

SRINAKHARINWIROT UNIVERSITY

GRADUATE SCHOOL BULLETIN

1981

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PART I

GENERAL INFORMATION

General Information

Historical Development of the Graduate School

Srinakharinwirot University, formerly the College of Education, which comprises eight campuses, namely Prasarnmit, Palasuksa, Bangkhen, Patumwan, Bangsaen, Pitsanuloke, Mahasarakham, and Songkla has offered Bachelor Degrees in various fields since the academic year 1953.

The Graduate Studies began in the academic year 1956 at the College of Education Prasarnmit by firstly offering instruction of Master of Education degree in Developmental Psychology in collaboration with the International Institute for Child Study.

In the academic year 1951 the College of Education Prasarnmit was authorized by the Ministry of Education and the College Council to offer Master's degree programs. In fact, the preparation and development of curriculum had been done before that time with the cooperation of specialists from Indiana University,U.S.A. Eight Master of Education degree programs, namely, Elementary Education, Secondary Education, Higher and Teacher Education, Educational Administration, Educational Guidance, Educational Measurement, Educational Technology and Library Science were offered in the academic year 1951 but not all the programs had enough students to enroll.

At that period the College Act did not cover the establishment of the Graduate School; therefore, the offering of the educational programs after the baccalaureate was entrusted to the Graduate Studies Committee. This committee was composed of the President of the College as Chairman, Vice-Presidents of the campuses in Bangkok, Heads of all faculties and Secretary and Assistant Secretary as members. Members of the committee were adjusted periodically to suit the situation. The committee had continuously performed the duties of the Graduate School until the College was raised to be a university in 1974 and the University was decreed to have the Graduate School as part of her organization. The mentioned committee continued to carry out the mission during the transition period

until the permanent Graduate School Committee was appointed in March of 1976. The Graduate School Council comprises Dean of the Graduate School as Chairperson, Deputy Deans and four other members, selected from Graduate School staff as members, and a Secretary selected by this council.

The University also appoints Advisory Committee for the Graduate School comprising Deans of the faculties that offer programs after bachelor's degree, Vice President for Academic Affairs, Directors of Institutes and Bureau. This Advisory Committee cooperates with the Graduate School Committee in coordinating the graduate studies programs.

Since the academic year 1976 the Graduate School has been administered and coordinated by the Graduate School Committee and the Advisory Committee exercising out the policy concerning graduate studies enacted by the University Council.

In the academic year 1963 the College of Education at Prasarnmit offered Graduate Diploma programs in 12 fields : Thai, English, geography, history, biology, physics, chemistry, mathematics, educational measurement, audio-visual education, library science, and educational guidance.

In the academic year 1974 the College of Education at Prasarnmit initiated a Graduate Diploma in Special Education : Education for the hard of Hearing. In the academic year 1979 the University augmented the Education for the Hard of Hearing program to become a master degree program.

In the academic year 1972 the Ministry of Education considered that the College of Education at Prasarnmit was well prepared to further another step in offering instruction at the doctoral level. However the College took more time to plan the work, personnel, and curricula and was actually ready in the academic year 1974. Then two doctoral programs were launched : Development Education, and Curriculum Research and Development.

Both programs are under the jurisdiction of the Graduate School. The main reason for putting them under the Graduate School rather than under the subject matter departments is because the two programs are of inter-disciplinary nature and under the present circumstances of the University the programs would be most effectively

handled by the Graduate School

At the present time the Graduate School is responsible for carrying out 22 Master of Education programs, and two Doctor of Education programs. The Graduate School has enlarged its responsibility of other campuses allowing them to offer master of Education programs : Pitsanuloke (Educational administration starting in the academic year 1977) ; Bangsaen (biology, educational administration and elementary education starting in the academic years 1977, 1978 and 1980 respectively) ; Mahasarakham (secondary education starting in the academic year 1980) ; and Songkhla (higher Education starting in the academic year 1980). In 1981 a Thai studies program will be the first M.A. program Launched at Songkhla campus.

In the future the University expects to offer Master of Science and more of Master of Arts programs as well as Doctoral programs in other fields responding to the national needs and according to the University's capacity.

Administration of the Graduate School

Administration

The University Council according to the present University Act appoints a Graduate School Committee comprising Dean of the Graduate School as Chairperson, Deputy Deans as members ; other four members selected from Graduate School Faculty as members, and a secretary The Graduate School Committee with the assistance of the Advisory Committee carries out the University Council policies relating to graduate studies programs as well as keeps the program standards, approves curricula, and standard of admissions, and supervising the completion of graduate studies requirements by cooperating with other faculties and departments.The Graduate School Committee has been authorized by the University to appoint ad hoc committees to consider special issues when and where necessary and appropriate.

The University appoints an Advisory Committee comprising Vice President for Academic Affairs, Deans of faculties offering instruction in graduate studies, and Directors of institutes and bureaus.

Advisory Committee

• Vice President for Academic Affairs:Associate Prof. Dr.Song-Sak Srikalasin

Dean of Faculty of Education:Prof. Dr.Aree Sunhachawee

Dean of Faculty of Humanities:Associate Prof. Pranee Thanachanan

Dean of Faculty of Social Sciences:Assistant Prof. Dr.Anan Chiamchareon

Dean of Faculty of Science:Associate Prof. Dr.Prayong Pongtongcharoen

Dean of Faculty of Physical Education:Assistant Prof. Samruan Ratanachan

Director of Educational and Phychological Test Bureau

Associate Prof. Dr.Somboon Chitapong

Director of Institute of Research in Behavioral Sciences

Prof. Dr.Chancha Suwanadhat

Director of Central Library:
Assistance Prof. Dr. Sunthorn Kaewlai

Graduate School Committee

Prof. Dr. Kanda NaThalang, Dean of Graduate School	Chairperson
Prof. Dr. Somporn Buatong	member
Mr. Charoon Komolboon	member
Dr. Tinakorn Nakornsri	member
Dr. Nonglak Wiratchai	member
Dr. Pirom Poonsawat, Deputy Dean of Graduate School at Bangsaen Campus	member
Assistant Prof. Dr. Nibhondh Kinawong, Deputy Dean of Graduate School at Pitsanulok Campus	member
Dr. Kasem Boonon, Deputy Dean of Graduate School at Mahasarakham Campus	member
Assistant Prof. Dr. BanlueThinpang-nga, Deputy Dean of Graduate School at Songkhla Campus	member
Miss Siriyupa Poonsuwan	Secretary

The Office of the Secretary in the Graduate School carries out the business affairs comprising four sections : Business, Records and Statistics, Class and Test Scheduling and Financial Aids, and Thesis and Dissertation.

