

(This content is the outline, they may have some change.)

Learning Content

EP-M.1

EN21101 Foundation English 1

Study foundation English about listening, acting in compliance with requests, advice, instruction, and explanation. Read aloud texts, tales and short poems correctly. Identify the topic and main idea and answer questions from listening to and reading dialogues, tales and short stories. Converse to exchange data about themselves, various activities and situations in daily life. Use requests and give instructions and clarifications according to the situation. Speak and write appropriately to express needs, ask for help and agree and refuse to give help in various situations.

Speak and write appropriately to ask for and give data and express opinions about what has been heard or read. Speak and write to express their own feelings and opinions about various matters around them, various activities, as well as provide brief justifications appropriately. Speak/write to express opinions about various matters around them. Use language, tone of voice, gestures and manners politely and appropriately by observing social manners and culture of native speakers. Participate in language and cultural activities in accordance with their interests. Tell differences and similarities between pronunciation of various kinds of sentences, use of punctuation marks and word order in accordance with the structures of sentences in foreign languages and Thai language. Compare similarities and differences between the festivals, celebrations, important days and lifestyles of native speakers and those of Thais. Search for, collect and summarise the data/facts related to other learning areas from learning sources, and present them through speaking/writing. Use language for communication in real situations/ simulated situations in the classroom and in school. Use foreign languages in conducting research for knowledge/ various data from the media and different learning sources for further education and livelihood. Use language process to establish knowledge, understanding, concept, critical thinking, skills, and practice. Give opportunities to study by integration, to do self-study, pair work and group work.

Students will have knowledge, understanding, communicative skills, life-skill ability,

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and ability to use technology.

Integrated in learning the values of work determination, eagerness to learn, discipline, honesty, and responsibility.

Learning Content

EP-M.1

EN20213 Supplemental English 13

Study foundation English about different types of media, directions, requests, advices, explanations, fables, poems, sentences, statements, non-text information, news and information, activity scenarios, needs, help, opinions, routines, experiences, surrounding environment, language and culture, social manners, festivals, special days, traditions, cultures, similarities and differences of sentences, punctuations, word order, sentence structures, knowledge connection, information, facts, role play situations, basic tools, various knowledge and information from media and learning resources. Use language processing, process of establishing knowledge and understanding, process analysis, process skills practice, work process, process of establishing attitudes and conceptualization process to create communicative ability, living skills ability, thinking ability, and problem-solving ability along with creating disciplines, diligence, endeavor, love of being Thai, self-sufficiency, honesty, public mind, nationality, religiosity, loyalty, and positive attitude toward language learning.

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Learning Content

EP-M.1

EN21102 Foundation English 2

Study foundation English about listening, acting in compliance with requests, advice, instruction, and explanation. Read aloud texts, tales and short poems correctly. Identify the topic and main idea and answer questions from listening to and reading dialogues, tales and short stories.

Converse to exchange data about themselves, various activities and situations in daily life. Use requests and give instructions and clarifications according to the situation. Speak and write appropriately to express needs, ask for help and agree and refuse to give help in various situations.

Speak and write appropriately to ask for and give data and express opinions about what has been heard or read. Speak and write to express their own feelings and opinions about various matters around them, various activities, as well as provide brief justifications appropriately. Speak/write to express opinions about various matters around them. Use language, tone of voice, gestures and manners politely and appropriately by observing social manners and culture of native speakers.

Participate in language and cultural activities in accordance with their interests. Tell differences and similarities between pronunciation of various kinds of sentences, use of punctuation marks and word order in accordance with the structures of sentences in foreign languages and Thai language.

Compare similarities and differences between the festivals, celebrations, important days and lifestyles of native speakers and those of Thais. Search for, collect and summarise the data/facts related to other learning areas from learning sources, and present them through speaking/writing. Use language for communication in real situations/ simulated situations in the classroom and in school. Use foreign languages in conducting research for knowledge/ various data from the media and different learning sources for further education and livelihood.

