
Bachelor of Engineering (Rubber Industry Engineering and Management)
International College, Prince of Songkla University

Course description

001-102 The King's Philosophy and Sustainable Development (2 credits)

Prerequisite: -

Meaning, principles, concept, importance and goal of the philosophy of sufficiency; work principles, understanding and development of the King's philosophy and sustainable development; an analysis of application of the King's philosophy in the area of interest including individual, business or community sectors in local and national level

001-103 Idea to Entrepreneurship (1 credits)

Prerequisite: -

Introduction to new entrepreneur creation; business environment analysis; survey for business opportunity analysis; using business models with modern business tools

142-118 Academic English: Listening and Speaking (2 credits)

Prerequisite: -

A course focusing on communication skills; listening and speaking through daily life conversation, news, tv programs, movies; listening in academic contexts; announcements in formal settings or in workplace; speaking skills practice: speaking techniques for giving opinions, answering questions, making conversation; skills building for English proficiency test preparation

142-119 Academic English: Reading and Writing (2 credits)

Prerequisite: -

Fundamental English reading and writing for academic purpose; reading comprehension; reading for vocabulary building; identifying main ideas and specific information; reading between the lines; reading for writing; writing skills building: sentence structure, writing mechanics, writing with coherence, summarizing and paraphrasing; English proficiency test preparation

142-121 The Future Earth (2 credits)

Prerequisite: -

Advancement in science; fast-growing technologies and their impacts on human life and modern society in 21st century; new energy, green energy, alternative energy; ecosystem and environment; global and social problems; drawbacks of the advancement

142-124 Creative Problem Solving (2 credits)

Prerequisite: -

Information; information management; data analysis; information literacy; new economy; industrial internet of things; industry 4.0; disruptive technology; experimental design; program for data analysis; artificial intelligence; modern industries

168-112 Module : Fundamental Science for Engineering I (7 credits)

Prerequisite: -

Fundamental mathematics and physics in engineering works; mathematical induction; functions and graphs; limit and continuity; derivatives of functions; integration of functions; units, physical quantities, and vectors; force system and motions; work and moment; particles and rigid bodies; energy and momentum; applications of mathematics and physics in engineering

168-113 Module : Fundamental Science for Engineering II (7 credits)

Prerequisite: -

Fundamental electrical engineering; DC circuit analysis; AC circuit analysis; three-phase systems; Introduction to electric machinery; electric generators and motors; introduction to electrical instruments; program design and development with applications to engineering problems using a high level programming language; programming practices

168-114 Module : Introduction to Rubber Industries (7 credits)

Prerequisite: -

Upstream rubber industries involving growing and harvesting of rubber on plantations, preservation of rubber latex and cup lumps, midstream rubber industries, or natural rubber processors such as production of concentrated latex, sheet rubbers, specified rubbers (TSR), crepe rubbers and skim rubber etc., downstream rubber producers or producers of rubber products such as products manufactured from latex and dried rubbers, principles of forest certification system for rubber plantation, demand-supply for rubber industries, rubber economics, industrial and environmental safety, international standards, production management, Rubber Control Act, Rubber Authority of Thailand Act

168-121 Module : Fundamental Science for Engineering III (10 credits)

Prerequisite: -

Fundamental mechanical engineering; Engineering drawing; work and heat; thermodynamic properties of substances; energy analysis; fluid statics; pressure and measurements; flow inside pipe; frictions and pressure losses along pipe; basic piping network calculation; forces and stresses; experiments in the fields of strength of materials, fluid mechanics, mechanics of machines and thermodynamics

168-122 Module : Basic Fundamental of Rubber Technology (9 credits)

Prerequisite: -

Hydrocarbon compounds, bonding and orientation, functional groups, chemical reactions, activation energy for reaction, rubber materials, types of rubber, additives for rubbers and formulations, vulcanizing agents, accelerators, activators, fillers, anti-degradants, pigments and

processing aids, rubber formulation, mixing and processing, vulcanization process, testing of raw rubber, compounds and vulcanizates, types of rubber product, properties of rubber product

