

Environmental Science

ICBI 101 Biology

4

Prerequisites: -

Properties of life, classification, and scientific process; chemistry of life; cells and metabolism; genetics; mechanisms of evolution

ICBI 102 Integrated laboratory in Biological Sciences I

2

Prerequisites: -

Cell structure and function; tissue; cell division; ecology; movement of molecules; respiration and photosynthesis

ICBI 103 Biology II

4

Prerequisite: -

Diversity of life; plant forms and functions; animal forms and functions; ecology and behavior

ICBI 215 General Biochemistry

4

Prerequisites: ICBI 101, ICCH 210, ICCH 211, ICCH 221

Co-requisite: ICBI 272

Structure and function of biomolecules, controls and processes of metabolism at the cellular and molecular levels

ICBI 216 Cell Biology

4

Prerequisites: ICBI 215

Analysis of the structures and functions of cellular organelles; cellular activities; cell-to-cell interaction and communication with environment

ICBI 221 Animal Biology

4

Prerequisites: ICBI 103

A survey of the animal kingdom; diversity and ecology of animal; animal structure, function and behavior; demonstration and practical exercises included

ICBI 231 Plant Biology

4

Prerequisites: ICBI 103

A survey of plant kingdom; diversity and ecology of plants; plant structure, function and behavior; demonstration and practical exercises included

ICBI 262 Practical Field Ecology and Conservation

4

Prerequisite: ICBI 103

Reviewing ecological literature; formulating research questions; preparing for ecological investigations; characterizing sites; sampling strategies in different habitats; statistical techniques; objective interpretation of data; unambiguous communication of results; field work included

ICBI 311 Human Physiology

4

Prerequisites: ICBI 215, ICBI 216

Function and control mechanisms of nervous, muscular, circulatory, respiratory, excretory, digestive, endocrine and reproductive systems; their interrelationships in homeostasis; demonstration and practical exercise included

ICBI 440 Marine Ecology and Conservation

4

Prerequisites: ICBI 262 OR At the discretion of the instructor

Co-requisites: ICBI 442

Adaptations; behaviour; diversity; physiology; ecological roles; marine ecosystems; marine resources; trophic interactions; human activities; sustainable management; significance of global climate change; coral reef bleaching; reef rehabilitation & restoration; mangrove deforestation & reforestation; conservation measures

ICBI 442 Practical Marine Ecology and Conservation

2

Prerequisites: ICBI 262 OR At the discretion of the instructor

Laboratory and field procedures; analyzing abiotic conditions; surveying biotic communities; assessing productivity; evaluating anthropogenic threats

ICCH 210 General Chemistry I

4

Prerequisites: -

Concepts of general chemistry; matters, atoms, compounds, reactions, gases, thermodynamics, electrons in atoms, periodic table, chemical bonding; intermolecular forces, and spontaneous changes

ICCH 211 General Chemistry II

4

Prerequisites: ICCH 210

Comprehensive general concepts and principles of chemistry; solutions, equilibria, acids and bases, solubility, electrochemistry, chemical kinetics, chemistry of main-group and transition elements, coordination compound, nuclear chemistry and selected topics in chemistry

ICCH 221 Organic Chemistry I

4

Prerequisites: ICCH 211

Concepts and mechanistic considerations of organic chemistry; molecular structures and properties; methane and alkane chemistries; stereochemistry; acyclic compounds; alkyl halides; alkenes; conjugation and resonance; alcohols; ethers and epoxides; alkynes

ICCH 224 Integrated Laboratory Techniques in Chemistry

2

Prerequisites: ICCH 210

or

Corequisites: ICCH 210

Laboratory practicals for general chemistry: measurements; stoichiometry; solids, liquids and solutions; gases; thermochemistry; equilibrium; acids and bases; electrochemistry; kinetics

ICCH 311 Analytical Chemistry

4

Prerequisites: ICCH 211

Separation techniques and concepts of modern analytical methods essential for quantitative and qualitative characterization; treatment of the analytical data; principles and applications of chemical equilibria; electrochemical methods; separation methods; practical exercises involving the use of spectroscopic analytical equipment

ICEN 211 Fundamentals and Applications of Environmental Microbiology

4

Prerequisites: -

Principles, concepts and techniques of environmental microbiology including; morphology, physiology, metabolism and growth of organisms in Kingdoms of Monera, Protista and Fungi; methods and factors influencing in microbial control in the environment; types, isolation and determination of microorganisms in the environment including water, air and soil; the roles and relation of microorganisms with the environment; the roles of microorganisms related to biodegradation of environmental contaminated substances

ICEN 212 Ecological Systems Analysis**4****Prerequisites:** -

Mechanisms and interactions in ecosystems; some important ecosystem theories such as control theory, information theory, thermodynamics, and hierarchy theory, the overview of different scientific philosophies for the better understanding of ecosystem theory

ICEN 241 Environmental Pollution I**4****Prerequisites: ICCH 210**

Problems concerning environmental pollution, especially physical, chemical, and biological properties of water and soil; sources and effects of pollutants; technological alternatives for the control, prevention, reduction, and treatment of water and soil pollutions; methods for monitoring and management of environmental pollution

ICEN 301 Basic Environmental Statistics**4****Prerequisites: ICMA 151**

Basic probability and statistics, elementary sampling and monitoring, statistical inferences for means and proportions, detecting and estimating trends, regression and non-parametric statistics, related to the environmental application

ICEN 312 Environmental Toxicology**4****Prerequisites: ICEN 241**

Principles of environmental toxicology; concepts underlying absorption, distribution, metabolism and excretion of toxic agents in living organisms; nature, sources and fate of contaminants in the environment; potential for harmful exposure, especially to the environment; and applied aspects, including ecological test methods, regulation and similar consideration

ICEN 313 Waste Minimization and Clean Technology**4****Prerequisites: ICEN 241**

A reduction or elimination of waste production; a reduction in pollution at source, the changes in procedure, technology and material input; the economic production process; significance and application of waste minimization or clean technology; practical exercises

ICEN 314 Tropical Ecology**4****Prerequisites:** -

The tropical environment; tropical rainforests and biodiversity; tropical streams, rivers, floodplains and estuaries; tropical lakes; wetlands; mangroves; sea grasses; coral reefs; biogeography; practical exercises and field trips

ICEN 317 Aquatic Ecology**4****Prerequisites:** -

Hydrological cycle; physico-chemical properties of water; light in the aquatic environment; physical limnology; biological activity in lakes; nutrient limitation; trophic interaction in lakes; characteristics of and material flow in streams and rivers; tides and estuaries; practical exercises

ICEN 318 Aquatic Ecology Field Course**4****Prerequisites: ICEN 317**

A field course providing experience in ecological assessments and surveys of aquatic habitats; parameters measured/ascertained include water quality, riparian land use, in-stream and in-take habitat types, algal communities, benthic invertebrates, fish communities; student presentations of their results

ICEN 319 Conservation Biology**4****Prerequisites:** -

The aims and origins of conservation biology, conservation problems and issues, causes of habitat degradation and extinction, conservation genetics, small population biology, the values of communities and ecosystems, the reduction and management of endangered species, social and ethical issues in conservation