The Graduate School collaborates with other faculties that offer instruction in graduate studies programs by approving of instructors, and give advice in order to maintain the standards of education at this level.

The Graduate School is helped by a group of faculty members as well as instructors and professors loaned from other faculties.

Faculty Members and Civil Officers in the Graduate School

Prof. Dr. Kanda NaThalang
Prof. Dr. Somporn Buatong
Mr. Charoon Komolboon
Associate Prof. Dr. Chalio Buripakdi

Assistant Prof. Dr. Pisit	Sarawichitr
Dr. Tinnakorn	Nakornsri
Dr. Nonglak	Wiratchai
Miss Siriyupa	Poonsuwan
Mr. Annop	Bhothisook
Mr. Chalermchai	Muang-ngam
Miss Orawan	Tantcharernrat
Mrs. Krisana	Noksakul
Miss Manee	Sirichairate
Mrs. Jarieng	Pintong
Mrs. Rungrong	Sitongdee
Mrs. Areerat	Na Chiangmai
Mrs. Jintana	Rotkorn
Miss Nonglak	Chyehard
Mrs. Prateung	Prasobsan
Miss Nuanlaoe	Volashina
Miss Tanavan	Na-Takoutung
Mrs. Yupin	Khunramwong
Mr. Chalam	Kapin-charanon
Mr. Tao	Cham-nak

Fees for Master and Doctoral Programs

1.	Application fee (paid once)	100 Baht
2.	Registration fee (paid once)	100
3.	Insurance for damage (paid once)	200
4.	Education fee (per semester)	300
5.	Student activities fee (per semester)	40
6.	Athletic fee (per semester)	40
7.	Tuition fee (per credit)	50
8.	Laboratory fee (per hour)	25
9.	Late fee payment (per day)	10
10.	Fine for late return of library's book (per day, per book)	5
11.	Student identification card	5
12.	Transcript (per copy)	10
13.	Certified letter (per copy)	5

14. Preliminary examination fee	100
15. Comprehensive examination fee	100
16. Registration for thesis	
Master program	300
Doctoral program	500
17. Registration fee for graduation	
Master's Degree	200
Doctoral Degree	200

Regulations Governing Graduate Studies at Srinakharinwirot University 1978

Admissions

Admission Requirements

Applicants for all master's degree programs must be holders of Bachelor's degree from Srinakharinwirot University or other institutions approved by this university. Applicants for doctoral degrees must hold master's degree from an accredited university or institutions recognized by the Office of University Affairs. All applicants must have good conduct and have sound health.

Admission Procedure

Applicants for all master's degree programs and doctoral programs have to pass a competitive entrance examination of Srinakharinwirot University or in some special cases the University may, by some good reasons select appropriate applicants and admit them to be students.

Registration to be Students

Applicants become legible students after registration. Applicants must submit all required documents and must report to the University registrar by themselves on the dates, at the time and place specified by the University, and pay the various fees as required.

The applicants who cannot come to register to be students on the dates and at the time specified by the University will lose the right to register to be students unless they notify the University in writing by the dates of registration and come to register within seven days after the last day of registration.

Academic Regulations

Srinakharinwirot University operates on a semester hours credit system. An academic year is divided into two semesters. There are 18 weeks in each semester.

A credit is a measure of the quantity of education the student has received. Each course has specified credits.

Srinakharinwirot University operates a credit system on the following basis :

1 credit = 1 hour of lecture a week a semester
or
2 hours of laboratory work a week a semester
or
3 hours of practicum a week a semester

The number of hours required in practicum may be increased for certain appropriateness.

Academic Status

Students who resgister for the first time and students who have a cumulative grade point average of 3.00 and over are given **in good standing** status. Students who have a cumulative grade point average of between 2.75 and 2.99 are given **probationary** status. Doctoral students will become full candidates after they have already passed the Comprehensive Examination.

Registration of Courses

The dates and registration procedures for each semester are announced by the University.

Students who do not register for courses in any semester by the dates of registration will lose the right to attend classes unless they have special permission from the Dean of the Graduate School.

The program of courses for which students register must receive the prior approval of their advisers. If a course has prerequisite courses students must complete the prerequisite courses or obtain the approval from Head of Department before registration for the course.

Registration is finalized on the receipt of course fees. Students who pay the fees after the specified dates will be fined.

Credit Hours Load

Students who have in good standing status are required to take a minimum of 9 and not more than 15 credit hours for each semester.

Students who have probationary status are required to take a minimum of 6 and not more than 12 credit hours for each semester.

Students who want to register more or less than the credit load must obtain the approval of the Dean.

Students in their last semester may register less than the minimum credit load without obtaining permission from the Dean.

Auditing of Courses

Regular Students

Audit courses carry no credits; do not count towards degree requirements, and are not include in the credit load. Registration procedure and fee charges are the same as credit courses. Students are not required to take the final examination in audit courses. If class attendance is 80% or over, courses are entered in the student's record with the word "audit". Students have to state in the registration form which courses are audit courses.

Others

Any person may attend a course as an auditor providing that the University considers he has sufficient educational background. An auditor must conform to the same regulations as the regular students. Fees and tuition charges have to be paid as stated in the University regulations.

Cancelling and Adding Courses and Withdrawal from Courses.

Cancelling, adding courses or withdrawal from courses must be done with the approval of the student's adviser and with the permission of the Dean of the Graduate School. The Dean will then inform the University registrar.

Permission for cancelling courses and adding courses must be obtained within the first two weeks of the semester with the approval of adviser and permission of the Dean of Graduate School in accordance with load of credit hours requirement.

