour and enterprise development.

- Develop a critical understanding of the process of being entrepreneurial in the creation of a plan for a new venture from an innovative idea.

- Evaluate the conditions and activities that influence the degree of entrepreneurial behaviour in an organisational context and critique normative approaches to the creation of corporate and social entrepreneurship.

Description:

In a reflexive risk society, where innovation and creativity produce new knowledge, entrepreneurship turns ideas and innovations into manifest everyday practice. Entrepreneurship can be found in many organizational settings, including SMEs, corporate organizations and the public sector. It can be argued that entrepreneurship is the process by which the future is created from ideas and innovations.

This study-unit will use the creation of a new venture as a model of entrepreneurship. The course will simulate the development of a new venture through the creative practices of the participants. In the process key theories and ideas will be presented and discussed.

The structure is designed to support the kind of learning required (Toohey 1999 p92.); a cognitive structure emphasising key concepts, themes and intellectual abilities.
The module starts with an introduction and explanation to the field of entrepreneurship establishing an understanding of some fundamental concepts and trends in research in the field. Frequently asked questions and common perceptions are posed and challenged. The perspective of the participants, their background, experiences and national culture will be explored in relation to their understanding of entrepreneurship and the notion of entrepreneurial behaviour. Linkages are made with innovation, creativity and foresight.

The module then explores the processes of entrepreneurship in the discovery, evaluation and the exploitation of opportunities. This follows a logical sequence from initial ideas and innovation through the emergence and evaluation of the opportunity into a planned and shaped activity and into the implementation process. The module provides an alternative perspective to traditional theory in business and management in which rationality, analysis and prediction are prominent to one which is predominantly heuristic, iterative, reflexive, reflective and experimental.

The emphasis is upon peer and learner directed activities with a focus upon interactive involvement in which tutors are facilitators in the learning process.

Indicative Content

- The nature of enterprise, entrepreneurs, entrepreneurial behaviour and entrepreneurship. Who and what are entrepreneurs? What do entrepreneurs do (how do they perform)? Why do they become entrepreneurs? Are entrepreneurs born or made? Cognitive and sociological perspectives. Why are there different perspectives?


Suggested Reading:


Code: IOT 5021
Title: Strategic marketing and creative decision making
Type: Lectures and workshops
ECTS credits: 6
Method of Assessment: Class Work: 25%
Assignment: 75%
Pre-Requisite Study Units: nil
Result: Percentage Mark and Grade
Lecturer: Dr. Tanya A. Sammut-Bonnici

Learning Objectives:

On completion of this study-unit students are expected to gain insights on creative thinking and the
decision making models which involve future trends and which includes an understanding of the
following:
1. The role of creativity in business decision making
2. Creativity and naturalistic decision making
3. Intuitive thinking and expert knowledge
4. Divergent marketing orientations
5. Opportunity search in the marketing environment
6. Innovations in segmentation, targeting, and positioning
7. Creative product development and life-cycle strategies
8. Evolution of pricing strategies
9. Development of new distribution channels
10. Creative advertising, sales promotion, and public relations

Description:

Creative thinking techniques are being identified in businesses and industries where predictive decisions
are necessary. Creative decision making in commercial settings are analysed in view of high financial
stakes, social responsibility, and shifting economic conditions.

The study unit builds on case studies on creative strategies that make the description of the methodology
more vivid. In addition to providing information that can be used by professionals in business
management, marketing and other fields, the study unit presents an overview of the research approach of
Naturalistic Decision Making. It expounds on the knowledge of the strengths people bring to the difficult
task of staying ahead of the curve in rapidly evolving economic conditions.

The course content includes emphasis on the importance of anticipating both marketplace and customer
needs. It will provide students with an illustration of the proper design of customer-driven marketing
strategies, and demonstrates the development of marketing programs that deliver value and satisfaction
from a creative stance. The study unit will cover the different approaches to marketing from product
orientation to production, market and societal orientations. It will look into diverse market environments
and explore the roles of the economic environment, political climates, social implication and technology.