ICEN 320 Population and Community Ecology

4

Prerequisites: ICEN 351

Introduction to population growth and dynamics of age-structured populations, population control, theory of competition, herbivory, predations, community, trophic structure and control, community diversity, theories of evolution and maintenance of diversity; field trips, sampling and modeling exercises and experiments

ICEN 331 Soil, Land Use and Degradation

4

Prerequisites: -

A basic introduction to soil science; its relationship with land resource management and the environment; soil problems and their solutions

ICEN 332 Introduction to Oceanography

4

Prerequisites: -

History of oceanography; an introduction to the earth and geomorphology; an evolution of the ocean; plate tectonics; the sea floor; nature of seawater; atmosphere-ocean interactions; circulation patterns and ocean currents; waves and tides; coasts and estuaries; human impact on oceanic system; field trips with practical exercises

ICEN 341 Environmental Quality Analysis I

4

Prerequisites: ICEN 241

Basic knowledge; the importance and the analysis of representative samples; an analysis of environmental quality monitoring using physical, chemical and biological parameters etc.; handling and storage of sample from water, soil, plant and animal; analytical methods and data interpretation

ICEN 342 Environmental Pollution II

4

Prerequisites: ICEN 241

Air, noise, solid waste, hazardous waste, and also radioactive pollution; types, sources, and effects of air and noise pollution; methods for prevention, control and measures of air and noise pollution; source, type, effect, and management of solid waste and hazardous waste; utilization and management of radioactive waste

ICEN 343 Environmental Quality Analysis II

4

Prerequisites: ICEN 241 and ICEN 341

Practices on environmental quality monitoring concerning soil, solid waste, air and noise analysis, as well as toxicity testing; data sampling; sample preservation and sampling analysis; a data evaluation

ICEN 351 Population and the Environment

4

Prerequisites: -

An introduction to demography; population growth; fertility, mortality and migration; social and economic factors; population and its impact on the environmental system

ICEN 352 Environmental and Resource Economics

4

Prerequisites: -

Basic economic theories including market failure, externality and common right problems before taking on economic theories and analyses of environment and natural resources; market instruments and their applications; environment and resource valuation techniques, cost-benefit analysis, problem on National Income Account concerning environment and natural resources and any contemporary related issues

ICEN 361 Principles of Environmental Impact Assessment

4

Prerequisites: ICEN 241 and ICEN 342

Environmental changes and its impact on communities; an environmental impact analysis, statement techniques, assessment methodology, tools such as EIA (Environmental Impact Assessment) for environmental planning and decision making

ICEN 362 Natural Resource Conservation and Management

4

Prerequisites: -

The principles of environmentalism and the history of the conservation movement; natural resource and environment, intra-and inter-relationship of ecosystem, causes of natural resource and environment destruction, management direction of natural resource and environment

ICEN 391 Sustainable Development**4****Prerequisites:** -

What is sustainable development: guiding principles and approaches; 1972 Stockholm Earth Summit; 1992 Rio Earth Summit; Agenda 21; 2002 Johannesburg World Summit; outcomes of the summits; the role of UN agencies, NGOs, governments, businesses and individuals; industry and farming and the environment; population; poverty and inequality; food and agriculture

ICEN 392 Environmental Issues: Past, Present and Future**4****Prerequisites:** -

An in-depth study of environmental issues e.g. Exxon Valdez and other oil spills; Bhopal and other chemical leaks; Chernobyl and other radiation leaks; ozone depletion; global warming; loss of biodiversity; deforestation; genetic engineering and GMOs; water issues; urban issues; contemporary and likely future environmental issues

ICEN 393 Practical Training in Environment**2****Prerequisites:** -

Practical training in the real situations related to environmental science and technology in the projects and/or activities of either public or private organization; industries, environmental policy organizations and environmental laboratory units

ICEN 401 Applied Mathematics for Environment Studies**4****Prerequisites:** -

The use of quantitative methods for decision in environmental problems; mathematical reasoning and analytical tools in resource management and environmental planning; operation research, simulation and environmental monitoring techniques

ICEN 402 Geoinformatics**4****Prerequisites:** -

The figure and rotation of the earth, great circles, latitude-longitude and time; an introduction to marginal information, map symbol, scale ratio, direction, elevation and relief, position, measurement, and map projection; an interpretation of the serial photograph with the naked eye, pocket and mirror stereoscope; related technology: Imagery, Geographic Information System (GIS) and Global Positioning System (GPS); practical exercises included

ICEN 403 Principle of Environmental Informatics**4****Prerequisites:** -

An introduction to principles of information technology implementation in environmental study and management; the information technology applications for environmental data manipulation and management; the basic principles of the integrated information technology for sustainable environmental management

ICEN 411 Climate Change and Its Impact**4****Prerequisites:** -

Climate and weather pattern, greenhouse gases, causes and effect of greenhouse gases on climate, natural catastrophe, which are related to human behavior and vice versa; human activity and changes in natural ecosystems

ICEN 413 Environmental Remediation Technology**4****Prerequisites: ICEN 241**

Basic environmental remediation technology; types of contaminants; transport of contaminants; transformation of contaminants; characterization of contaminated sites; methods for remediation: physical, chemical, and

biological methods; factors effected on remediation technologies; criteria to select appropriate environmental remediation technology; sites selection; basic experimental design

ICEN 414 Waste Utilization

4

Prerequisites: ICEN 241

Features, compositions and sources of agricultural; technologies for agricultural waste management; separation and product recovery technology; enzyme technology; pulp production; bioplastic and valuable compounds production; renewable energy; biogas, biodiesel, compost production; effective microorganism (EM) utilization

ICEN 415 Biodiversity

4

Prerequisites: -

Biological resources; genetic and species including ecological diversities; the importance of biodiversity; measurements of biodiversity; factors affecting biodiversity and its impacts: production and consumption patterns, commercial agriculture, population growth, destruction of natural habitat, pollution, global environmental changes impacts from GMOs; sustainable use of biodiversity; biodiversity conservation; relating international convention and law; policy and plans including security issues concerning biodiversity in Thailand

ICEN 416 Ecotoxicology

4

Prerequisites: ICEN 312 Environmental Pollution I

Toxicants mediate interactions between organisms and their biotic and abiotic environments; biochemical and physiological mechanisms of toxicity; defenses against toxicants; population, community, ecosystems and evolutionary ecotoxicology; quantifying and measuring ecotoxicological effects; case studies

ICEN 421 Water and Wastewater Treatment

4

Prerequisites: ICEN 241

Principle of water treatment technology; aeration process, pH adjustment, coagulation and flocculation, sedimentation and filtration, ion exchange and adsorption, membrane process and disinfection; the basic of water supply; raw water source, characteristics, water quality inspection and water supply technology; source of supply, distribution system, quantity of water supply and design of water supply capacity; wastewater characteristics, wastewater forecasting, wastewater collecting system, wastewater treatment system, basic design of wastewater treatment plant, wastewater reuse