Permission to withdrawal from courses must be obtained within the first nine weeks of the semester. In special circumstances the Dean may give the student permission to withdraw from a course after the ninth week; permission will also be granted on the condition that he withdraws from all the courses in which he has registered.

Refunding of Course Fees

Students who withdraw or cancel a course because the University, by some necessity, announces not to offer that course for the whole semester can refund all the course fees.

Students who cancel a course within the first two weeks of the semester can be refunded all the fees.

Students who cancel a couse after the first two weeks of a semester cannot be refunded the course fees.

Attendance

In order to be eligible to take his final examination a student must have attended at least 80% of the total class hours.

Grading

Letter gradings are used and have the following values and meanings :

Grade	Meaning	Grade Point
A	Excellent	4
B	Good	3
C	Average	2
D	Poor	1
E	Failure	0
I	Incomplete	—
W	Withdrawal	—

A grade "E" is assigned for failure of the final examination, and also in the following circumstances :

1) The student fails to take the final examination for reasons not approved by the Dean of Graduate School.

2) The student's class attendance is less than 80%.

3) The student fails to observe the examination regulations.

A temporary grade "I" is given in the following circumstances :

1) The student has a class attendance of over 80% but fails to take the final examination because of sickness or other circumstances beyond his control. In this case the permission is made by the Dean.

2) The student fails to complete all the required work and assignments in a course through no fault of his own. In this case a decision will be jointly made by the instructor and Head of Department.

Students receiving grade "I" should arrange with their instructors both to make up their unfinished work and receive a new final grade not later than the end of the next semester, provided they are eligible to enroll. Otherwise the grade "I" will automatically be changed to grade "E".

A grade "W" is given in the following circumstances :

1) The Dean of Graduate School gives the student permission to withdraw from the course, when the withdrawal is within the ninth week of the semester.

2) The student receives permission to withdraw from the University for logical specified reasons.

3) As a punishment, the student is ordered to withdraw temporarity from the University.

4) The student who received an "I" grade because of sickness and who, at the end of the "I" grade time limit, has still not recovered, may receive permission to obtain a "W" grade from the Dean of Graduate School.

A "P" grade or an "F" grade is given for the following examinations : preliminary examination, foreign language examination, comprehensive examinations, and oral examination on doctoral

dissertation. P means pass. F means fail. A "P.D." grade may be given for dissertation meaning pass with distinction.

Credit Count

Only credit courses are used in computing grade point average. If the student repeats a course or has a substitute, the grade and point of that course must be used in computing the grade point average.

In computing the grade point average to meet the requirements of the program, only the credits of the pass courses are used.

The grade point everage for each semester is the result of adding the multiples of the number of credit hours and the grade points divided by the sum of credits taken in that semester.

The cumulative grade point average is the result of adding the multiples of the number of credit hours and the grade points of all the courses the student has taken from the first to the last semester divided by the sum of all the credits earned.

Only courses with grades other than "I" are used in computing the grade point average for each semester.

Repeating Courses

With the approval of the Dean of Graduate School, students may, if they wish, repeat a course in which they received "C" grade.

Students who received "D" or "E" grade are required either to repeat the course with the permission of the Dean of Graduate School, or take a similar course in the same subject area.

A doctoral candidate who receives a "C" grade or lower in required courses must repeat the course or take a similar course in the same subject area with the permission of the Dean of Graduate School.

Classification of Student Academic Status

Classification of student academic status is to consider whether a student it is "in good standing" or "probationary" status.

Classification of student academic status will be done at the end of each semester except for first year students whose academic

status will be classified at the end of their second semester. The Registrar will inform the probationary students and their academic advisers as early as possible.

Failure to Observe the Examination Regulation

Failure to observe the examination regulations might result in the following :

1) Failing that course.
2) Failing that course and withdrawal from courses next semester.
3) Dismissal from the University.

Withdrawal from the University

A student may ask the Dean of Graduate School for permission to withdraw from the University in the following circumstances;

1) Receiving an international exchange, or other scholarship approved by the University.

2) Having a severe illness that prevents attendance at classes for a period which will total at least 20% of the semester hours. An official letter of a doctor, who is employed either in a government hospital or a clinic approved by the Ministry of Health, is required.

3) Having personal reasons, and has studied at the University for at least one semester.

Request to the Dean of Graduate School for withdrawal from the University must be made at the earliest possible opportunity. Confirmation of the Dean's decision is given to the registrar.

Withdrawal is granted for a period of one semester only at a time. A new application must be made for any further period of withdrawal.

For the regular student all periods of withdrawal will count as part of the time allowed for completion of the course of studies.

The educational fee must be paid for the semester during which withdrawal is granted. Otherwise the student will be dismissed from the University.

At the end of the period of withdrawal the student wishing to continue his studies must apply to the Dean of Graduate School for re-admission. The Dean's decission is given to the registrar.

Transfer of Campuses

Students passing the entrance examination or having been selected to study at any campus must study at that compus. The University will not allow students to transfer to other campuses except in a very necessary case.

The time allowed for completion of the course of studies for transferred students is counted from the time they first began their course work at their former compuses.

Changing of Major

Students passing the entrance examination to study in any major must study that major. If changing of major is desired, students must sit for a new entrance examination and the earned credits are null.

Students who have studies in any major for four years and have not completed the course of studies cannot sit for the new entrance examination of the same major.

Srinakharinwirot University may accept the transfer of students from other institutions of higher learning which have the equivalent status.

Dismissal

A student is dismissed in the following circumstances.

1) Does not register in the first semester to be a regular student.

2) After the first semester, fails to pay the educational fee to keep the student status.

3) Is found to lack the appropriate admission qualifications.

4) Has a cumulative grade point average of less than 2.75 or has "C" grade or lower more than 8 credit hours.

5) Has probationary status and holds the cumulative grade point average less than 2.80 for two consecutive semesters.

6) Is given probationary status for a fourth consecutive semester and not able to diminish the probation.

7) Is unable to complete the program within four years or has

the cumulative grade point average less than 3.00.

8) Is guilty of a serious violation of the examination regulations.

9) Has a very bad conduct while being a regular student.

10) Is guilty of a serious offence against the University regulation.

Preliminary Examination

The University will appoint a committee consisting of appropriate individuals to execute the preparing and grading of the preliminary examination for doctoral students.