Innovation in marketing is viewed through the perspectives of segmenting consumer and industrial
markets. Direct targeting of consumers is covered in respect of recent innovations in internet marketing.
Product positioning is explored from both the traditional and emerging perspectives of the ‘long tail of
demand’ – a new development driven by online purchasing.

Creativity is explored in the field of product development and through the life cycle management of
services and products. Pricing strategies will be described and discussed, with a focus on recent
innovations in variable customer driven pricing in online auctions and peer to peer e-market sites.
**Reading List:** A selection of readings will be distributed to students.

**References**


Learning Objectives:

**Part 1: Planning and Structuring the Dissertation Research**
In the first part of the study unit students will learn how to:
- Write texts of academic quality
- Develop literature reviews
- Formulate a theoretical framework
- Develop research questions, hypothesis and conjectures
- Prepare a research proposal

**Part 2: Qualitative Research Methods**
Participants are expected to be able to identify research questions that require a qualitative approach; the major qualitative strategies and techniques for collecting data and their relation to different research questions; how to establish reliability and validity in qualitative research; how to process qualitative data through various strategies of qualitative analysis including the use of ICT, and how to report findings.

**Part 3: Quantitative Research Methods**
After having followed part three of this study unit, students should be able to:
- identify the basic tenets of quantitative research;
- identify the characteristics of descriptive, correlational and experimental research designs and indicate their advantages and limitations; determine when the use of each of these basic designs is appropriate;
- handle and record responses/data of various types and identify several weaknesses of response styles;
- distinguish between 'statistical significance' and 'practical significance'; explain what various levels of statistical significance (p-values) mean and apply this knowledge to understand research findings;
- compute and explain the meaning and use of basic summary statistics;
- organise data and prepare them for use with the SPSS; list and use several SPSS command lines to run a number of statistical techniques; understand SPSS print-outs of results and interpret findings.

Students will be able to understand: the theoretical underpinnings of quantitative research; the characteristics of descriptive, correlational and experimental research designs; analytical procedures; statistical and practical significance; the application of SPSS features for qualitative research; the development of research findings and conclusions from quantitative analysis.
Description:

Part 1: Planning and Structuring the Dissertation Research
This part of the study unit will introduce the objectives and scope of MA dissertation research. It will provide a benchmark of standards for writing high quality academic texts according to the course requirements. Participants will learn how to assess the best sources for literature review materials in the respective fields. The development of research problems, hypotheses, conjectures and research questions will be addressed. Students will learn to structure the theoretical framework and technical research methodology, and to develop the discussion of the research findings.

Part 2: Qualitative Research Methods
Students will be enabled to recognize and address research questions that require a qualitative approach. It will provide an overview of the variety of qualitative approaches, including action research and protocol and thematic analysis. Participants will develop skills in the design of qualitative inquiry, in qualitative data collection techniques, and in qualitative analysis skills.

Part 3: Quantitative Research Methods
This part of the study unit will aim to equip students with those basic concepts, techniques and skills necessary to plan and conduct rigorous quantitative research.

The emphasis throughout this study unit shall be on active and meaningful student participation. Sessions will involve practical activities and students will learn to integrate both narratives and numbers, that is, both qualitative and quantitative research methodologies.

Reading List:

Main Text

Bibliography:
Code: IOT 5011
Title: Creativity and innovation in the media
Type: Lectures, workshops and distance learning
ECTS credits: 4
Method of Assessment: Assignment: 100%
Pre-Requisite Study Units: nil
Result: Percentage Mark and Grade
Lecturer: Dr. Brenda Murphy

Learning Objectives:
• To understand the significant historical developments, and those impacts on a broader social and cultural context.
• To be familiar with significant media models and understand their application
• To recognise and utilise creative strategies to address some of the core issues that emerge as a result of a highly media dependent society.