ICEN 422 Solid and Hazardous Wastes Management

4

Prerequisites: ICEN 241

Principles of solid and hazardous waste management; sources, types and composition of municipal solid waste, hazardous waste, infection waste, and radioactive waste; solid waste generation and prediction of solid waste quantity; storage, collection and transportation, waste transformation, physical chemical and biological treatment processes, recycling, remediation

ICEN 431 Land Use and Urban Environmental Planning

4

Prerequisites: ICEN 331

Basic concept, components and processes, land uses and classification; land use controlling factors; land use planning and process, suitability analysis; land use and natural resources; the economics and regulation of land use; land use management and control

ICEN 432 Global Geomorphology

4

Prerequisites: -

The form of land surface and the process which creates it; the study of submarine features planetary exploration and landscapes of the major solid bodies of the solar system; relationship between landforms and the processes currently acting on them

ICEN 441 Occupational Health and Safety

4

Prerequisites: -

Appropriate design of various environmental sanitation facilities; health assessment and safety measures and works for the industrial factory workers, officers etc; controlling work-related risks; workable strategy in managing occupational health and safety; practical exercises included

ICEN 460 Ecotourism**4****Prerequisites:** -

Ecological principles applied to tourism; principles of human behavior used in eco-tourism issues; the relationship between natural resources and tourism; planning and management of natural, cultural resources and people's way of life for sustainable use in tourism with special focus on rural areas, wildlife sanctuaries and other areas of forests, mountains, beaches and islands

ICEN 461 Energy Conservation and Development**4****Prerequisites:** -

World and local energy situation; energy policies and strategies; the relationship between energy, the environment and the economy; renewable resources and social energy requirements; conservation, substitution and technology options; integrated energy management systems

ICEN 462 Coastal and Marine Resources**4****Prerequisites:** -

Coastal areas or coastal zones; coastal utilization, impacts on coastal ecosystems, regulations and laws as well as the principles for coastal conservation and managements

ICEN 464 Water Resources Management**4****Prerequisites:** -

The processes in the hydrologic cycle including measurement, computation, estimation and determination in each area; water resources problems, the conception, planning and design of functional elements and facilities to control and utilize water, basic to all water management

ICEN 465 Resource Inventory and Baseline Studies Methods**4****Prerequisites: ICEN 331**

Appropriate techniques and methodologies for resource inventory, including the survey on geology, soils, hydrology, aquatic and terrestrial ecosystems, such as wetlands, plants, wildlife, etc; integrated approaches and methods; practical exercises

ICEN 466 Environmental Management Systems**4****Prerequisites: ICEN 241**

Principles of environmental management system (EMS) of ISO14001; development and setting of environmental policy, environmental management system planning; EMS implementation and operating, EMS checking and correction; management review, including management audit

ICEN 467 Environmental Risk Assessment and Management**4****Prerequisites: ICEN 312**

Concept of risk assessment, human health risk assessment and ecological risk assessment, major risk, risk sources, primary control mechanism, transport and secondary control mechanism, target, exposure assessment, risk decision making and risk management, risk communication, environmental risk inventory system

ICEN 468 Environmental Management Policy**4****Prerequisites:** -

Environmental management, public policy and government decision making on environmental issues; the management of environmental research and education; introduction to environmental law, the legal aspects of environmental protection in theory and practice; the role of environmental movements

ICEN 469 Heritage Conservation**4****Prerequisites:** -

An introduction of heritage; cultural, natural, and cross cutting heritages; global and regional extent and distribution of world heritages; asian heritage sites; heritage functions and values; heritage threats; heritage loss and degradation; wise use of heritages; heritage restoration; law and regulation; world heritage conservation, UNESCO world heritage mission; conservation and management issues

ICEN 483 Physical Planning and Environment

4

Prerequisites: -

Theory of physical planning in community and regional levels, human settlement and community development process, land use and infrastructure planning based on physical factors, potential of natural resources and appropriate data from scientific method analysis, and planning between urban and rural area in terms of ecology, environmental planning in urban and rural area based on their potentials and development plan, integrated survey and planning

ICEN 484 Climate Change Mitigation and Adaptation to Changing Disasters

4

Prerequisites: -

Principles of climate change; historical, present and anticipated greenhouse gas emission trends; good practices for greenhouse gas emission reduction measures; calculation of greenhouse gas emissions from each sector; principles of adaptation to anthropogenic-driven disasters; principles of downscaling for climate change impact study

ICEN 491 Seminar in Environmental Science

2

Prerequisites: -

Student presentations and discussions of research or topics of current interest in environment such as conflict resolution, trade and environment, sustainable development, environmental ethics, public communication, decentralization to the local area, etc.

ICEN 492 Environmental Field Excursions

2

Prerequisites: -

An on-site study emphasis on pollution prevention technology and pollution reduction in various types of industry and industrial estate, including resource management in both regional and local areas; public participation on the environmental and resource management; case studies

ICEN 496 Senior Project in Environmental Science

6

Prerequisites: -

An independent study on a research project in environmentally related field under the supervision of an advisor; planning and conducting a good research work; data analyzing and interpretation; scientific writing and presentation

ICMA 151 Statistics for Science I

4

Prerequisite: Placement test or ICMA 100

Statistical ideas and concepts; probability, conditional probability; distribution functions; expected value; estimators, good estimators; hypothesis testing

ICMA 252 Biological Statistics Laboratory

2

Prerequisite: ICMA 151 Statistics for Science I

Statistical softwares; probability; hypothesis testing; linear regression; non-parametric statistics

ICPY 101 Physics I

4

Prerequisites: -

Measurement, units and dimensions; vectors; linear motion; Newton's laws of motion; rotational motion; energy, momentum, static equilibrium, fluid mechanics

ICSC 302 Scientific Research and Presentations

4

Prerequisites: ICBI 101, ICMA 252

Scientific methods of discovery including developing a hypothesis and testing, experimentation, interpretation of the results; proper format for presenting papers in public and in a scientific forum; practical sessions and participation in scientific seminars included



**Mahidol University
International College**

Foundation Courses

(For all 618xxxx students, except ICCI, ICCU and ICMC students)

| | |
|---|----------|
| ICID 100 Freshman Seminar | 0 |
| Prerequisites: - | |
| Compulsory for all freshmen; time management skills, study plan, adjustment to college's life, and teachers' expectation | |
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| ICMA 100 Foundation Mathematics | 0 |
| Prerequisites: Placement test | |
| Expressions and equations; linear functions; polynomials and nonlinear functions; radical and rational functions; the data analysis | |
| | |
| ICME 100 English Resource Skills | 0 |
| Prerequisites: Placement test | |
| A remedial course preparing students for reading and writing academic English at a level suitable for entering the Intermediate English Communication I | |

General Education Courses

(For all 618xxxx students, except ICCI, ICCU and ICMC students)

