



KASETSART UNIVERSITY
OFFICE OF THE REGISTRAR
BANGKOK 10900, THAILAND.



STUDENT ID 43051499

NAME Mr. Kittipat APICHARTTRISORN

นายนิตติภัทร อภิชาตติธรรสน์

DATE OF BIRTH September 2, 1982

PLACE OF BIRTH Thailand

DATE OF ADMISSION June 5, 2000

FACULTY OF Engineering

FIELD OF STUDY Electrical Engineering

DEGREE CONFERRED B.Eng. (Electrical Engineering)

DATE OF GRADUATION October 2, 2004



COURSE				COURSE					
CODE	COURSE TITLE	GR	CR	CODE	COURSE TITLE	GR	CR		
<u>First Semester 2000</u>				<u>Second Semester 2002</u>					
175126	Takraw	W	1	205312	Electrical Engineering Analysis I	W	3		
204111	Computers & Programming	C+	3	205321	Communication Systems I	B	3		
355111	Foundation English I	NP	3	205331	Electrical Measurements & Instrumentations I	D	3		
417167	Engineering Mathematics I	B	4	205332	Linear Control Systems	D+	3		
420111	General Physics I	C	4	205354	Digital Circuits & Logic Design	C	3		
999021	Thai Language for Communication	C	3	205414	Digital Signal Processing	C	3		
sem. G.P.A. = 2.39		cum. G.P.A. = 2.39		355111	Foundation English I (Audit)	NP	3		
<u>Second Semester 2000</u>				<u>First Semester 2003</u>					
175152	Fencing	F	(1)	175124	Handball	A	1		
208111	Engineering Drawing	D	3	204212	Data Structures & Algorithms I	B	3		
355111	Foundation English I	NP	3	205312	Electrical Engineering Analysis I	A	3		
403111	General Chemistry	D	4	205422	Communication Systems II	D+	3		
403112	Laboratory in General Chemistry	C+	1	205429	Satellite Communications	A	3		
417168	Engineering Mathematics II	C+	3	205442	Antenna Engineering	C+	3		
420112	General Physics II	B	3	205491	Electrical Engineering Project I	A	1		
420114	Laboratory in Physics II	C	1	205497	Seminar	B+	1		
999032	Thai Studies	D+	3	355111	Foundation English I	P	3		
sem. G.P.A. = 1.71		cum. G.P.A. = 2.00							
<u>First Semester 2001</u>				<u>Second Semester 2003</u>					
204212	Data Structures & Algorithms I	W	3	205424	Digital Telephone System	B	3		
205211	Electric Circuit Analysis I	C+	3	205427	Data Communications & Networks	B	3		
205214	Electrical Engineering Materials	W	3	205428	Wireless Communications	A	3		
208221	Engineering Mechanics I	D	3	205443	Antenna Engineering Laboratory	C+	1		
208281	Workshop Practice	W	1	205499	Electrical Engineering Project II	B+	2		
417267	Engineering Mathematics III	F	(3)	206401	Introduction to Safety Engineering	D+	1		
sem. G.P.A. = 1.17		cum. G.P.A. = 1.82		208281	Workshop Practice	C+	1		
				355112	Foundation English II	B+	3		
<u>Second Semester 2001</u>				417268	Engineering Mathematics IV	B	3		
204221	Computer Organization & Assembly Language	C	3						
205212	Electric Circuit Analysis II	C+	3						
205213	Electric Circuit Laboratory	C	1						
205251	Electronic Circuits & Systems I	D	3	<u>Summer Session 2004</u>					
205261	Electromechanical Energy Conversion I	C	3	208222	Engineering Mechanics II	A	3		
205291	Electrical Practice	D+	1	355113	Foundation English III	B+	3		
417267	Engineering Mathematics III	C+	3						
sem. G.P.A. = 1.97		cum. G.P.A. = 1.86							
<u>First Semester 2002</u>				<u>First Semester 2004</u>					
205311	Signals & Systems	B+	3	175165	Weight Training	A	1		
205313	Applied Probability for Electrical Eng.	C	3	205214	Electrical Engineering Materials	A	3		
205341	Electromagnetic Fields & Waves I	D+	3	355231	English Writing I	B+	3		
205351	Electronic Circuits & Systems II	D+	3	387121	Introduction to Logic	B+	3		
205352	Electronics Laboratory	C	1	999012	Health for Life	B+	3		
205361	Electromechanical Energy Conversion II	D+	3	999141	Man & Society	B	3		
205362	Electromechanical Energy Conv. Lab. I	C	1						
208241	Thermodynamics I	A	3						
sem. G.P.A. = 2.30		cum. G.P.A. = 1.97							
				<u>Field Work</u>					