Use language process to establish knowledge, understanding, concept, critical

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thinking, skills, and practice. Give opportunities to study by integration, to do self-study, pair work and group work.

Students will have knowledge, understanding, communicative skills, life-skill ability, and ability to use technology.

Integrated in learning the values of work determination, eagerness to learn, discipline, honesty, and responsibility.

Learning Content

EP-M.1

EN20214 Supplemental English 14

Study foundation English about different types of media, directions, requests, advices, explanations, fables, poems, sentences, statements, non-text information, news and information, activity scenarios, needs, help, opinions, routines, experiences, surrounding environment, language and culture, social manners, festivals, special days, traditions, cultures, similarities and differences of sentences, punctuations, word order, sentence structures, knowledge connection, information, facts, role play situations, basic tools, various knowledge and information from media and learning resources. Use language processing, process of establishing knowledge and understanding, process analysis, process skills practice, work process, process of establishing attitudes and conceptualization process to create communicative ability, living skills ability, thinking ability, and problem-solving ability along with creating disciplines, diligence, endeavor, love of being Thai, self-sufficiency, honesty, public mind, nationality, religiosity, loyalty, and positive attitude toward language learning.

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Learning Content

EP-M.1

HP21101 Foundation Health Studies 1

Study the importance of nervous system and endocrine system affecting health, growth, and development of adolescence, methods for taking care of nervous system and endocrine to function normally, analysis of growth status with the benchmarks and related factors, methods for developing one's self to grow up with maturity, physical, mental, emotional, and sexual development changes, characteristics of physical, mental, emotional, and sexual development changes, self-acceptance and self-adjustment to the physical, emotional, and sexual development changes, and sexual deviation. Use process of establishing knowledge and understanding, practical skills, problem-solving skills, decision-making skills, value to Create knowledge, understanding, and apply the knowledge to real-life situations with honesty and studiousness.

Learning Content

EP-M.1

HP21102 Foundation Physical Education 1

Study about improvement of kinesthetic ability used in Thai and international sports, the importance of exercising and playing both Thai and international sports as healthy lifestyles, awareness of what learnt to create good values and characteristics to influence themselves, family, community and society. Use in the learning the discussion process, individual practice, team practice, physical fitness testing together with proper values of honesty and determination to learn.

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Learning Content

EP-M.1

HP21103 Foundation Health Studies 2

Study principles for choosing foods suitable for one's age, problems from nutritional status, malnutrition status, overweight status of Thai children, methods of standard weight control, testing methods of physical efficiency, methods of promoting and improving physical efficiency according to testing results, first aid and patients moving safely, passing out, wounds, burns, bone fractures, scalds, and etc, characteristics of drug addicted patients, symptoms of drug addicted patients, preventions for drug addiction, addictive substances, the correspondence between use of addictive substances and occurrence of diseases and accidents, methods to persuade other people to reduce, keep off, and stop drug use, analytical skills, communicative skills, decision-making skills, problem-solving skills, and etc. Use process of establishing realization, knowledge and understanding, practical skills, problem-solving attitudes, decision making, value to create knowledge, understanding, and apply the knowledge to real-life situations with honesty and studiousness.

Learning Content

EP-M.1

HP21104 Foundation Physical Education 2

Study about recreational activity, participation of aerobics, history of table tennis, tactics for table tennis, rules, and manners for players. Cooperate in the lessons value of honesty, discipline, eagerness to learn, being a good leader and follower, good attitude towards exercise, and awareness of good physical fitness. Application of what learned in real life.

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Learning Content

EP-M.1

MA21101 Foundation Mathematics 1

Study fundamental knowledge and practice skills of mathematics in the following topics: rational numbers, exponents, the basics of geometry and relationship between two-dimensional and three-dimensional geometric shapes, and statistics **by using** mathematical process skills. The course is **aimed for** students to have the abilities in problem solving, reasoning, communication, mathematical representations and presentation, connection of various mathematical concepts, connection of mathematical knowledge with other fields of study and creating initiatives. The students will **also** be equipped with the following desired characteristics: having love for the nation, religion and the king, having honesty and integrity, having avidity for learning, having value for self-sufficiency, demonstrating dedication to work, being proud to be Thai, and having public-mindedness. Students will, in addition, be able to **apply knowledge learned with the local wisdom** in natural resources and environment management, and balancing conservation, development and exploitation of natural resources and environment in a sustainable way.