Description:

The aim of this study unit is to:
1. Provide a historical and theoretical overview of the various media and their complementary core media elements such as advertising and PR, journalism and film, in contemporary society
2. To introduce core models, which are useful in interrogating the function of these media;
3. Examine some case studies where creative strategies have been used in addressing or resolving an issue in the core media elements
4. Highlight how media industries exist within a market led economy
5. Examine how the media portrays the social and cultural aspects of our world
6. Explore how creativity and innovation could be utilised to address some of the issues and concerns around ‘portrayal’ and ‘representation’

Reading List:
Green, Andy, 2001*Creativity in Public Relations (PR in Practice)*
Learning Objectives:

Students will become familiar with the evolution of the Information Communications and Technology Industry (ICT) and understand the following concepts and issues: Technology Driven Creativity; Convergence and Digitisation; Transformation Through Innovation; Evolution of Creativity and Implications for ICT; Evolutionary processes and ecology; New Product Development; Extending Product Life Cycles through Creativity; and ICT Network Dynamics.

Students will be expected to learn about the relevance of creativity and innovation in connection with digital technologies and to apply idea generation techniques to enhance their approach to both their own learning and to the environments in which they operate.

Description:

This study unit looks at the development of ICT and the process of creativity and innovation. The content is based on cutting-edge research on the network economy and the effects of digitisation and convergence as the broad innovation streams in the industry. The study unit will mainly cover the following topics:

**Topic 1: Technology driven creativity: The case of convergence and digitisation**
1. New technological environments
2. Digitisation and Innovation
3. Convergence and innovation as antecedents of innovation
4. Evolution of ICT products
5. Evolution of ICT networks
6. ICT Challenges

**Topic 2: ICT industry's transformation through innovation**
1. Broadcasting sector
2. Internet search engines
3. Online marketplace sector
4. Providers of IT solutions
5. Publishing sector
6. Telecommunications sector

**Topic 3: ICT product creativity**
1. ICT product levels and creative design
   - Product levels and consumer attributes
   - Following, predicting and creating trends
   - Detecting latent demand
2. New product development
   - Idea generation
- Internal ideas
- External ideas
- Concept and development testing
3. Extending product life cycles through creativity
   - Product life cycles
   - Product extension strategies

**Topic 4: ICT network dynamics**
1. Innovation diffusion
2. Innovation standards and generations
3. Lock-in and innovation
4. 'Versioning' innovations
5. Critical mass
6. Network effects
7. Innovation evolution vs. revolution

**Topic 5: A road map to ICT growth**
The road map synthesizes how ICT companies excel at the process of innovation
1. Identifying prospective opportunities
2. Assessing the potential of selected opportunities
3. Beginning the iterative process of execution

**Topic 6: ICT case study: Google's creativity and innovation centres**
1. Creating a creative environment
2. Incubating innovation
3. Encouraging multiple cultures and diversity
4. Attracting the right personnel
5. Managing the innovation process

**Topic 7: Innovation and new digital technologies**
1. Digital technology and the accelerated rate of change
2. Identifying creativity and innovation in new digital technologies
3. Applying creativity tools to new digital technologies

**Reading List:**
de Bono, Edward (1993) *Serious Creativity: Using the Power of Lateral Thinking to Create New Ideas*.
Managing for Eternity The CEO Refresher, USA, Volume 8, Issue 1.1, 2000.
Learning Objectives:

To provide a theoretical foundation to how the process of innovative design can be exploited to positively contribute in improvements to business performance measures such as cost, time, quality and flexibility.

Description:

Topics to be covered include the following:

- The innovation process, design and business performance;
- Sequential design; concurrent design; integrated product development approach;
- Artefacts viewed as technical systems;
- Design problem solving via the basic design cycle;
- Tools and methods for problem analysis, solution synthesis and solution analysis;
- Tools and methods in practice I
- Tools and methods in practice II
- Managing product variety and commonality to enhance business performance;
- Design in industry – patents, CE marking, financing R&D.