TRANSCRIPT CLOSED									

OMRAT CHUSAWAT
 Assistant Registrar

Given On October 15, 2013 Checked by

Explanation :

1. One credit hour is equal to 1 hour of lecture, recitation or quiz a week during a regular semester or 2-3 hours a week of practice during a regular semester.

2. Grading system :

A	:	excellent	=	4.0
B+	:	very good	=	3.5
B	:	good	=	3.0
C+	:	above average	=	2.5
C	:	average	=	2.0
D+	:	below average	=	1.5
D	:	poor	=	1.0
F	:	failed	=	0
S	:	satisfactory		
U	:	unsatisfactory		
P	:	pass		
NP	:	not pass		
W	:	withdrawn		
I	:	incomplete		

3. Credit symbols :

* or NR	=	not required in current curriculum or field of study.
()	=	not accredited but required in current curriculum or field of study and included in computation of grade point average.

4. A minimum Cumulative Grade Point Average of 2.00 is required for receiving a Bachelor Degree.



**KASETSART UNIVERSITY
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BANGKOK 10900, THAILAND**

No. 0513.131 / **18028**

This is to certify that

.....**Mr. Kittipat APICHARTTRISORN**.....

has fulfilled all academic requirements for the Bachelor of Engineering (Electrical Engineering) degree in Electrical Engineering. The Kasetsart University Council has approved the conferment of degree, as of October 2, 2004

Given on **October 15, 2013**

OMRAT CHUSAWAT
Assistant Registrar



Photograph of **Mr. Kittipat APICHARTTRISORN**





Office of the Registrar
Kasetsart University

Description of Courses

204111 Computers & Programming 3(2-3)

Basic structure of modern computer systems; data representation in computers; algorithmic problem solving; program design and development methodology; introductory programming using a high-level programming language; programming practice in computer laboratory.

417167 Engineering Mathematics I 4(4-0)

Mathematical induction, matrices and determinants, polar and rectangular coordinates, limits and continuity, derivatives and applications, differentials, integration, series.

420111 General Physics I 4(3-3)

Mechanics, kinetic theory of gases, thermodynamics, wave, sound.

999021 Thai Language for Communication 3(3-0)

Communication of the Thai language, thoughts and language usage, language and society, and the skill development of the Thai language for communication.

ABDUL HADE USENG
Assistant Registrar

208111 Engineering Drawing 3(2-3)

Lettering techniques; applied geometry drawing; orthographic drawing; orthographic dimensioning; pictorial drawing; pictorial dimensioning; section drawing; reference planes; lines and principles planes; auxiliary views; point, lines and planes; rotation; intersection of figures; development; use of computer in drawing.

403111 General Chemistry 4(4-0)

Atoms and electrons in atoms, periodic system , chemical bonds, chemical reactions, gases, liquids and solids, solutions, fundamental thermodynamics, chemical kinetics, chemical equilibria, electrolytes and their ionization, acids and bases, ionic equilibria, electro-chemistry.

403112 Laboratory in General Chemistry 1(0-3)

Laboratory work for General Chemistry.

417168 Engineering Mathematics II 3(3-0)

Vectors and solid analytic geometry, calculus of several variables, multiple integration, vector calculus, calculus of complex variables.

420112 General Physics II 3(3-0)

Electricity and magnetism, electromagnetic waves, optics, principles of modern physics.