English Communication

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|---|----------|
| ICGC 101 Academic Writing and Research I | 4 |
| Prerequisites: Placement Writing Test or ICME 100 | |
| An introduction to the academic writing process through the development of the writer's voice through sentencing, structure, and rhetorical devices; a focus on strategies for using and integrating researched sources; methods to compose well-structured essays based on themes relevant to the world today | |
| | |
| ICGC 102 Academic Writing and Research II | 4 |
| Prerequisites: ICGC 101 | |
| The integration of skills in academic research and writing to analyze and create persuasive compositions; techniques to identify strengths and weaknesses in argument; the development of students' knowledge and preconceptions of global issues through a progressive series of essays and journal assignments | |
| | |
| ICGC 103 Public Speaking | 4 |
| Prerequisites: ICGC 102 Academic Writing and Research II | |
| Fundamentals of key skills for confident and effective public speaking through a series of prepared and unprepared speeches; an introduction and application of techniques to inform/persuade audiences; the utilization of Academic Writing and Research I and II to create and deliver speeches to a professional standard | |
| | |
| ICGC 111 Academic Writing and Research I (Advanced) | 4 |
| Prerequisites: Placement Writing Test | |
| Theories and practical methods to enhance students' creative and descriptive abilities; an emphasis on the development of a writer's voice through sentencing, structure, and rhetorical devices; strategies for using and integrating researched sources introduced by means of explaining theories, concepts, and writing conventions | |

ICGC 112 Academic Writing and Research II (Advanced)

4

Prerequisites: ICGC 111

A focus on high levels of academic literacy and presentation skills in reading, writing, and public speaking for experts or near-expert users of English; the utilization of advanced strategies to exploit secondary research and argumentation; an application of advanced skills in critical thinking and rhetorical knowledge through class discussions and written and oral assignments

ICGC 201 Global Realities

4

Prerequisites: ICGC 103 or ICGC 112

An exploration and a critical analysis of key texts on poetry, literature, and legislative documents in order to understand the complexity and challenges of the world we live in; themes encouraging students to consider values, human rights and government; class discussions, journal writing, and presentation activities to demonstrate how students can contribute to the betterment of society

ICGC 202 Literary Analysis

4

Prerequisites: ICGC 103 or ICGC 112

A review of literary works from selected literary genres; an exploration of how literature informs our perceptions of the world by way of analytical and critical thinking; an analysis of short stories, poetry and drama; scaffolding of strategies for students to understand the function of a variety of literary forms

ICGC 203 Creative Writing

4

Prerequisites: ICGC 103 or ICGC 112

An examination of fictions, poetry, drama, and the media production through readings, speeches and films; comparisons of writing in different genres; a creation of the work of publishable quality by means of the consideration of audience and genre

ICGC 204 Advanced Oral Communication

4

Prerequisites: ICGC 103 or ICGC 112

Theories of persuasion, non-verbal techniques, and voice control for advanced presenters; strategies to develop high levels of voice control and expressions; activities including debates, stage, and sales strategies; the development of students' abilities to express themselves confidently in a variety of academic and professional environments through impromptu and prepared speeches

ICGC 205 Linguistics

4

Prerequisites: ICGC 103 or ICGC 112

An introduction to major features and components of the human languages; a focus on power and complexity of languages, its influence on interactions and its contributions to understanding; an exploration of definitions and applications of syntax, semantics, pragmatics, and other related topics

ICGC 206 Literature Into Film

4

Prerequisites: ICGC 103 or ICGC 112

An introduction to the technical aspects of translating literature into films; an exploration of the interplay between literature and films through an analysis of short stories, novels, and plays and their film versions; an exploration of the challenges merging both mediums

ICGC 207 Diverse English Speaking Cultures

4

Prerequisites: ICGC 103 or ICGC 112

An introduction to the study and appreciation of post-colonial literature; utilizing literature, music, and film to help students develop the ability to understand influences in new ways; an evaluation through a combination of mock trials, debates, plays, presentations, reading notes, and essays

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| ICGC 208 Language and Culture | 4 |
| Prerequisites: ICGC 103 or ICGC 112 | |
| An examination of the interplay between language and culture; having texts and class discussions to focus on the importance of understanding the link between culture and languages; a completion of research paper on the topic | |
| ICGC 209 The Story of English | 4 |
| Prerequisites: ICGC 103 or ICGC 112 | |
| The development of English traced from its origins; the/a demonstration through texts, films, and media of the growth and spread of English; an introduction to methods of understanding a variety of linguistic progressions in the language | |
| ICGC 210 First and Second Language Acquisition | 4 |
| Prerequisites: ICGC 103 or ICGC 112 | |
| An introduction to how children develop their first language; comparing and contrasting of the second language development; theories of language development from behaviorism to more recent cognitive and functional approaches; the implications of theories | |
| ICGC 211 Topics in Comparative Literature A: Poetry | 4 |
| Prerequisites: ICGC 103 or ICGC 112 | |
| An in-depth study of poetry, including: metrics, forms, themes, ethnic voices, throughout history; an evaluation of poetry from different genres through a series of discussions, workshops and a term research paper | |
| ICGC 212 Topics in Comparative Literature B: The Short Story and the Novel | 4 |
| Prerequisites: ICGC 103 or ICGC 112 | |
| A study of elements of fictions in short stories and novels through class workshops on characters, dialogue, plot and atmosphere; class discussions to analyze the effect of historical and social developments on selected themes | |
| ICGC 213 Topics in Comparative Literature C: Drama | 4 |
| Prerequisites: ICGC 103 or ICGC 112 | |
| An exploration of ways to understand and appreciate drama by reading, watching, and analyzing theatrical performances; staging and enactment of a theatrical production; readings, essays, and theater workshop activities to prepare students for a final stage performance | |
| Natural Science | |
| • Scientific and Environmental Literacy | |
| ICGN 101 Decision Mathematics | 4 |
| Prerequisites: - | |
| Graphs and networks; linear programming; transportation problems; game theory | |
| ICGN 102 Essential Mathematics | 4 |
| Prerequisites: Placement test | |
| Real numbers, algebraic expressions, percentages, ratio, proportion; linear functions; the systems of linear equations | |
| ICGN 103 Essential Statistics | 4 |
| Prerequisites: ICGN 102 | |
| Statistical ideas and concepts; probability and conditional probability; distribution functions; expected value; estimators; hypothesis testing; a linear regression analysis | |