References


**Code:** IOT 5007  
**Title:** Foresight techniques for creativity and innovation  
**Type:** Lectures  
**ECTS credits:** 4  
**Method of Assessment:** Presentation: 30%  
Assignment: 70%  
**Pre-Requisite Study Units:** nil  
**Result:** Percentage Mark and Grade  
**Lecturer:** Dr. Jennifer Harper (coordinator), Ms. Lisa Pace, Dr. Gordon Pace and others

**Learning Objectives:**
The course is aimed at instilling an improved understanding of:
- the distinction between futures, forecasting and foresight approaches;
- the importance of long-term, open participatory approaches in overcoming context and path-dependency in policy-making (particularly research and innovation)
- the growing convergence of public and private rationales in the use of foresight
- the growing importance of foresight at regional and local levels

**Description:**
This study unit will provide an introduction to the use of foresight methodologies as alternative approaches to encouraging creativity and innovation. The introductory sessions will focus on the rationale for the use of foresight as an innovative policy-making tool and for developing strategic intelligence. A historical overview of the use of foresight in advanced economies worldwide will be provided complemented by the more recent use of foresight in economies in transition and small countries. The study unit will analyse a number of international and local case studies on the use of foresight for creativity and innovation. The following aspects will be covered:
- Introduction to foresight rationale and methodologies: A historical overview of the use of foresight worldwide
- The role of context and creativity in foresight
- Foresight as a strategic tool for policy-making and as an educational tool for creativity and innovation
- Managing a foresight exercise
- The role of communications in foresight
- Case study in information and communications technologies
- Case study in marine science sector
- Case study in biotechnology
- Foresight in SMEs
- Case study in careers

**Background**
Foresight is a systematic, participatory, future-intelligence-gathering and medium- to long-term vision-building process aimed at present-day decisions and mobilising joint actions. Foresight arises from a convergence of trends underlying recent developments in the fields of 'policy analysis', 'strategic planning' and 'future studies'. It brings together key agents of change and various sources of knowledge.
in order to develop strategic visions and anticipatory intelligence.

Regional foresight is the implementation of the five essential elements of foresight:

- anticipation,
- participation
- networking
- vision
- action

Foresight can be applied to a huge range of topics (scientific, industrial, demographic, social, political and cultural). While it can be used to inform policymaking, build networks, and enhance local capabilities for tackling long-term issues, it is not a magic solution that can solve all social, economic or political problems of regions.

Foresight is a very evocative label for the rise to prominence of participative methods and long-term strategic futures techniques, in the wake of more traditional ways of informing policy planning. It is currently highly-topical, but whether or not the label persists is irrelevant to the real trends which are radically changing delivery-timescale and format requirements for information on future threats and opportunities which decision-makers require. Foresight, as a means to an end, is well adapted to these changing requirements. It has proven itself at national level, and has begun to do so too at regional and other territorial levels.

Common features of Foresight include:

- a long-term orientation, the examination of a wide range of factors,
- the drawing on widely-distributed knowledge,
- the institutionalisation and creation of networks and the use of formal techniques/methods.

Bibliography:


Local Government Association Futures Toolkit, The future: why consider it?


RELEVANT WEB SITES

- http://www.foresight.gov.uk
- http://www.eforesee.info
- http://www.unido.org/doc/45321
- http://www.efmn..info
- http://www.futur.de
- http://millenium-project.org
- http://www.forlearn.jrc.es
- http://www.gbn.org/
- http://gwforecast.gwu.edu/index.asp
Code: IOT 5024
Title: Creativity: Psychological perspectives
Type: Lectures, workshops and distance learning
ECTS credits: 4
Method of Assessment: Reflective Diary: 30%
Examination: 70%
Pre-Requisite Study Units: nil
Result: Percentage Mark and Grade
Lecturer: Ms. Leonie Baldacchino and Ms. Adriana Tedesco

Learning Objectives:

Students who complete this study unit are expected to demonstrate an understanding of the various psychological processes that underlie creativity, as well as of how creativity results from interplay between these psychological processes, personal characteristics and contextual factors.

Description:

This study unit is designed to provide students with in-depth knowledge of the various psychological processes that mediate the relationship between the individual and contextual factors involved in creativity. Students will learn about the typical characteristics of creative people and about how creativity is influenced by environmental factors. They will explore the relationship between creativity and various psychological components including motivation, perception, intelligence, and memory.

Topics to be covered include the following:

Introduction: Historical Overview and Definitions
A brief historical overview of creativity will lay the foundation to introduce the central concepts which students are to explore in further detail throughout this study unit.