420114 Laboratory in Physics II 1(0-3)

Laboratory for General Physics II or Basic Physics II.

999032 Thai Studies 3(3-0)

History, religions, language, literature, arts, local wisdom, and the lifestyle of Thai; in the past, present and future trend.

205211 Electric Circuit Analysis I 3(3-0)

Definitions, basic concept and units, resistive circuits, dependent source, elementary circuit analysis, network theorem, graph theory, energy storage elements, first order system, second order circuits, sinusoidal signal, ac steady-state analysis, two-port networks.

208221 Engineering Mechanics I 3(3-0)

Force analysis; equilibrium, application of equilibrium equation to frames and machines, centroid; theorem of Pappus, beams; fluid mechanics; friction; virtual work; stability of equilibrium, area moment of inertial.

204221 Computer Organization & Assembly Language 3(3-0)

Basic computer organization; registers, arithmetic-logic unit, and control unit; machine representation of data and instructions; machine language and assembly language programming; addressing modes; interrupts and input/output programming.



205212 Electric Circuit Analysis II 3(3-0)

Complex frequency and s-plane analysis, network function, frequency response, Laplace transformation and its application to circuit analysis, resonance and scaling circuits, coupled circuits, transformer, two-port networks, three-phase circuit.

205213 Electric Circuit Laboratory 1(0-3)

Laboratory experiments on topics covered in Electrical Circuit Analysis I.

205251 Electronic Circuits & Systems I 3(3-0)

Electrical property of insulator, semiconductor and conductor, energy band theory of crystal, intrinsic and extrinsic semiconductor, various properties of semiconductor, property of p-n junction, dc characteristics of diodes, transistor, FET and MOSFET, diodes and its applications, transistor and FET models at law frequency, low frequency circuits analysis, differential amplifier, operational amplifier characteristic and basic applications, digital circuit, basic gates, combination circuit and synthesis techniques, computer simulation for combination logic, diode logic circuit, TTL circuit, MOS logic circuit, IC fabrication process.

205261 Electromechanical Energy Conversion I 3(3-0)

Energy sources, magnetic circuits, principles of electromagnetic and electromechanical energy conversion, energy and co-energy, principles of rotating machines, dc machines, starting method of dc motors, speed control methods of dc method, theory and analysis of single phase and three phase transformers.



205291 Electrical Practice 1(0-3)

Workshop practice in basic electrical equipment and in wiring installation.

417267 Engineering Mathematics III 3(3-0)

First order differential equations, linear differential equations with constant coefficients, the Laplace transforms, inverse transforms, power series solutions, linear systems of equations.

205311 Signals & Systems 3(3-0)

Continuous and discrete-time transform analysis techniques, linear and time variant systems, transfer functions, Fourier series, Fourier transform, Laplace and z transform, sampling theorem, solution of differential and difference equation using transforms.

205313 Applied Probability for Electrical Engineers 3(3-0)

Joint and conditional probability, statistical independence, discrete and continuous random variables, distribution and density functions, operations on one and multiple random variables, expectation, moments and characteristic functions, law of large numbers, central limit theorem, random processes, spectral characteristics of random processes.



205341 Electromagnetic Fields & Waves I 3(3-0)

Vector analysis, electrostatic fields: Coulomb's law, potential and energy, conductors and dielectric, convection and conduction currents, solution of Laplace's and Poisson's equations, magnetic fields, inductance, displacement current, time-varying electromagnetic field and Maxwell's equation.

205351 Electronic Circuits & Systems II 3(3-0)

Transistor model at high frequency, Miller's thoern, bootstrapping circuit, frequency response of transisitor circuits, Bode plot, feedback circuit analysis, stability, phase and gain margin, compensation, oscillator circuits, power amplifier circuits analysis, power electronic device and its applications, analog circuits simulation, digital sequential circuits, memory, dynamic and static MOS, ADC and DAC circuits, PAL, PLD, introduction to microprocssor.

205352 Electronics Laboratory 1(0-3)

Laboratory experiments on topics covered in Electronics Circuits and Systems I and Electronic Circuits and System II.