Learning Content

EP-M.1

MA20201 Universal Mathematics 1

Study foundation mathematics on the topics of **Integers, Factors and Multiples, Ratio, Proportion and Percentage, Exponents**. Use mathematical skills and processes which are problem-solving, reasoning, mathematical communication and implication, presentation, mathematical knowledge linking, and creativity with responsibility, disciplines, systematic and accurate working, self-confidence, positive attitude towards mathematics, honesty, and effort.

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Learning Content

EP-M.1

MA20201 Foundation Mathematics 2

Study fundamental knowledge and practice skills of mathematics in the following topics: decimals and fractions; ordered pairs and graphs; linear equation with one variable, ratios and percentages **by using** mathematical process skills. The course is **aimed for** students to have the abilities in problem solving, reasoning, communication, mathematical representations and presentation, connection of various mathematical concepts, connection of mathematical knowledge with other fields of study and creating initiatives. The students will also be equipped with the following desired characteristics: having love for the nation, religion and the king, having honesty and integrity, having avidity for learning, having value for self-sufficiency, demonstrating dedication to work, being proud to be Thai, and having public-mindedness. Students will, in addition, be able to **apply knowledge learned with the local wisdom** in natural resources and environment management, and balancing conservation, development and exploitation of natural resources and environment in a sustainable way.

Learning Content

EP-M.1

MA20201 Universal Mathematics 2

Study foundation mathematics on the topics of **Basic Algebra, Algebraic Equations, Properties of Triangles, Properties of Quadrilaterals, Basic Geometric Constructions**, Use mathematical skills and processes which are problem-solving, reasoning, and mathematical communication and implication, presentation, mathematical knowledge linking, and creativity with responsibility, disciplines, systematic and accurate working, self-confidence, positive attitude towards mathematics, honesty, and effort.

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Learning Content

EP-M.1

MA20221 Supplemental Mathematics 1

Students will **study** supplemental knowledge of mathematics in the area of numbers and numerals and polynomials **by using** mathematical process which includes problem-solving, reasoning, communication the meaning in terms of mathematics, presenting, connecting mathematical knowledge and showing creativity. In regard to desired characteristics, the following aspects are promoted: love of nation, religion and king, honesty and integrity, discipline, avidity for learning, self-sufficiency philosophy, commitment and dedication to work, pride of Thai-ness and public-mindedness. Students will also have opportunities to apply **the 21st century learning skills** which are arithmetic, critical thinking and problem solving.

Learning Content

EP-M.1

MA20222 Supplemental Mathematics 2

Students will **study** supplemental knowledge of mathematics in the area of application 1 and percentage **by using** mathematical process which includes problem-solving, reasoning, communication the meaning in terms of mathematics, presenting, connecting mathematical knowledge and showing creativity. In regard to desired characteristics, the following aspects are promoted: love of nation, religion and king, honesty and integrity, discipline, avidity for learning, self-sufficiency philosophy, commitment and dedication to work, pride of Thai-ness and public-mindedness. Students will also have opportunities to apply **the 21st century learning skills** which are arithmetic, critical thinking and problem solving.

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Learning Content

EP-M.1

SC21103 Technology and Computational Science 1

Students will **study** the following topics: meaning of technology; analysis of causes or factors affecting technological change; functions of technological system; using knowledge, skills and resources to analyze and compare information; select key information to design a solution to solve problem found in daily life about agriculture and food; creating work or developing method by using the engineering design process; using materials, equipment and tools to solve problems correctly, appropriately and safely; abstraction; selecting essential specifications to solve problems; steps to solve problems; writing pseudo codes and flowchart; designing and writing simple programs by using variables, conditions and a repetition structure to solve mathematical and scientific problems; collecting primary data; data processing; creating alternatives and assessing software and online services that provide data management; guidelines for using information technology safely; identity management; judgement on appropriateness of contents; rules and regulations for using media and sources of information.