Students who have completed the course work requirements and have been in residence for no less than one semester are eligible to take preliminary examination.

Students wishing to take the preliminary examination must infrom the Graduate School, through their advisors, in writing within the fourth week of the semester in which they want to take the examination.

The University will organize the preliminary examination within the fifteenth week of each semester when there is a request by eligible students.

Foreign Language Examination

Every doctoral candidate is required to sit for and pass a foreign language test usually an English test. The University will appoint a committee comprising appropriate individuals for this purpose. A student who wishes to take the test may inform the Graduate School in writing through his advisor within the fourth week of the semester in which he wants to take the test. The test will be held in the eighth week of that semester. A foreign student is required to take a test of a language which is not his mother tongue.

Comprehensive Examination

The University will appoint a committee consisting of appropriate individuals to execute the preparing and grading of the comprehensive examinations both at the master and doctoral levels.

The University will arrange a comprehensive examination every

semester when there is a request by eligible students.

Students who have completed the course work requirements and have sufficient credit hours are eligible to take the comprehensive examination in that semester.

Students wishing to take the comprehensive examination in any semester must apply through their advisors to the Graduate School within the fourth week of that semester.

Master degree students who fail in some areas of the comprehensive examination will retake the examination in those areas only, whereas the doctoral candidates will retake the whole examination.

Students can take the comprehensive examination three times. For doctoral students, apart from the above regulations, they must have two semesters in residence before they are eligible for comprehensive examination which will be held in the fifteenth week of each semester when there is a request by eligible students. Those who have already passed the comprehensive examination will fully become doctoral candidates.

Thesis

After completing not less than 20 credits of course work a master's degree student can submit the thesis title, names of advisory committee, and detailed outline to the Graduate School for approval through the Faculty Committee.

In submitting the thesis title, committee, and detailed outline the student has to do the following :

Complete the Application for Approval of Thesis Title, Committee, and Detailed Outline Form and submit it to the Faculty Committee on Thesis Proposal for consideration to get the Graduate School approval.

The thesis advisory committee consists of a chairman and a member. In a special case one more member may be appointed. This committee must receive the approval from the Graduate School.

When a change in the thesis title or committee is desired, the student must submit a request to the Graduate School.

In order to complete the course of studies the student has to

submit the detailed outline of his thesis at least three full months prior to sitting for a thesis oral examination.

Dissertation

After completing not less than 25 credits of course work, a doctoral student may submit the dissertation title, names of advisory committee and detailed outlines to the Graduate School for approval.

The dissertation committee must consist of three person : the chairman and 2 members.

The detailed outline of the dissertation must be presented for discussion and approval by the Committee on Dissertation Proposal.

When the proposal has been discussed and improvements have been made as suggested, the proposal should be submitted to the Graduate School for formal approval.

When a change in the dissertation title or committee is desired, the student must submit a request to the Graduate School for approval.

In order to complete the course of studies, the student has to submit the detailed outlines of the dissertation at least three full months prior to sitting for an oral examination.

Thesis Oral Examination

After a student has completed the thesis and the committee has corrected it, the committee chairman makes an appointment with the student to have the thesis oral examination.

The Graduate School will appoint a committee for thesis oral examination consisting of the thesis committee and one more member from the student's major or related department.

For dissertation oral examination, a committee must consist of the dissertation committee and one more expert in that field or related area from other institution as an external examiner.

The student must receive special approval if he wants to sit for the thesis oral examination when the committee members cannot all be present.

The chairman of the thesis or dissertation oral examination

committee reports the thesis grade directly to the Dean of Graduate School.

Application for Graduation

Students must apply for graduation in the semester in which they expect to complete the requirements for their degrees. Application should be sent to the registrar within one month starting from the first day of the semester.

Students must meet all graduation requirements as follows :

1) Have not less than two semesters of residence at this university.
2) Have sufficient credit hours required for the course of studies.
3) Have the cumulative grade point average of not less than 3.00.
4) Have passed the comprehensive examination.
5) Have passed the preliminary examination in the case of being a doctoral student.
6) Have passed a foreign language examinaion in the case of being a doctoral student.

Degree Conferment

The University will consider students who have applied for graduation and have good conduct for University Council approval to confer the Master of Education Degree by using the following criteria :

1) Have fulfilled course work requirement with grade point average of not less than 3.00 and passed comprehensive examination.
2) Have completed the thesis with not less than grade 'B'' and passed the thesis oral examination.
3) Have submitted the complete copies of thesis as required by the University.

For the conferment of Doctor of Education degree, the University will consider the candidate who has successfully completed the dissertation, passed the oral examination and passed both comprehensive and foreign language examinations.

PART II

PROGRAMS OF STUDY

Programs of Study

Structure of Master of Education Programs

The structure of Master of Education curriculum consists of at least 48 semester credit hours of various courses and it must be completed within 4 years.

Course requirements consist of the following areas :

Hours Credit

1. Foundations of Education Courses 12

1.1 Required Courses 9

At least 6 credit hours are to be selected from these courses :

Ed 501	Philosophical Foundations of Education	2
Ed 502	Socio-Economic Foundations of Education	2
Ed 503	Psychological Foundations of Education	2
Ed 504	Historical Foundations of Education	2
Ed 505	Comparative Education	2
Ed 506	Technological Foundations in Education	2
Ed 507	Professional Ethics	2

Students must fulfill a research course :

Res 521	Research Methods in Behavioral and Social Sciences	3

1.2 Related Elective Courses 3

3 credit hours are to be selected from these courses :

Stat 511	Statistical Methods for Research	3
Stat 513	Inferential Statistics	3

2. Majors : At least 27 credit hours according to the requirements of each major must be fulfilled. There are 22 majors as follows :

2.1 Elemen tary Education.
2.2 Secondary Education
2.3 Higher Education
2.4 Educational Administration
2.5 Guidance
2.6 Educational Measurement
2.7 Educational Technology
2.8 Library Science

2.9 Developmental Psychology
2.10 Social Psychology
2.11 Educational Psychology
2.12 Experimental Psychology
2.13 Thai
2.14 English
2.15 Geography
2.16 History
2.17 Chemistry
2.18 Biology
2.19 Physics
2.20 Mathematics
2.21 Physical Education
2.22 Special Education : Education for the hearing Impaired

3. Free Elective Courses : At least 3 credit hours of free dective is required. The student may take any appropriate courses according to his personal preference with the guidance and approval of his academic advisor.