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| ICGN 104 Mathematics and Its Contemporary Applications | 4 |
| Prerequisites: Placement test or ICMA 100 | |
| A review of algebra, logarithmic and exponential functions, matrix algebra, differential calculus, integral calculus | |
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| ICGN 105 Ecology, Ecosystems and Socio-Economics in Southeast Asia | 4 |
| Prerequisites: - | |
| Human impacts on Southeast Asian ecology; human impacts on Southeast Asian's biodiversity and natural resources; fundamental ecological and resource management principles; current sustainable development issues; sustainable development practices for Southeast Asia | |
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| ICGN 106 Climate Change and Human Society | 4 |
| Prerequisites: - | |
| Human activities and the global climate; consequences for human society; consequences for the essential life support systems; perspectives on human health and diseases; adapting to global climate change; mitigating global climate change; an optional field visit included | |
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| ICGN 107 The Chemistry of Everyday Life | 4 |
| Prerequisites: - | |
| The air we breathe; ozone hole; water quality; acid-base and everyday chemicals; energy and fuels; battery; portable electronics; pharmaceuticals from nature; polymer and plastics; nutrition and modern life; genetic engineering; forensics and the DNA technology | |
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| ICGN 108 Essentials of Culinary Science for Food Business | 4 |
| Prerequisites: - | |
| Changes during the preparation, heating, and storage of raw materials and finished products, food service and commercial packaged food industries; chemical, sensory, and nutritional natures of food, food safety concepts, changing trends and interests, legal requirements of the food establishment | |
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| ICGN 109 Food for Health | 4 |
| Prerequisites: - | |
| Human nutritional requirements; health benefits of various foods; quality and safety of foods; food additives; food production and preservation; health and nutritional value | |
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| ICGN 110 Maker Workshop | 4 |
| Prerequisites: - | |
| A mechanical design consideration, 3D drawing, safety in design; motion in 1 and 2 dimension; the sound and the oscillation motion, mechanical properties of materials; basic electronics, a circuit analysis, soldering; microcontroller, basic programming | |
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| ICGN 111 Physics for CEO | 4 |
| Prerequisites: - | |
| Basic concepts of physics impacting individuals and society on a daily basis: physical quantities, the Newtonian mechanics and dynamics, energy and heat, electricity and magnetism, light and sound, and the electromagnetic spectrum | |
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| ICGN 112 Stargazer | 4 |
| Prerequisites: - | |
| Basic ideas of astronomy, astrophysics, and cosmology; the progress of human understanding of the universe; the impact of the scientific methods on the astronomical observation; the earth and the moon; the solar system; the lifecycle of stars; Black Holes; galaxies; and the current understandings about the origins and the future of the universe | |

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| ICGN 113 Plants, People and Poisons | 4 |
| Prerequisites: - | |
| The plant world; the way plants grow and reproduce; modern technologies used for improving agricultural methods; the basics of plant biology; the distinctions among major groups of plants; the social implications of plant use and abuse | |
| ICGN 114 The Scientific Approach and Society | 4 |
| Prerequisites: - | |
| Scientific literacy; the process of science discovery; verification, its limitation, and the influence on various disciplines; human research and animal research ethics; the critical analysis of current scientific articles; life cycle of scientific knowledge; modeling in science | |
| ICGN 115 Human Evolution, Diversity and Health | 4 |
| Prerequisites: - | |
| The Hominid evolution; primate societies; the origins of human species; the Order Primates; human distinctiveness and diversity; the scientific advancements and the human body; the scientific advancements and the modern society | |
| <ul style="list-style-type: none"> • ICT and Digital Literacy | |
| ICGN 116 Understanding and Visualizing Data | 4 |
| Prerequisites: - | |
| An introduction to data analytics; roles and examples of the data-driven decision making; technology landscape; data kinds and types; data sources and collection techniques; data storage and standard formats; data processing workflow; summary from data; different types of visualization; data visualization tools | |
| ICGN 117 Technology behind E-Business and Digital Strategies | 4 |
| Prerequisites: - | |
| Landscape of technologies in the digital enterprise and e-business; internet-based staples such as web hosting, domain-name acquisition, the social media, the payment systems; electronic business models and digital strategies; emerging trends in technology; legal and ethical issues | |
| ICGN 118 Everyday Connectivity | 4 |
| Prerequisites: - | |
| The Internet, computer networks, and the World Wide Web (W3) in daily life; troubleshooting small network problems; identifying threats and avoiding dangers online; finding credible information on the Web; online communication tools, such as the social media and email, for professional branding; the basic e-business concepts and tools; the e-payment systems | |
| ICGN 119 Computer Essentials | 4 |
| Prerequisites: - | |
| Digital literacy relating to computer literacy and information literacy; the computer hardware and its general functions; the operating systems; software packages and their daily use; computer security; the ethical use of the intellectual property | |

Humanities

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| <ul style="list-style-type: none"> • Logical and Ethical Literacy | 4 |
| ICGH 101 Biotechnology: from Science to Business | |

Prerequisites: -

Biotechnology, bioethics, and the law, biotechnology and the regulatory framework, genetic testing, patenting life, biobanks and modern genomics research; genetically modified organisms; human and animal testing, bioterrorism; biological weapons laws, bio-prospecting, pharmaceutical pricing; the future of the human beings and post-humanism

ICGH 102 Famous Arguments and Thought Experiments in Philosophy

4

Prerequisites: -

An examination of the most striking argumentative moves in philosophy from Plato's Allegory of the Cave to Searle's Chinese Room and beyond; a transfer and an application of paradigmatic philosophical thinking to current open questions in politics and science

ICGH 103 Logic, Analysis and Critical Thinking: Good and Bad Arguments

4

Prerequisites: -

Basic formal tools from sentential and predicate logic; logical structures of arguments used in the everyday contexts of life; an analysis of their strengths and weaknesses; common fallacies in reasoning, including reasoning involving determining probabilities; a construction of good arguments using the principles of informal reasoning

ICGH 104 Moral Reasoning: How can we know what is good?

4

Prerequisites: -

A survey of philosophical, psychological, and scientific contributions to the understanding of moral values; a hands-on construction and an analysis of ethical argument regarding burning issues in applied ethics

ICGH 105 Technology, Philosophy and Human Kind: Where Are We Now?!

4

Prerequisites: -

An examination of major technological and scientific innovations across the globe and their effects on human life and thought; a focus on agriculture, steel, the printing press, the mechanical clock, magnifying lenses, antibiotics, electricity, steam and combustion engines, and the transistor

ICGH 106 The Greeks: Crucible of Civilization

4

Prerequisites: -

An introduction to and an overview of the philosophy and thought of Ancient Greece and its influence on contemporary civilization; theories about knowledge, propaganda, truth, art, psychology, happiness, justice, and democracy

- **Arts and Media Literacy**

ICGH 107 Contemporary Art and Visual Culture

4

Prerequisites: -

Current issues in society; the new media in art today; an analysis of images; social and historical contexts of contemporary art; creative thinking; the effects of globalization on the visual world; an investigation of broader social and cultural matters; subject matters related to ideology, gender, race, and ethnicity

ICGH 108 Creative Drawing Expression

4

Prerequisites: -

Drawing in a variety of medium; drawing as creativity; re-presenting, expressing, texturizing, sublimating, juxtaposing, appropriateness, redefining, constructing, illustrating, and describing; drawing from life: human form; developing cognitive learning skills; utilizing visual communication, the design and art principles (experimentation, exploration, application, techniques for mark making, proportion, gesture, contour, action,

weight, line, value, texture, composition); researching, interpreting, evaluating, and analysing contemporary artists; personal evaluation; personal expression