168-123 Module : Rubber Processing and Testing (9 credits)

Prerequisite:-

Overview and importance of rubber processing and testing, additives for rubber and rubber formulation, mixing machines, rubber and additives mixing, mixing factors and mixing control, rheological and visco-elastic properties of rubber compounds, rheological properties of rubber compounds testing, rubber vulcanization characteristics testing, rubber processing via compression molding, injection molding, extrusion, calendering, vulcanizates testing such as hardness, tensile strength, tear strength, compression set and tension set, creep, strain relaxation, resilience, abrasion resistance, fatigue, heat build-up, dynamic mechanical properties, thermal and aging properties, rubber and additives mixing laboratory, rubber processing laboratory, and rubber testing laboratory

168-141 Practical Training (1 credits)

Prerequisite conditions: Junior students

Training in company or institute related to rubber engineering and management field for at least 320 hours or 8 weeks under consent of the college; assessment by company or institute and college

168-142 Project in Rubber Industry Engineering and Management I (3 credits)

Prerequisite condition: Rubber Engineering and Management program senior students or Consent of the program

Rubber Engineering and Management program senior students or Consent of the program

Research studies of rubber engineering and technology under supervision of academic advisor

168-143 Project in Rubber Industry Engineering and Management II (3 credits)

Prerequisite condition: Rubber Engineering and Management program senior students or Consent of the program

Rubber Engineering and Management program senior students or Consent of the program

Research studies of rubber engineering and technology under supervision of academic advisor

168-144 Pre-cooperative Education (1 credits)

Prerequisite conditions: Junior and senior students

Preparation for pre-cooperative education; studying and searching the documents relative to pre-cooperative education; developing the research studies for pre-cooperative education; research planning; data gathering; data analysis; result discussion and conclusion; techniques of

Basic of rubber products and its properties; concepts of product design and development process; planning; brainstorming; idea screening; proof of concept; concepts and criteria of innovation; processes of development and disseminating innovation; innovation management and commercialization; intellectual property management; concept of entrepreneurship; traditional marketing and digital marketing; consumer behavior; computer drawing and design; prototyping; practice for design and development of rubber product

388-100 Health for All (1 credits)

Prerequisite: -

Principle and steps of basic life support, practice of basic life support in simulated situation; common mental health problems, warning signs, initial assessment and care; concepts of health and health promotion; first aid

472-117 Keep Fit: Enjoy Healthy and Happy (1 credit)

Prerequisite: -

Living healthy and happy life; applying basic techniques regarding fitness and keeping healthy; the importance of physical, mental and emotional wellbeing; sports and fitness improve relationships among individuals; a necessity to overall happiness and healthy eating habits

891-020 Basic Chinese (2 credits)

Prerequisite: -

Chinese phonetic alphabets, characters, sentence structures and basic grammatical structures; listening, speaking, reading, and writing Chinese for daily communication; Chinese cultures in daily life

891-021 Chinese Conversation in Daily Life (2 credits)

Prerequisite: -

Communication skills; basic conversation and exchanging information or opinions in provided situations; Chinese cultures for proper and appropriate communication in provided situations

891-022 Chinese Conversation in the Workplace (2 credits)

Prerequisite: -

Conversation; sentence structures used for work; listening, speaking, reading, and writing in provided situations; Chinese cultures in various situations

893-303 Chinese Conversation (3 credits)

Pre-requisite: 891-021 Chinese Conversation in Daily Life

Vocabulary, phrases, sentences, and everyday conversations with emphasis on interaction in the situations given

895-001 Good Citizens

(2 credits)

Prerequisite: -

Role; duty and social responsibility as a citizen; social organization; law; right; liberty; equality; living together in a multicultural society