Students will be **exposed** to a variety of learning processes to help them develop knowledge and understanding; the problem-based learning will also be used in the course.

The course is **aimed** for students to gain knowledge and understanding in the subject area together with competencies in designing, thinking, problem solving and using technology.

In addition, students are **expected to have** the following set of characteristics: honesty and integrity, discipline, avidity for learning and dedication to work.

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Learning Content

EP-M.1

SC20251 Computer for Education 1

Study about evolution/roles of the internet, principles on searching for information on the internet, practice of searching for information, producing printing media such as postcards, report cover, portfolio cover, PR documents, and CD cover. Use in learning the practicing skills and analytical skills in order to acquire knowledge, understanding, ability to communicate, and ability to use technology. Integrated in learning the desired characteristics: honesty, public mindedness, determination in learning, and eagerness to learn.

Learning Content

EP-M.1

SC20252 Computer for Education 2

Study about presentation design by using the computer, use of presentation software and saving work on CD. Use in learning the practicing skills and analytical skills in order to acquire knowledge, understanding, ability to communicate, and ability to use technology. Integrated in learning the desired characteristics: determination in learning, and eagerness to learn.

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Learning Content

EP-M.1

SC21101 Foundation Science 1

Study the fundamental knowledge of science in the following topics: substances around us – properties of substances, classification of substances, changes of substances, pure substance and mixture, properties of pure substance and mixture, element and compound; cells of unicellular living organisms, cells of multicellular organisms, fundamental structure of cell, use of light microscope to study cell and internal structure of cell, important parts of plant cell and animal cell; system management of living things, the process when the substances passing through cells-diffusion and osmosis, photosynthesis in plants, xylem and phloem, reproduction in flowering plants, sexual reproduction in flowering plants, asexual reproduction in plants, importance of some nutrients on living and growth in plants, fertilizers containing appropriate nutrients for plants, propagation, biotechnology such as tissue culture and genetic engineering.

Students will learn to **apply** self-study skill, technological skill and team working skills. They will also use the scientific process: knowledge exploration, observation, investigation, data search, experiment, discussion, concept construction, practice, management, group working, value development, presentation of information, and questioning.

The course is **aimed** for students to gain knowledge and understanding; have ability to think, solve problems and apply knowledge learned in everyday life. The course is additionally **aimed** for students to demonstrate the following characteristics: love of nation, religion and the king, honesty and integrity, self-discipline, avidity for learning, self-sufficiency, dedication to work, pride of Thai-ness, public-mindedness and characteristics of AC gentleman.

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Learning Content

EP-M.1

SC20201 Universal Science 1

Study foundation science on the topics of unit of life and plant life, cells, transport of substances through cells, photosynthesis, transport in plants, reproduction, plant sensitivity, substances in daily life, types of substances and classification, properties of substances, acid-based solution, use of acids and bases in daily life, concentration of solution, change of mass properties and energy, and factors affecting phase change and dissolution. Use the process of establishing knowledge and understanding, scientific process, and skills which are observation, data exploration, experiment, making judgments from data, data implication, classification, data interpretation and drawing conclusion, analysis, explanation, and discussion to create knowledge, and understanding and apply the knowledge to real-life situations with responsibility, honesty, disciplines, creativity, endeavor, self-sufficiency, scientific mind, scientific attitude, public mind, love of being Thai, and proper values.