4. Thesis 6 hours credit

The student is required to write a thesis relating to education or the academic field or both

If the student who takes 27 credit hours or more in each major numbered 2.13 to 2.22 wants to write a thesis on education the thesis must be related to his major field.

Elementary Education

Objective

To provide professional preparation that will enable the student to be knowledgeable and capable of developing teaching and a research work relating to elementary education.

Structure of the Program

Requirements

1.	Foundations of Education Area	12 credit hours
2.	Major Area not less than	27 credit hours
	2.1 Required Courses	17 credit hours
	2.2 Elective Courses not less than	3 credit hours
	2.3 Supplementary Courses not less than	3 credit hours
3.	Free Elective Area not less than	3 credit hours
4.	Thesis	6 credit hours

Meaning of the Middle Digits of the Code Numbers

0 refers to general foundations
1 refers to theories and principles
2 refers to teaching
3 refers to teaching
4 refers to administration
5 refers to problems
6 refers to student activities
7 refers to practicum
8 refers to seminar
9 refers to independent study or research

Course Requirements (17 credits)

El Ed 511	Curriculum and Instruction Development in Elementary Education	3 credits
El Ed 521	Problems and Techniques in Teaching Thai Language Arts in the Elementary School	2 credits
El Ed 522	Problems and Techniques in Elementary Mathematics Instruction	2 credits
El Ed 523	Problems and Techniques in Teaching Life Education	2 credits
El Ed 524	Problems and Techniques in Teaching	

	Character Education	2 credits
El Ed 525	Problems and Techniques in Teaching Work Education	2 credits
El Ed 641	Elementary School Administration and Supervision	2 credits
El Ed 681	Seminar on Problems and Research in Elementary Education	2 credits

Elective (6 credits at least)

El Ed 531	Measurement and Evaluation in the Elementary School	2 credits
El Ed 561	Behaviour and Development of the Elementary School Child	2 credits
El Ed 541	Roles of Elementary Schools in the Community	2 credits
El Ed 601	Development of Teaching Competencies in Elementary School Teachers	2 credits
El Ed 625	Critique of Children Literature	2 credits
El Ed 741	Elementary Education in Southeast Asian Countries	2 credits

Related Elective (4 credits at least)

Guid 532	Guidance in Elementary School	3 credits
Th Ed 521	Thai Language Arts in Elementary School	3 credits
Math Ed 521	Methematics in Elementary Schools	3 credits
Sc Ed 521	Science in Elementary Schools	3 credits
Soc Ed 523	Innovation, Technology and Change in Social Studies Instruction	3 credits
E C Ed 511	Curriculum and Teaching in Early Childhood Education	3 credits
E C Ed 531	Creative Activities for Pre - School Children	2 credits
E C Ed 532	Children and Dramatic Arts	2 credits
E C Ed 541	Parent Education	2 credits
Con Ed 501	Adult Education and Problems of Thai Society	3 credits

Con Ed 521 Techniques, Resources and Mass Media in Adult Education 3 credits

Course Description

El Ed 511 Curriculum and Instructional Development in Elementary Education 3 credits

Studies of philosophical, psychological, and social bases for curriculum development ; current practice in elementary education curriculum development and evaluation ; processes of change in elementary school curriculum and instruction.

El Ed 521 Problems and Techniques in Teaching Thai Language Arts in the Elementary School. 2 credits

Review of principles of teaching language arts at the elementary level ; study the curriculum and problems in teaching language arts ; principles in the elementary language text selection, recent researches and techniques contribute to the four areas of teaching language arts ; application of the language arts instruction to the development of the learners.

El Ed 522 Problems and Techniques in Elementary Mathematics Instruction 2 credits

Review of principles of mathematics instruction at the elementary level, study of problems in teaching modern mathematics with application to the local areas ; recent researohes and techniques contribute to teaching efficiency ; study of elementary school mathematics and the improvement of the curriculum.

El Ed 523 Problems and Techniques in Teaching Life Education 2 credits

Study of the curriculum and the curriculm components in life education ; problems and needs of mankind in general and local Thai

in particular ; emphasis on the education for the quality of life, including methods and techniques in achieving the educational objectives.

El Ed 524 Problems and Techniques in Teaching Character Education 2 credits

Study of the curriculum and the curriculum components in character education ; principles and sequences in character formation ; integration of art music and physical education as a means to develop character and aesthetics.

El Ed 525 Problems and Techniques in Teaching Work Education 2 credits

Study of the curriculum and the curriculum components in work and vocational basis of education ; principles and theories in the development of work habits, attitudes, thinking process ; recent researches in work education ; methods and techniques for achieving the educational objectives.

El Ed 641 Elementary School Administration and Supervision 2 credits

Review principles of elementary education , administrative responsibilities and leadership qualities ; principles of elementary school organization and administration ; the national administrative policies : review of supervision principles study of situations and problems to improve the educational supervision in various areas of responsibilities.

El Ed 681 Seminar on Problems and Research in Elementary Education 2 credits

Review of existing situations in the elementary education ; study of problems related to the organization ; situations in Asia and the Asian elementary school;studies of current researches and the application of research project outline

in the field of elementary education for criticism in the seminar.

El Ed 601 Development of Teaching Competencies in Elementary School Teachers. 3 credits
A study of teaching behavior in the elementary school ; an analysis of curriculum and instruction ; application of research finding to competencies in elementary schoolteacher instruction, develop instruction and techniques in achieving the educational objectives.

El Ed 531 Measurement and Evaluation in the Elementary school 2 credits
Roles of evaluation in the elementary school, measurement as past of the evaluation, characteristic need to measure ; instruments, quality and construction of instruments, score and transformation of scores for use, objectives and philosophy of evaluation for elementary schools teach.

El Ed 541 Roles of School in the Community 2 credits
Study of duty and responsibilities of elementary schools to the community in the areas of education, community resources, tradition and cultures, study of administrative and social agencies in the community ; relationship problems and obstacles in building relationship, proposal of problem solving, case studies.