205361 Electromechanical Energy Conversion II 3(3-0)

Transformers in three phase systems, ac machines : construction, steady state performance and analysis of induction machiner and synchronous machines, starting methods of phphase induction motors and synchronous motors, fractional horse-power motors, introduction solid-state control of ac machines.



205362 Electromechanical Energy Conversion Laboratory I 1(0-3)

Laboratory experiments on topics in Electromechanical Energy Conversion I and parts of Electromechanical Energy Conversion II and other related topics.

208241 Thermodynamics I 3(3-0)

Properties of pure substances, work and heat, first and second laws of thermodynamics, entropy, ideal gases.

205321 Communication Systems I 3(3-0)

Properties of signals and noise, band limited signals and noise, introduction to random processes and ideal communication systems, measure of information and coding, baseband communication, PCM, digital signaling format, ISI, DM, time division multiplexing, bandpass communications, communication system components, linear modulation and exponential modulation, digital telecommunication systems, signal to noise ratio of receiver, working knowledge of communication systems, mobile telephone, satellite communication system, optical fiber systems and spread-spectrum modulations, discussion on interesting communication topics.



205331 Electrical Measurements & Instrumentations I 3(3-0)

Basic principles and terminology, system of units, sources of measurement errors, calibration and traceability, grounding and safety, error, accuracy, precision, resolution, sensitivity, etc., analogue measurements and instrumentation, PMMC movement, movingiron-movement, electrodynamometers movements, ammeters, voltmeters, ohmmeters, multimeters, wattmeter, varmeter, pf meter, measurements of energy, frequency and phase meters, potentiometer, dc and ac bridges, instrument transformers, oscilloscope, digital multimeter, principles of electrical transducers, temperature, pressure, flow, level, displacement, speed.

205332 Linear Control Systems 3(3-0)

Consideration of feedback concept, application in time domain and frequency domain techniques to modeling, analysis and design of linear systems, stability analysis, introduction to state-space representation.

205354 Digital Circuits & Logic Design 3(3-0)

Number systems and codes, boolean algebra, combinational logic design principles and practices, sequential logic design principles and practices, synchronous and asynchronous sequential logic, digital integrated circuits, circuit design by using Karnaugh map and algorithm state machine, programmable logic devices, interfacing with analogue circuits, CAD for digital logic design.



205414 Digital Signal Processing 3(3-0)

Discrete-time signals and systems, sampling of continuous time signal, Fourier transform of discrete-time singnal and z transform, the discrete Fourier transform and digital filter structures, infinite impulse response filter design techniques and finite impulse response filter design techniques, finite precision effects, discrete Hilbert transforms and inverse filtering, cepstrum analysis and homomorphic deconvolution.

175124 Handball 1(0-2)

History, basic skills in handball, fundamental skills in movement, keeping the ball, dribbling, shooting and team playing regular and rules.

204212 Data Structures & Algorithms I 3(3-0)

Basic data structures:stacks, queues, lists, trees, and graphs; data abstraction; applications of data structures; analysis of algorithm complexity; sorting; searching; file processing.

205312 Electrical Engineering Analysis I 3(3-0)

Complex numbers and complex functions, Cauchy-Riemann equations, analytic and harmonic functions, contour integral, Cauchy's integral theorem, Taylor and Laurent series residues, evaluation of integrals, conformal mapping and its applications, algebra of matruces, theory and methods of solving equations and finding inverses, vector space and its applications, linear transformations and matrices.



205422 Communication Systems II 3(3-0)

Fundamentals of information theory, source coding, carrier and symbol synchronization, channel capacity, block and convolutional codes, communication through band-limited linear filter channels, multichannel and multicarrier systems, digital communication through fading multipath channels, interesting modern communication topics.

205429 Satellite Communications 3(3-0)

Theory and practice of satellite communications, orbital aspects, modulation and multiplexing, coding, multiple access techniques, satellite link design, propagation effects, earth terminals and very small aperture terminal networks.