ICGH 109 Creative Thinking Through Art and Design

4

Prerequisites: -

Combining a hands-on studio experience with demonstrations, lectures and discussions; developing creativity and gaining confidence in communicating one's own unique vision; exploring a variety of art and design mediums; understanding the elements of the visual language; implementing the creative process and creative thinking; developing individual solutions to open-ended problems

ICGH 110 Drawing as Visual Analysis

4

Prerequisites: -

Developing creativity and cognitive learning skills; utilizing visual communication, the/a design and art principles; mark making; observing, analyzing, recording, representing plant and still life forms; practicing and applying, and using techniques for conventional pencil drawing tools (shape, form, perspective, lines, shading, value, negative space, texture, composition); scientific illustration; a realistic representational observation

ICGH 111 Media Literacy: Skills for 21st Century Learning

4

Prerequisites: -

An integration of the media literacy, the media production, and the media ethics; accessing, analyzing, evaluating, questioning, and producing media texts; social, cultural, and political implications of the media; representations in the media; the media as political economy; the media aesthetics; the media and influence; audiences negotiating meaning

ICGH 112 Photography

4

Prerequisites: -

An integration of visual literacy, photography techniques, and ethics; analyzing, evaluating, and authoring photographs; visual aesthetics; visual storytelling and narrative building techniques; the decisive moment; influencing audiences; maximizing the audience engagement; the ethical publications and the dissemination of photographs

ICGH 113 Moving Pictures: A History of Film

4

Prerequisites: -

An investigation of European, American, and Asian films as art, philosophy, social commentary, and propaganda; a focus not only on techniques, styles, and technological advances but on the interpretation, comparison, and criticism

ICGH 114 The Sound of Music: Form, Emotion, and Meaning

4

Prerequisites: -

A survey of a musical expressions and an analysis of its communicative force in light of current research; examples from a wide range of musical styles with a focus on classical music

Foreign Languages

- **German**

ICGL 101 Elementary German I

4

Prerequisites: Placement test

Greetings, introducing oneself or others; German alphabets and phonemes; personal information, numbers from 1 – 100 and price quotations; expressing wishes, telling the time and making appointments; the quality of items, measurements; verb forms, pronouns, sentence structure, gender of nouns, accusative case and plural forms, negation

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| ICGL 102 Elementary German II | 4 |
| Prerequisites: Placement test or ICGL 101 | |
| Ordering and paying for meals in a restaurant; preferences of food and drinks; giving and asking for directions; reading a map; preferences of work conditions; job advertisements; essay writing; yes/no questions, imperative forms, compound verbs, preposition with dative case, modal verbs I, German sentence bracket | |
| ICGL 103 Elementary German III | 4 |
| Prerequisites: Placement test or ICGL 102 | |
| Health advice and problems, healthy and unhealthy lifestyles, events, and accidents, travel reports, curriculum vitae (CV); possessive articles in nominative, accusative and dative case, perfect tense, connectors, modal verbs II | |
| • Japanese | |
| ICGL 111 Elementary Japanese I | 4 |
| Prerequisites: Placement test | |
| The Hiragana and Katakana characters; fundamentals of the basic Japanese grammar (noun-ending sentences, particles, demonstratives, verb-ending sentences, non-past and past tenses); scaffolding of basic vocabulary; basic communication about personal topics (self and others); the description of Japan; the design of written products in the target language; expressing existence, preferences, and agreement; comparing cultures | |
| ICGL 112 Elementary Japanese II | 4 |
| Prerequisites: Placement test or ICGL 111 | |
| The Kanji characters (approximately 50); fundamentals of the basic Japanese grammar concepts (particles, verbs of giving and receiving, na-adjective-ending sentences, i-adjectives-ending sentences, non-past and past tenses, and classifiers); scaffolding of basic vocabulary; basic communication about daily life topics; the design of written products in the target language; expressing simple points of view, describing people and daily life activities; comparing cultures | |
| ICGL 113 Elementary Japanese III | 4 |
| Prerequisites: Placement test or ICGL 112 | |
| The Kanji characters (approximately 50); fundamentals of the basic Japanese grammar concepts (verb conjugation (masu-form, te-form, nai-form, and dictionary form), and related sentence patterns; the polite style of speech, and the plain style of speech, particles); scaffolding of basic vocabulary; basic communication about various topics; the design of written products in the target language; expressing points of view, describing people and various activities; comparing cultures | |
| • French | |
| ICGL 121 Elementary French I | 4 |
| Prerequisites: Placement test | |
| Fundamentals of the basic French grammar (pronouns, present tense conjugation, gender/number, adjectives, prepositions); scaffolding of basic vocabulary; basic communication about personal topics (self and others); an identification and a description of French speaking countries; the design of written products in the target language; expressing existence, preferences and agreement; comparing cultures | |
| ICGL 122 Elementary French II | 4 |
| Prerequisites: Placement test or ICGL 121 | |
| Fundamentals of the simple French grammar (present and future tense, adjective gender, place and agreement, more complex prepositions, more complex questions); scaffolding of simple vocabulary; simple communication about daily life topics (in France and in their country); the design of written products in the target language; expressing simply point of view, describing people and daily life activities; comparing cultures | |

ICGL 123 Elementary French III**4****Prerequisites: Placement test or ICGL 122**

Fundamentals of the more complex French grammar (present and future tense, adjective gender, place and agreement, more complex prepositions, questions and past tense notions); scaffolding of more complex vocabulary; longer communication about daily life topics (in France and in their country); the design of written products in the target language; expressing point of view, describing people and daily life activities; comparing cultures

- **Chinese**

ICGL 131 Elementary Chinese I**4****Prerequisites: Placement test**

The Chinese phonetic system (Pinyin), the Chinese basic writing system (Stroke order), the Chinese characters (approximately 100) and fundamentals of the basic Chinese grammar (interrogative pronouns, particle “de”, Yes/No questions with 吗 “ma”, demonstrative pronouns, classifiers, adverb “ye” 也, “dou” 都); scaffolding of basic vocabulary; basic communication about personal topics (self and others); the description of China; the design of written product in the target language; expressing existence, preferences and agreement; comparing cultures

ICGL 132 Elementary Chinese II**4****Prerequisites: Placement test or ICGL 131**

The Chinese phonetic system (Pinyin), the Chinese writing system, the Chinese characters (approximately 100); fundamental Chinese grammar concepts (interrogative pronouns, classifiers, “de” particles, “de” phrase, adverbials, the continuation of an act sentence structures and the reduplication of verbs); scaffolding of basic vocabulary; basic communication about daily life topics; the design of written products in the target language; expressing simple points of view, describing people and daily life activities; comparing cultures

ICGL 133 Elementary Chinese III**4****Prerequisites: Placement test or ICGL 132**

The Chinese phonetics (Pinyin); The Chinese characters (approximately 150) ; Fundamentals of the basic Chinese grammar concepts (interrogative pronouns, modal verbs, complex sentence, modal particle “le” (了), complement of state, complement of result, complement of duration); scaffolding of basic vocabulary; basic communication about various topics; the design of written products in the target language; expressing points of view, telling direction, describing oneself and other people’s abilities; comparing cultures