The Creative Process, the Creative Product, the Creative Person and the Creative Environment
A discussion of the creative process will focus on the stages involved in creativity and will lead to a definition of what constitutes a creative product. The characteristics of creative people will be described together with the environmental influences on creativity to help students understand that creativity results from interplay between personal traits and external factors. This will shed light onto the issue of nature and nurture as applied to creativity.

The Psychological Components of Creativity
Students will develop in-depth knowledge of the various psychological processes that mediate the relationship between the individual and contextual factors involved in creativity. They will explore the relationship between creativity and various psychological components including intelligence, sensation, perception and attention, memory and learning, cognitive processes and problem solving, motivation and emotions, personality and the self.

Creativity and Mental Health
This will shed light onto the relationship between mental illness and creative response. Psychological conditions, brain damage, self-destructive behaviour and psychiatric disturbances will be analysed, in view of their connection to creativity. Furthermore, students will be provided with an understanding of the link between well-being and creativity, with particular emphasis on self-disclosure, self-regulation, depression, stress and adaptation.
Creativity Testing and Creativity Research
The various ways of conceptualizing creativity for measurement purposes will be outlined and the salient issues pertaining to the measurement of creativity (creativity tests), including problems of reliability and validity, will be discussed. An overview of the areas of research in the creativity domain, including cognitive research, clinical research, developmental research and psychometric research, will also be investigated.

Reading list:
Learning Objectives:

Students who complete this study unit are expected to demonstrate an understanding of how creative output survives competing ideas and how it is selected in a population of adopters. Students will learn how innovations diffuse amongst a population and how they evolve within groups, organizations, societies, and nations.

Description:

What happens to a creative idea once it is generated? How is it selected amongst competing ideas? How does it diffuse into a population to become accepted? How do creative ideas and practices evolve and develop? This study unit is a comprehensive introduction to the key language and concepts of complexity and how they relate to the new world of creativity and innovation. It explores the profound yet practical implications of these concepts, and demonstrates how they are complex adaptive systems to which a whole new set of management ideas now apply.

Students are encouraged to make their own path through the maze of concepts of creative idea selection, retention and proliferation. The practicality of the study unit is enhanced by extensive case studies, audio visual material and interactive learning.

Survival of the Fittest Creative Idea
Creativity and Genetic Analogies (Gradual Innovation, Punctuated Innovation)
Survival of Innovative Ideas and ICT Products (Variation, Retention, Selection)
Exploration of the Theories of Selection:
• Natural selection
• Probability
• Complexity

How Innovations Survive
Systems
Complexity
Complex adaptive systems
Networks and hierarchy

Ideas as Genes and Viruses
Dialogue memes
Metaphor
Receiver-based communication
Perspectives
Possibility space
Evolution and Co-Evolution of Creative Ideas

Co-evolution
Evolution of co-operation
Fitness landscape
Autopoiesis

Reading list:
Code: IOT 5026
Title: Innovation in organisations
Type: Lectures, workshops and distance learning
ECTS credits: 4
Method of Assessment: Presentation: 20%
Assignment: 30%
Examination: 50%
Pre-Requisite Study Units: nil
Result: Percentage Mark and Grade
Lecturer: Dr. Tanya A. Sammut-Bonnici and Dr. Sandra M. Dingli

Learning Objectives:

- To understand the development of innovation principles stemming from Nietzschean concept for disruption and creativity to Schumpeter’s notions influenced by the Austrian School of Economics.
- To provide students with skills to conduct strategic assessments and to develop innovation strategies in organisations.
- To apply creativity and innovation processes in product development.
- To analyse the complexity of alliance formation necessary for multi-partner product and process development.

Students will be expected to recognise the conditions that facilitate organisational creativity and innovation and to understand how they can be fostered and implemented and, vice-versa, to identify obstacles to creativity and innovation which may exist at various levels within an organisation.

Description:

The course addresses the issue of how to apply creative thinking to foster innovation in business organisations in times of discontinuous change. The possibility of conducting innovation audits in organisations to assess factors that enable and factors that inhibit innovation will be discussed. Bridging the gap that many perceive between the classroom and the world of business is a key concern of many organisations and firms. The study unit will include a blend of theoretical material (to establish an academic underpinning) and practical exercises to encourage experiential learning.