El Ed 625 Critique of Children's Literature 2 credits
Study of children's literature in its worth, types and forms, and criteria : literature translated and adapted from foreign lands ; desired vs market literature ; society's responsibilities ; promotion of quality literature ; reaching out to the children

El Ed 741 Elementary Education in Southeast Asian Countries 2 credits

Historical and geographical, ethnic, cultural heritage and socio - economic background as basis for elementary education in Southeast Asian countries; movement; research and advance ideas in elementary education among SEA countries.

El Ed 561 Behaviour and Development of the Elementary School Child 2 credits

An analysis of selected sources of information about the behaviour and development of the elementary school child and the implication this information has for teaching the elementary school child.

Guid 532 Guidance in Elementary School. 3 credits

The functions of guidance in elementary school, organization and administration of the guidance program at this level emphasising on student's social and emotional adjustment, introduction to the use of techniques for understanding the individual and working with group. Practical guidance problems in elementary schools are discussed.

Th Ed 521 Thai Language Arts in Elementary Schools 3 credits

Analysis of curriculum and teaching Thai language arts in elementary schools ; practice in the development of curriculum instructional materials.

Math Ed 521 Mathematics in Elementary Schools 3 credits

Analysis of curriculum and instruction of mathematics of elementary schools ; practice in the development of curriculum instructional materials.

Sc Ed 521 Science in Elementary Schools 3 credits

Analysis of curriculum and teaching in elementary school science ; practice in the development

of curriculum instructional materials.

Soc Ed 523 Innovation, Technology and Change in Social Studies Instruction 3 credits
An analytical study of trends in social studies instruction based on economic, social, political, psychological, cultural data or research findings, and national security policies ; an innovative and applicable proposal with technology for changes in social studies instructional development.

E C Ed 511 Curriculum and Teaching in Early Childhood Education 3 credits
A critical study of major theories relevant to contemporary thought and research in early childhood education and their implications in the development of curriculum and teaching the pre - school children.

E C Ed 531 Creative Activeities for Pre-School Children 2 credits
Principles and practices in selecting and organizing activities for the development of creativity in language, music, arts and nature study of pre - school children ; utilization of local materials for the learning activities.

E C Ed 532 Children and Dramatic Arts 2 credits
Theories and techniques of acting as methods of personal development in pre - school children ; practice in organizing dramatic plays for children.

E C Ed 541 Parent Education 2 credits
Observation and analysis of children's problems in day care centers as a result of home training ; proposal of parent education project to bridge the gap between home and day care centres ; roles of teacher in educating parents of pre - school children.

Con Ed 501 Adult Education and Problems of Thai society 3 credits

Identifying existing socio-cultural problems of the Thai society in both urban and rural areas ; developing and evaluating programs or models designed to solve the problems.

Con Ed 521 Techniques, Resources, and Mass Media in Adult Education 3 credits

Philosophy of adult education, adult and adult psychology ; social change and change process, teaching techniques ; uses of community resources and mass media.

Secondary Education

Objective

To provide professional preparation that will enable the student to be knowledgeable and capable teaching and becoming a leader in improving secondary education learning and teaching.

Structure of the Program

Requirements

1. Foundation of Education Area	12 credit hours
1. Foundations of Education Area	12 credit hours
2. Major Area not less than	27 credit hours
2.1 Required Courses	10 credit hours
2.2 Electives Courses	
2.2.1 Instruction Group not less than	12 credit hours
2.2.2 General Group not less than	5 credit hours
3. Free Elective Area not les than	3 credit hours
4. Thesis	6 credit hours

Meanings of the Middle Digets of the Code Numbers

0 refers to general foundations
1 refers to theories and principles
2 refers to teaching
3 refers to teaching
4refers to administration
5 refers to problems
6 refers to student activities
7 refers to practicum
8 refers to seminar
9 refers to independent study or research

Compulsory (10 credits)

Sec Ed 511	Curriculum and Instruction Development in Secondary Education	3 credits
Sec Ed 541	Advanced Studies in Secondary School Organization and Supervision	3 credits
Sec Ed 561	Adolescent Behaviour and Development	2 credits
Sec Ed 581	Seminar on Problems and Research	

in Secondary Education 2 credits

Elective (17 credits)

Select from :

Teaching group 12 credits at least

General group 5 credits at least

Teaching group (12 credits)

Select from the following courses :

Group 1 Teaching Thai

Th Ed 511 Theory and Practice in Thai Language Arts 3 credits

Th Ed 531 Thai Language Arts in Secondary Schools 3 credits

Th Ed 571 Workshop for Teachers of Thai Language Arts 3 credits

Th ED 581 Seminar on Problems and Research in Teaching Thai 3 credits

Group 2 Teaching Mathematics

Math Ed 511 Theory and Practice in Mathematic Curriculum Developmtnt 3 credits

Math Ed 531 Mathematics in Secondary Schools 3 credits

Math Ed 571 Workshop for Mathematic Teachers 3 credits

Math Ed 581 Seminar on Problems and Research in Teaching Mathematics 3 credits

Group 3 Teaching Science

Sc Ed 511 Theory and Practice in Science Curriculum Development 3 credits

Sc Ed 531 Science in Secondary Schools 3 credits

Sc Ed 571 Workshop for Science Teachers 3 credits

Sc Ed 581 Seminar on Problems and Research in Teaching Science 3 credits

Group 4 Teaching Social Studies

Soc Ed 511 Theory and Practice in Social Studies Curriculum Development 3 credits

Soc Ed 521 Theory and Behaviour of Social Studies Instruction 3 credits

Soc Ed 522 Techniques of Social Studies Instruction

	Evaluation	3 credits
Soc Ed 523	Innovation, Technology and Change in Social Studies Instruction	3 credits

Group 5 Teaching English

Eng Ed 511	Curriculum and Teaching of English in Secondary Schools	3 credits
Eng Ed 531	Problems and Techniques in Teaching English	3 credits
Eng Ed 571	Workshop for English Teachers	3 credits
Eng Ed. 581	Seminar on Research in Teaching English	3 credits

General group 5 credits at least

Sec Ed 551	Principles and Problems in Vocational Education	2 credits
Sec Ed 522	Education and Self-Employment	2 credits
Ed Adm 603	Secondary School Administration	2 credits
Guid 533	Guidance in Secondary School	3 credits
Con Ed 501	Adult Education and Problems of Thai Society	3 credits
Con Ed 521	Techniques, Resources, and Mass Media in Adult Education	3 credits
Con Ed 571	Practicum in Adult Education	3 credits
E C Ed 511	Curriculum and Teaching in Early Childhood Education	3 credits

Course Description

Sec Ed 511 Curriculum and Instructional Development in Secondary Education 3 credits

Studies of philosophical, psychological, and social bases for curriculum development ; current practice in secondary education; curriculum development and evaluation ; processes of change in secondary school curriculum and instruction.