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Learning Content

EP-M.1

SC21102 Universal Science 1

Study the fundamental knowledge of science about thermal energy; temperature measuring devices; temperature measurement; effects of heat on expansion and contraction of a substance; effects of heat on changes of temperature in a substance; effects of heat on changes on states of matter; effects of heat on expansion of objects as well as application of knowledge learned in everyday life; three types of heat transfer – heat conduction, heat convection, and heat radiation; heat absorption and release; application of knowledge learned in everyday life; heat equilibrium; atmosphere; temperature; humidity; effects of air pressure on weather phenomenon; weather phenomenon – formation of cloud, rain, storm, thunderstorm, tropical storm, monsoon; weather forecast-the reference of information about temperature, air pressure, humidity, quantity of cloud and rain to interpret the meaning and forecast the weather; storm; El Nino and La Nina; effects of natural factors and human activities on global warming, greenhouse effects; the ozone hole and acid rain.

Students will **use** the process skills to develop knowledge and understanding and practice self-study method. The course will also enhance students' technological skills, skill to work with other people, scientific process and scientific process skills which include observing, searching for information, experimenting, making informed judgement from data, presenting the meaning of data, classifying data, interpreting data, making a conclusion, analyzing, explaining and discussing. The aim of the course is **for students to** have knowledge, understanding and abilities to think, to solve problems and to be able to apply knowledge learned in everyday situations. **In addition**, students will be equipped with the following characteristics: love for the nation, religion and the king, honesty and integrity, self-discipline, avidity for learning, self-sufficiency, dedication and commitment to work, pride of Thai-ness, public-mindedness, and the qualities of an AC gentleman.

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Learning Content

EP-M.1

SC20202 Universal Science 1

Study foundation science on the topics of matters in life, types of matters, classification of matters, properties of matters, acid-base, use of acid-base in life, factors affecting solutions, temperature, heat transfer, heat absorption, heat radiation, heat balance of atmosphere.

Use the process of establishing knowledge and understanding, scientific process, and skills which are observation, data exploration, experiment, making judgments from data, data implication, classification, data interpretation and drawing conclusion, analysis, explanation, and discussion to create knowledge, and understanding and apply the knowledge to real-life situations with responsibility, honesty, disciplines, creativity, endeavor, self-sufficiency, scientific mind, scientific attitude, public mind, love of being Thai, and proper values.

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Learning Content

EP-M.1

SC20221 Supplemental Science 1

Students will **study**, research, tell, explain, and experiment about scientific mind; nature of science; scientific knowledge; definition and components of the scientific process; thirteen scientific process skills such as observation and measurement skills, problem solving and hypothesis development skills, variable identification and control, planning and performing experiments, classification and organization of data, forecasting skills, making conclusions, selection and instructions for using science equipment.

Students will **apply** the scientific process: knowledge search, exploration, investigation, data research and discussion. They will acquire knowledge, ideas, and understanding and will be able to present and communicate what is learned. Students will also have the ability to make decisions and apply knowledge to everyday life. Scientific mind, ethics and morals, together with proper social values will be promoted.

In terms of characteristics, the following aspects are **developed**: love of nation, religion, and king, honesty, discipline, avidity for learning, self-sufficiency philosophy, dedication and commitment to work, pride of Thai-ness, public-mindedness and qualifications of an AC gentleman. Students will additionally have opportunities to apply **the 21st century learning skills** which are **teamwork, collaboration, leadership, and local wisdom**.

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Learning Content

EP-M.1

SC20222 Supplemental Science 2

Study, research, tell, explain, practice, experiment and calculate about the use of basic science equipment, practices for science laboratory use; use and maintenance of microscopes and calculation of microscope magnification; simple experiments in relation to chemistry, biology and physics.

Students will **apply** the scientific process: knowledge search, exploration, investigation, data research, data record, data classification, and discussion. They will acquire knowledge, ideas, and understanding and will be able to present and communicate what is learned. Students will also have the ability to make decisions and apply knowledge to everyday life. Scientific mind, ethics and morals, together with proper social values will be promoted.

In terms of characteristics, the following aspects are **developed**: love of nation, religion, and king, honesty, discipline, avidity for learning, self-sufficiency philosophy, dedication and commitment to work, pride of Thai-ness, public-mindedness and qualifications of an AC gentleman. Students will additionally have opportunities to apply **the 21st century learning skills which are teamwork, collaboration, leadership, and local wisdom.**