The program will cover the following areas.

1. **Principles of Innovation Management**: Schumpeterian innovation principles, Christensen’s Disruptive innovation theory, sources of discontinuity.

2. **Strategic Approaches**: Rationalist and incrementalist strategies, Dynamic Capabilities of Firms, Porter’s framework.

3. **Market Innovations**: Product differentiation, Architectural Products, Technological Products, Commercialization, Forecasting Diffusion of Innovation

4. **Collaboration and Alliances**: Forms of collaboration, Effect of technology and organization, Managing alliances
5. **Assessing the level of Innovation in Organisations**: barriers that inhibit creativity, how these can be overcome and factors that facilitate innovation in organisations.

6. **Case Studies**: will be applied for the above topics.

**Reading List**


Code: IOT 5027
Title: Creativity and innovation in education, science and technology
Type: Lectures
ECTS credits: 4
Method of Assessment: Presentation: 20%
Assignment: 80%
Result: Percentage Mark and Grade
Lecturers: Dr. Suzanne Gatt and Ms. Shirley Pulis Xerxen

Learning Objectives:

Students will be expected to:
- explore different theories about creativity in education
- learn about the characteristics of creative learners/individuals
- explore barriers to creativity in education
- discover the evolution of theories about the creative process and their relevance to the development of creativity in education
- appreciate that science and technology advancement is the outcome of creativity and innovation
- understand that science and technology is a human enterprise and consequently can be fallible
- realise that the uncertainties within science and technology allow for advancement through creativity
- appreciate that scientists are humans with their personal interests as well as their different creative input to their work
- be aware of the major role that creativity plays in innovative solutions to scientific and technological problems.

On completion of this study unit students will have learnt about the role of creativity in education, science and technology and about different strategies for implementing creativity within a curriculum, in particular one that helps to instil creativity and innovation in future scientists. Students will, moreover, be in a better position to appreciate the creativity and innovation provided by scientists involved in research and development.

Description:

Creativity within education is a complex concept with multiple meanings. Albeit being considered a desirable outcome, often regarded as potentially the most powerful means through which learners have the opportunity to open the gate of a better world, it is important to acknowledge that an established, universally accepted definition of creativity in an educational setting does not exist.

In practice, scientists need to be creative and innovative in coming up with solutions and mental models to explain phenomena and to develop more advanced technological machines to suit our needs. Science and technology form part of scientists’ activities and work. They are the vehicles that push industry forwards. Companies are continually under pressure to be on the forefront, to come up with new ideas and new technologies. This can only be achieved through the creativity and innovation provided by the scientists involved in research and development.

Being creative and innovative is not easy. It is thus important to promote these skills in education in order to help future scientists (and everyone else) to fulfil their creative potential. Traditional training of scientists, as too often occurs in education, usually instils convergent thinking, leaving little space for alternative solutions. This is an aspect of science education that urgently needs to be addressed.
This study unit will focus on the issues highlighted above. The traditional view of science and technology education, and particularly that of scientists, will be challenged. The stereotypic image will be rebutted through a number of practical examples of great innovations and advancements in science both historically and current issues.

**Reading list:**
Learning Objectives:

Students completing the dissertation will be able to:

- Communicate complex professional and academic issues to both specialists and layperson.
- Formulate and analyse complex scholarly issues independently, systematically and critically.
- Critically appraise various methods of analysis.
- Work as a member of a community of learners and independently.
- Continue own competence development and specialisation

Description:

The overall aim of the dissertation is to allow students to unify and extend their understanding of the subject as developed in the taught part of the programme by pursuing an independent research project on a chosen topic. Students completing the dissertation will have demonstrated:

- Detailed understanding of a particular idea of relevance to their degree.
- In-depth knowledge of the relevant literature on the subject matter of the dissertation.
- An ability to undertake sustained critical analysis.
- An ability to conduct research.
- An understanding of research work, including research ethics.

The workload is approx. (600 – 800) hours.