205442 Antenna Engineering 3(3-0)

Basic definitions and theorems, formulation of the radiation problems, isotropic point source, power and field patterns, directivity and gain, radiation impedance, wave polarization, radiation from current elements, radiation properties of linear wire antenna, linear array antenna, Uda-Yagi antenna, log-periodic antenna, aperture antenna, smart antenna.

205491 Electrical Engineering Project I 1(0-3)

Select and prepare interesting project in electrical engineering.

205497 Seminar 1

Presentation and discussion on current interesting topics in electrical engineering at the bachelor degree level.



355111 Foundation English I 3(3-0)

Exposure to significant structures of the English language as the basis of developing language abilities: listening, speaking, reading and writing through language skill integration with emphasis on communicative competence.

205424 Digital Telephone Systems 3(3-0)

Public analog telephone network, descriptions and comparison of voice digitization algorithms, digital transmission and multiplexing, digital switching architecture, switching system operation and circuits, network synchronization, digital telephone networks control and management, traffic analysis, IP telephone systems, network integration with wireless and data networks.

205427 Data Communications & Networks 3(3-0)

Introduction to data communications and networks, layered network architecture, point-to-point protocols and links, delay models in data networks, multi-access communication, routing in data networks, data flow control.

205428 Wireless Communications 3(3-0)

Cellular system design, mobile radio propagation, large-scale path loss, small-scale fading and multipath, modulation equalization, diversity, channel coding, speech and data coding, multiple access techniques, wireless networking system and standard.

205443 Antenna Engineering Laboratory 1(0-3)

Laboratory experiments on topics covered in Antenna Engineering.



205499 Electrical Engineering Project II 2(0-6)

Continuing the same project as in electrical engineering project I.

206401 Introduction to Safety Engineering 1(1-0)

Safety principles of accidents, safety and safety management, technology and safety in workplaces, principles and methods for preventing fire accident in industries, safety laws in factories and occupational health management system.

208281 Workshop Practice 1(0-3)

Practice in work-piece measuring, machine tools, bench works, sheet metal works, gas and electric welding, and CNC machines; safety in workshop.

355112 Foundation English II 3(3-0)

Exposure to significant structures of the English language as the basis of developing language abilities: listening, speaking, reading and writing through language skill integration with emphasis on communicative competence on a higher level.

417268 Engineering Mathematics IV 3(3-0)

Solutions of non-linear equations by iterative method, system of linear equations, solution by iteration, bound and approximation of matrix eigenvalues, approximation of functions, numerical integration, numerical method for first-order differential equations and for two-points boundary value problems.



208222 Engineering Mechanics II 3(3-0)

Mass moment of inertia, mechanics of particle and rigid body in plane motion, equation of motion, principles of impulse and momentum, principle of work and energy, impact, fundamental of space motion.

355113 Foundation English III 3(3-0)

Exposure to significant structures of the English language as the basis of developing language abilities: listening, speaking, reading and writing through language skill integration with emphasis on communicative competence at a more complex level.

175165 Weight Training 1(0-2)

History, basic skills in weight training, the different between weight training and weight lifting, methods of weight training programs construction for individuals, weight training programs for physical fitness development.

205214 Electrical Engineering Materials 3(3-0)

Fundamentals of solid materials, structure of solids, preparation of materials, practical determination of structure, mechanical properties, electrical properties, dielectrics, magnetic properties, superconductivity, optical properties



355231 English Writing I 3(3-0)

Imitation and copying good language models, in order to help imprint on the student's mind the structure, the proper diction, and relationships between sentences. Study of theme development, idea organization and reasoning techniques.

387121 Introduction to Logic 3(3-0)

Process of logical thought in terms of propositions, judgments, induction, deduction syllogism, and fallacies.

999012 Health for Life 3(3-0)

Fertilization and human development. Sex roles. Physical and mental health care promotion. Human risk prevention. Consumer health. Environment and health. Family factors influencing health. Health Science innovation. Field trip.

999141 Man & Society 3(3-0)

Human nature, behavior, and settlement. The relationship of man, society and culture. Economic, political and legal aspects of social organization. Background of Thai society. Social change and social problems.