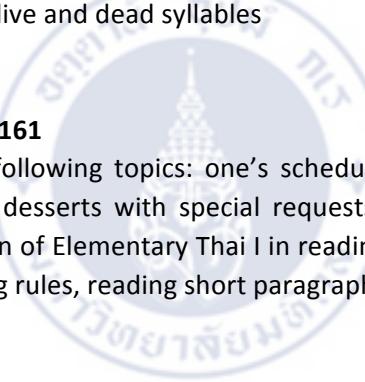
- **Spanish**

ICGL 141 Elementary Spanish I**4****Prerequisites: Placement test**

Fundamentals of the basic Spanish grammar (pronouns, present tense conjugation, gender/number, adjectives, prepositions); scaffolding of basic vocabulary; basic communication about personal topics (self and others); an identification and a description of Spanish speaking countries; the design of written products in the target language; expressing existence, preferences and agreement; comparing cultures

ICGL 142 Elementary Spanish II**4****Prerequisites: Placement test or ICGL 141**

Fundamentals of the basic Spanish grammar (pronouns, present tense conjugation, reflexive verbs, gender/number, adjectives, prepositions); scaffolding of basic vocabulary; basic communication about personal topics (self and others); an identification and a description of Spanish speaking countries; the design of written products in the TL; expressing existence, preferences and agreement; talking about daily habits

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| ICGL 143 Elementary Spanish III | 4 |
| Prerequisites: Placement test or ICGL 142 | |
| Towns, quarters and cities; directions; past experience; present perfect tense, past tense indefinido; verbs ser, estar and hay; vocabulary of places; time markers for past tense; verbs empezar a+ infinitive; verbs ir / irse | |
| • Thai | |
| ICGL 160 Introduction to Thai Language and Culture | 4 |
| Prerequisites: - | |
| A communication in basic situations such as introducing oneself, asking for and giving directions, ordering food and drinks, asking for prices and bargaining at the same time, understanding selected topics of Thai culture in daily life | |
| ICGL 161 Elementary Thai I | 4 |
| Prerequisites: Placement test | |
| Listening and speaking skills on the following topics: introducing oneself, one's friend and family, basic food and drink ordering, places, directions, transportation, buying tickets, clothing items, colours, and sizes; bargaining, counting and using classifiers; reading and writing Thai consonants; vowels placed after, before, above, and below the consonants; Thai numbers; live and dead syllables | |
| ICGL 162 Elementary Thai II | 4 |
| Prerequisites: Placement test or ICGL 161 | |
| Listening and speaking skills on the following topics: one's schedule, making appointments, favourite leisure activities, ordering food, drinks, and desserts with special requests; presentation of one's plan for activities during the school break; a continuation of Elementary Thai I in reading and writing skills; the consonant clusters, tone marks, words with special spelling rules, reading short paragraphs | |
| ICGL 163 Elementary Thai III | 4 |
| Prerequisites: Placement test or ICGL 162 | |
| Communication of the four skills on the following topics: booking or renting accommodation, symptoms of illness and visiting a doctor; selected holidays and festivals; a presentation of a selected province in Thailand; a continuation of Elementary Thai II in reading and writing skills, writing short paragraphs and reading long passages on selected topics | |
|  Social Sciences | |
| • Financial, Economic, Business and Entrepreneurial Literacy | |
| ICGS 101 Accounting for Young Entrepreneurs | 4 |
| Prerequisites: - | |
| Fundamental accounting concepts; the basic accounting process used in small enterprises; the preparation of financial statements; the break-even analysis; business taxation | |
| ICGS 102 Business Sustainability and the Global Climate Change | 4 |
| Prerequisites: - | |
| A study of the role of business in the society; the basic concept of sustainability; global governance; sustainable development; social inequalities and social inclusion; environment sustainability; climate change; climate change mitigation; climate change adaptation; green marketing; business sustainability | |
| ICGS 103 Economics in Modern Business | 4 |
| Prerequisites: - | |

Forces of demand and supply, elasticity, opportunity cost, market structures, pricing strategy, business enterprise, consumers' behavior; the Thai economy, the world economy, globalization and technological, profit maximizing, firm and organization, government policies, a business analysis and managerial decision-making, competitive advantage; the social media economy, innovation-based economy, digital sharing economy, aging society and dynamic business environment

ICGS 104 Essentials of Entrepreneurship

4

Prerequisites: -

Creating new businesses, capturing new markets, enhancing organizational effectiveness; entrepreneurship theories and frameworks, practices of promoting and managing start-ups; the life-cycle of an entrepreneurial venture; concept implementation, entrepreneurial pathway; the customer analysis, integrated marketing, funding, securing and managing capital, the human capital management under the disruptive environment

ICGS 105 Personal Financial Management

4

Prerequisites: -

Personal finance and investment; financial goals and planning process; financial statements and budgets; tax preparation; cash and savings management; investment planning; investing in stocks and mutual funds; making automobile and housing decisions; life insurance; protecting the property; retirement planning

ICGS 106 Fashion and Society

4

Prerequisites: -

The design elements of fashion, fashion terminology, fashion reflecting its temporal and spatial context, fashion and the development of art; fashion as a cultural expression, fashion as creativity; fashion requiring customers' approval and endorsements, fashion and consumer behaviour, fashion and consumerism, and ethical issues of fashion

ICGS 107 MICE 101

4

Prerequisites: -

An introduction to MICE industry; meetings; incentive travels; convention; exhibitions; decision-making criteria; special events; MICE event management; the venue management; logistics for MICE industry; service providers in MICE industry; standards in MICE industry; ethics for MICE

ICGS 108 Money Matters

4

Prerequisites: -

Financial issues related to money, rational choices, income and success; managing personal finances; markets and their functions; challenges in hard economic times; financial responsibility and basic money management skills

- **Global and Multicultural Literacy**

ICGS 109 American History, Film and Modern Life

4

Prerequisites: -

The history of modern America from the post reconstruction to the present; a survey history of the American political economy, society and international relations available in the modern media such as arts, film; influential thinking and writing; television channels and the social media; the state's power projection through hard and soft power; the American Innovative Industrialists; the Progressive Reformers; World War I; the Roaring Twenties; the Great Depression; Isolationism in the interwar years; Women's Suffrage; World War II; the Cold War; the Vietnam War; Racial Tensions; the Bush, Obama, Trump administrations and the future U.S. foreign policy

ICGS 110 Development and Conflicts

4

Prerequisites: -

Concepts of political and economic development; policies; production, and investment priorities; the consequences of economic transformation in poor countries; developmental failure since the 1980s; four development traps, including the conflict trap; the natural resource trap; the bad governance trap; and being landlocked with bad neighbours; solutions of how countries can achieve positive changes; the environmental and social development; the appropriateness and sustainability of the existing conventional development and growth trajectory

ICGS 111 Exploring Religions**4****Prerequisites:** -

Major religions in the world, Hinduism, Buddhism, Sikhism, Chinese religions, Shinto, Judaism, Christianity, and Islam; the origins of the three religious groups, religions arising in India, China, and Japan, and of the family of Abraham; contemporary new religious developments; religious diversities present in the world