Sec Ed 541 Advanced Studies in Secondary Organization and Supervision 3 credits

Organization, administration, and supervision in the secondary school ; characteristics and

competencies for administrators, and supervisers ; personnel management ; teaching and learning activities ; school business affairs ; building and ground ; and public relations.

Sec Ed 561 Adolescent Behaviour and Development 2 credits
Research and theory related to adolescents in the intellectual, physical, social-personal, and emotional areas of development

Sec Ed 551 Principles and Problems in Vocational Education 2 credits
Vocational education in Thailand and in some developed and developing countries ; vocational interest of nowadays youth ; economic and social problems as factors influencing vocational choice ; theories of vocational education ; vocational guidance.

Sec Ed 552 Education and self Employment 2 credits
A study of employment in thai society ; trend in future employment ; attitude conducive to self - employment ; reading of research on promoting thai youth's interest in self - employment.

Sec Ed 581 Seminar on Problems and Research in Secondary Education 2 credits
Studies of problems in secondary education and application of research in secondary education.

Ed Adm 603 Secondary School Administration 2 credits
An overview of basic principles in secondary school administration ; roles of secondary school administrators ; trends in the administration of the changing secondary schools including standard criteria for effective secondary schools in Thailand.

Guid 533 Guidance in Secondary School 3 credits
The functions of guidance in secondary

school ; organization and administration of the pupil personnel services emphasising on student's life adjustment and career development, methods of identifying quidance needs of secondary school students ; an examination of current guidance programs and problems in schools.

Con Ed 501 Adult Education and Problems of Thai society 3 credits
Identifying existing socio-cultural problems of the Thai society in both urban and rural areas ; developing and evaluating programs or models designed to solve the problems.

Con Ed 521 Techniques, Resources, and Mass Media in Adult Education 3 credits
Philosophy of adult education, adult and adult psychology ; social change and change process, teaching techniques ; uses of community resources and mass media.

Con Ed 571 Practicum in Adult Education 3 credits
Supervised field work in community programs for out-of-school youths and adults.

E C Ed 511 Curriculum and Teaching in Early Childhood Education 3 credits
A critical study of major theories relevant to contemporary thought and research in early childhood education and their implications in the development of curriculum and teaching the pre - school children.

Th Ed 511 Theory and Practice in Thai Language Arts Curriculum Development 3 credits
An analytical study of structures of Thai language arts and curriculum development ; practice in Thai language arts curriculum evaluation.

Th Ed 531 Thai Language Arts in Secondary Schools 3 credits

A study of Thai language arts in secondary schools ; problems in teaching and trends in language arts teaching.

Th Ed 571 Wrokshop for Teachers of Thai Language Arts 3 credits

Practice in the development of competencies in teaching and supervision of Thai language arts ; a critical study of instructional materials ; preparation of instructional materials.

Th Ed 581 Seminar on Problems and Research in Teaching Thai 3 credits

An analytical study of problems and research in teaching Thai language arts ; proposal of projects to solve problems based on research findings and learning theories.

Math Ed 511 Theory and Practice in Mathematic Curriculum Development 3 credits

An analytical study of structure and concepts in mathematics, development of mathematic curriculum ; practice in mathematic curriculum evaluation

Math Ed 531 Mathematics in secondary shcools 3 credits

A study of secondary school mathematics ; problems in teaching ; and trends in mathematic teaching.

Math Ed 571 Workshop for Mathematic Teachers 3 credits

Practice in the development of competencies in teaching and supervesion of mathematics ; a critical study of mathematics instructional materials; preparation of instructional materials.

Math Ed 581 Seminar on Problems and Research in Teaching Mathematics. 3 credits

An analytical study of problems and research in teaching mathematics in schools ; proposal of projects to solve problems based on research findings and learning theories.

Sc Ed 511 Theory and Practice in Science Curriculum Development 3 credits
An analytical study of structure and concepts in science ; current practices in science curriculum development ; practice in science curriculum development and evaluation.

S Ed 531 Science in Secondary Schools 3 credits
A study of secondary school science ; problems in teaching ; and trends in teaching science

Se Ed 571 Workshop for science Teachers 3 credits
Practice in the development of competencies in teaching and supervision of school science ; a critical study of instructional materials ; preparation of instructional materials.

Sc Ed 581 Seminar on Problems and Research in Teaching Science 3 credits
An analytical study of problems and research in teaching science in schools ; proposal of projects to solve problems based on research finding and learning theories.

Soc Ed 511 Theory and Practice in Social Studies Curriculum Development 3 credits
An analytical study of structure, concepts, principles, theories, and development of social studies curriculum in general and in Thai schools ; practice in social studies curriculum development, and instructional material design.

Soc Ed 521 Theory and Behavior of Social Studies Instruction 3 credits
An analytical study of trends in teaching social studies, learning behavior, methods of teaching social studies ; practice teaching and evaluation evaluating social studies in schools.

Soc Ed 522 Techniques of Social Studies Instruction Evaluation 3 credits
An analytical study of concepts and principles of social studies instruction evaluation, instru-

ments, and test designs, their reliability and validity.

