Subject Description Form

Subject Code	ISE2129/IC2129
Subject Title	Computing Tools in Resources Planning & Analysis
Credit Value	2 Training Credits
Level	2
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	This subject offers wide coverage on the application of software in areas encompass computer-aided statistical analysis, enterprise resource planning and industrial safety that aims at providing the necessary fundamental knowledge and computer skills to students.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a) Acquire a certain level of understanding and practical skill in using specific software in assisting their future study and professional *(Objective 1 and Syllabus Item 1-2). Category A.* b) Interpret basic occupational health and industrial safety requirements for engineering practice *(Objective 1 and syllabus Item 3). Category A.*
Subject Synopsis/ Indicative Syllabus	Students are required to take 3 modules: - 1) Basic Computer-aided Statistical Analysis Introduction to SPSS, data collection, questionnaire design, variables and reverse coding, descriptive statistics; non-normality handling, grouping, randomisation and transformation; bivariate statistics, confidence intervals and effect size; factor analysis, reliability analysis with measured and latent variables; simple and multiple linear regression, goodness-of-fit and multicollinearity; One-way and two-way ANOVA, F-ratio and planned comparison; visualising and reporting statistics with histograms, box-plots, line charts, scatter-plots. 2) Fundamentals of Enterprise Resource Planning Overview of ERP system, major components and its functions; operation principle of manufacturing resources planning, BOM, master production schedule, work orders. 3) Industrial Safety Safety Management: Overview, essential elements of safety management, safety training, accident management, and emergency procedures. Safety Law: F&IU Ordinance and principal regulations, OSH Ordinance and principal regulations. Occupational Hygiene and Environmental Safety: Noise hazard and

	control; dust hazard and control; ergonomics of manual handling. Safety Technology: Mechanical lifting, fire prevention, dangerous substances and chemical safety, machinery hazards and guarding, electrical safety, first aid, job safety analysis, fault tree analysis, personal protective equipment.
Learning Methodology	For Industrial Safety, lecture will be used to help students on learning local legal requirement, safety concepts, accident phenomena, hazard identification and control measures. Video illustrations, case studies, group discussion and hands-on practices will be used to support the learning. For Basic Computer-aid Statistical Analysis, lecture, demonstration and real-life case study will be used to showcase the features and functions of the software. Problem based learning with hand-on exercises will be used throughout the course to help students solve common statistical problems and discover common application mistakes. Group discussions and Q&A section after each problem will be used for reflection, checking misunderstandings and prompt feedback. For Fundamentals of Enterprise Resource Planning, both tutorial and hands-on exercises will be used to deliver various topics. Some of them covered in a problem-based learning approach where enhances intended learning outcomes, and the remaining hands-on practice for real-life applications.
Assessment Methods in Alignment with Intended Learning Outcomes	

Assessment Methods	Weighting (%)	Intended Learning Outcomes Assessed	
		a	b
1. Assignments	65	✓	✓
2. Test	35	✓	✓
Total	100		

Assignments:
The assignment is designed to facilitate students to reflect and apply the knowledge periodically throughout the training.

Test:
Test is designed to assess students' declarative knowledge on the topics.

Student Study Effort Required	**Class Contact**	
	▪ Mini-lectures	32 Hrs.
	▪ In-class assignments / hands-on practice and test	28 Hrs.
	Total Study Effort	**60 Hrs.**

Reading List and References	1) PASW Statistics 19 Made Simple, Hove, East Sussex: Psychology Press, 2012
	2) Discovering statistics using SPSS 5th edition, London: SAGE Publications, 2018.
	3) Applied statistics using SPSS, STATISTICA and MATLAB, Berlin; Hong Kong: Springer, 2007.
	4) Shtub, A., Enterprise Resource Planning (ERP): The Dynamics of Operations Management, Boston, Mass: Kluwer Academic Publishers, 1999.
	5) Joseph A Brady, Ellen F Monk, Bret Wagner, "Concepts in Enterprise Resource Planning", Thompson Course Technology, USA, 2001.
	6) Labour Department publications on occupational safety, available at: http://www.labour.gov.hk/eng/public/content2_8.htm
	7) Labour Department publications on occupational health, available at: http://www.labour.gov.hk/eng/public/content2_9.htm
	8) Hong Kong Laws: Cap. 59 and Cap. 509, available at: https://www.elegislation.gov.hk