ICGS 112 Geography of Human Activities**4****Prerequisites:** -

The interrelationship between humans and the spaces they create; human activities as interdisciplinary by nature; the physical and socially instructed environment people live in; human interactions shaping the human understanding of the environment; the utility of resources; the phenomena on the earth's surface related to human actions; concepts and geographical methodologies used to examine social organizations and environmental consequences

ICGS 113 Perspectives on the Thai Past**4****Prerequisites:** -

The origins of the Thai people in pre-historic times to the late twentieth century; an alternative view incorporating the different regions and various ethnic groups making up present-day Thailand; key issues in Thai history; an analysis of the classics of Thai historiography; an evaluation and an interpretation of a range of primary sources dealing with the Thai past; understanding of how history is written

ICGS 114 Power, Money and Behavior of Powerful States**4****Prerequisites:** -

Understanding the motives behind the inter-state relations; the increase of power, wealth and international prestige; tools states use to achieve objectives and the challenges of decision-making; foreign policies of the great power states having permanent seats and veto power on the UN Security Council; middle-power states including economically and politically advanced countries; critical issues such as nuclear weapons in North Korea; the war in Afghanistan; democratization or terrorism in failing states; and world trade; patterns and trends of foreign policy making of powerful states during the last century individually and in comparison with other states; case studies illustrating the policy decision-making to meet the contemporary international challenges

ICGS 115 Sociology in the Modern World**4****Prerequisites:** -

Sociology as a field of study explaining social, political, and economic phenomena; social interactions and social organizations; sociological perspectives; methodologies and sociological insights; topics relevant to the modern world including culture, social groups, socialization process, deviance, family, religion, social inequality, gender, economic, politics, the media, and social change

ICGS 116 Power and Politics**4****Prerequisites:** -

The understanding of the politics and the political systems of the current world; interactions and connections of different ideas; systems of thought and conflict in contemporary society; an analysis of political phenomenon

ICGS 117 Overcoming Stereotypes, Prejudice and Discrimination**4**

Prerequisites: -

An analysis of psychological theories; psychological approaches to stereotypes, discrimination and prejudice; the emotional, behavioral and cognitive implications; the impact on our behavior and society; debiasing and metacognition

ICGS 118 Skills in Dealing with People Across Cultures

4

Prerequisites: -

The development of skills in dealing with people across cultures, covering topics such as: communication across cultures; parenting in different cultures; understanding consumers from different cultural backgrounds; emotions and motivation across cultures as well as approaches to deal with cultural diversity at work

ICGS 119 World Politics

4

Prerequisites: -

Different disciplinary perspectives on world politics; historical, geographical, anthropological, economic, and political approaches; specific regions in the world politics

ICGS 120 Global Awareness

4

Prerequisites: -

The state of the world: key facts and trends of geography, economy, society, politics and the environment; global relationships: key economic, political, and environmental relations and trends; Thailand in the world: how Thailand impacts the world, and vice versa

- **Psychological Literacy**

ICGS 121 Abnormal Colleagues: how do I make this work?

4

Prerequisites: -

The stigma of psychological issues; the fear of the workplace gossips and job security; an avoidance of getting treatment and counseling; a recognition of various disorders and devising strategies to effectively communicate and work with people; improving the workplace productivity and relationships

ICGS 122 Propaganda, Nudge Theory and Marketing: How to resist?

4

Prerequisites: -

An examination of the science behind the 'mind control' and its implementation in the current society; an investigation of real and possible counter-strategies; a detailed psychological and socio-economic analysis of subtle oppressions of human autonomy in institutional, social, political, and economic practices

Physical Education

ICGP 101 American Flag Football

1

Prerequisites: -

A ball based sport course emphasizing techniques; non-contact game play, including dodging, throwing, and catching and the development of teamwork management, communication, and terminology

ICGP 102 Badminton

1

Prerequisites: -

A racket based sport course stressing technique, strategies, grip, serving, positioning and movement; game play in both singles and doubles

ICGP 103 Basketball

1

Prerequisites: -

A ball based sport course emphasizing attentiveness, dribbling, passing, shooting, rebounding, ball control, game play, and the development of game strategies

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| ICGP 104 Body Fitness | 1 |
| Prerequisites: - | |
| A comprehensive course in one or more exercise techniques: strength/resistance, cardio, plyometric, stretching, high-intensity interval training, and calisthenics; to maintain health and wellness | |
| | |
| ICGP 105 Cycling | 1 |
| Prerequisites: - | |
| A course designed on cycling instruction for safety, fitness, riding techniques, posture, communication, knowledge of the equipment and hazards, for recreational and commuter cycling | |
| | |
| ICGP 106 Discover Dance | 1 |
| Prerequisites: - | |
| A dance based course of current forms and techniques in one or more categories: African/Jazz, Worldwide Dances/Latin Dances, Professional Performance Dance, Modern Dance, Hip-hop/Funk | |
| | |
| ICGP 107 Golf | 1 |
| Prerequisites: - | |
| A club based game course designed on developing correct grip, stance, posture, swing, and the knowledge of equipment, rules, regulations, and etiquette | |
| | |
| ICGP 108 Mind and Body | 1 |
| Prerequisites: - | |
| A course stressing meditation postures, techniques, movement, and breathing to achieve the positive mental state | |
| | |
| ICGP 109 Selected Topics in Sports | 1 |
| Prerequisites: - | |
| Learning concepts, rules and strategies through planned and structured movements by way of sport or activity to enhance a healthy lifestyle | |
| | |
| ICGP 110 Self Defense (Striking) | 1 |
| Prerequisites: - | |
| An external martial arts (striking) course emphasizing hard physical impact and exertion, muscular strength and tension, maximizing speed and power, through the body coordination | |
| | |
| ICGP 111 Self Defense (Grappling) | 1 |
| Prerequisites: - | |
| An internal martial arts (grappling) course stressing timing, awareness, precision, and techniques, using the body leverage for throwing, take downs, pins, and submissions | |
| | |
| ICGP 112 Soccer | 1 |
| Prerequisites: - | |
| A ball based sport course stressing alertness, ball control, including dribbling, passing, trapping, shooting, ball movement, game play, and development of strategies through drills and competitive play | |
| | |
| ICGP 113 Social Dance | 1 |
| Prerequisites: - | |
| A dance based social sport or activity course of choreographed movements, styles and regulations from the International Ballroom (Standard) and the International Latin dances | |

ICGP 114 Swimming**1****Prerequisites:** -

A water based sport course stressing swimming techniques, breathing, and knowledge of buoyancy, propulsion, and water safety

ICGP 115 Tennis**1****Prerequisites:** -

A racket based sport course of techniques, strategy, grip, serve, game play, ball tracking, timing, shot control, through drills, live ball hitting sessions, and competition

ICGP 116 Volleyball**1****Prerequisites:** -

A ball sport course emphasizing passing, setting, serving, developing strategies, positions, game play, teamwork management, and communication



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