Soc Ed 523 Innovation, Technology, and Change in Social Studies Instruction 3 credits

(See page 33)

Eng Ed 511 Curriculum and Teaching of English in Secondary Schools 3 credits

Studies of curriculum, textbooks, supplementary books and method of teaching English in secondary schools ; trends in teaching English as a foreign LANGUAGE

Eng Ed 531 Problems and Techniques in Teaching English 3 credits

Studies of problems of teaching English in schools ; techniques in solving problems and improving English teaching PTD

Eng Ed 571 Workshop for English teachers 3 credits

Practice in the development of competencies in teaching and supervising English teaching

Eng Ed 581 Seminar on Research in Teaching English. 3 credits

Studies of research findings on teaching English as a foreign language with a view to apply in the improvement of teaching English in schools.

Higher Education

Objectives

1. To provide professional preparation that will enable the student to teach and supervise higher education student teaching and practicum with sufficient knowledge, insight, and moral standards.
2. To provide professional preparation for higher education curriculum and instruction developers.
3. To provide professional preparation that will enable the student to do research on problems relating to the operation or administration development of institutions of higher learning.

Structure of the Program

Requirements

1.	Foundations of Education Area		12 credit hours
2.	Major Area	not less than	27 credit hours
	2.1 Required Courses		14 credit hours
	2.2 Electives Courses 13 credits from the following :		
	a. Major Related Courses		
	b. Supplementary Major Courses		
3.	Free Elective Area	not less than	3 credit hours
4.	Thesis		6 credit hours

Meanings of the Middle Digits of Code Numbers

0 refers to general foundations
1 refers to theories and principles
2 refers to teaching
3 refers to teaching
4 refers to administration
5 refers to problems
6 refers to student activities
7 refers to practicum
8 refers to seminar
9 refers to independent study or research

Compulsory (14 credits at least)

Hi Ed 511	Curriculum and Instructional Development in Higher Education	3 credits

Hi Ed 540	Management and Organization of Higher Education	3 credits
Hi Ed 560	The College Student and Environment	3 credits
Hi Ed 620	College Teaching	3 credits
Hi Ed 680	Seminar on Problems and Research in Higher Education	2 credits

Elective (13 credits at least)

Select one group from either Related Major or Related Elective

A. Retated Major

Group 1	Curriculum and Instruction	9 credits
Hi Ed 541	Academic Problems in Higher Education	3 credits
Hi Ed 600	Practicum in Higher Education Curriculum Development	3 credits
Hi Ed 601	Innovation and Curriculum Change in Higher Education	3 credits

And select from the following courses to complete the requirements.

Hi Ed 561	College Student Personnel Administration	3 credits
Hi Ed 531	Teacher Education in Thailand	3 credits
Hi Ed 532	Practicum in Teacher Education	3 credits
Hi Ed 533	Research in Instructional Behavior	3 credits
Hi Ed 690	Institutional Research	3 credits
Hi Ed 691	Independent Study	3 credits
Hi Ed 621	Supervision of Teaching and Field Work	3 credits
Hi Ed 562	Practicum in College Student Affairs	3 credits
Psy 515	Organizational Behavior	3 credits
Ed Adm 502	Administrative Theory and Organization	3 credits
Ed Adm 667	System Analysis	3 credits
Guid 511	Group Dynamics	2 credits

Group 2	Personnel and College Student Personnel Administration	9 credits
Hi Ed 542	Nonacademic Personnel Management in Higher Education	3 credits
Hi Ed 543	Business and Financial Management in Higer Education	3 credits
Hi Ed 561	College Student Personnel Administration	3 credits

And select from the following courses to complete the requirements.

Hi Ed 541	Academic Problems in Higher Education	3 credits
Hi Ed 531	Teacher Education in Thailand	3 credits
Hi Ed 532	Practicum in Teacher Education	3 credits
Hi Ed 533	Research in Instructional Behavior	3 credits
Hi Ed 690	Institutional Research	3 credits
Hi Ed 691	Independent Study	3 credits
Hi Ed 621	Supervision of Teaching and Field Work	3 credits
Hi Ed 562	Practicum in College Student Affairs	3 credits
Hi Ed 600	Praticum in Higher Education Curriculum Development	3 credits
Hi Ed 640	Practicum in Nonacademic Personnel Administration Affairs	3 credits
Psy 515	Organization Behavior	3 credits
Ed Adm 502	Administrative Theory and Organization	3 credits
Ed Adm 667	System Analysis	3 credits
Guid 511	Group Dynamics	2 credits
Group 3	**Teacher Education**	9 credits
Hi Ed 531	Teacher Education in Thailand	3 credits
Hi Ed 532	Practicum in Teacher Education	3 credits
Hi Ed 533	Research in Instructional Behavior	3 credits

And select from the following courses to complete the requirements.

Hi Ed 690	Institutional Research	3 credits
Hi Ed 541	Academic Problems in Higher Education	3 credits

Hi Ed 600	Practicum in Higher Education	3 credits
Hi Ed 601	Innovation and Curriculum Change in Higher Education	3 credits
Hi Ed 542	Nonacademic Personnel Management in Higher Education	3 credits
Hi Ed 543	Business and Financial Management in Higher Education	3 credits
Hi Ed 561	College Student Personnel Administration	3 credits
Hi Ed 691	Independent Study	3 credits
Hi Ed 621	Supervision of Teaching and Field Work	3 credits
Hi Ed 562	Practicum in College Student Affairs	3 credits
Hi Ed 640	Practicum in Nonacademic Personnel Administration Affairs	3 credits
Psy 515	Organizational Behavior	3 credits
Ed Adm 502	Administrative Theory and Organization	3 credits
Ed Adm 667	System Analysis	3 credits
Guide 511	Group Dynamics	2 credits

B. Related Elective

Select one group of not less than 13 credits from the following :

1. Teaching of Thai

Th Ed 511	Theory and Practice in Thai Language Arts Curriculum Development	3 credits
Th Ed 521	Thai Language Arts in Elementary Schools	3 credits
Th Ed 531	Thai Language Arts in Secondary Schools	3 credits
Th Ed 571	Workshop for Teachers of Thai Language Arts	3 credits
Th Ed 581	Seminar on Problems and Research in Teaching Thai	3 credits

2. Teaching of Science

Sc Ed 511	Theory and Practice in Science Curriculum Development	3 credits
Sc Ed 521	Science in Elementary Schools	3 credits
Sc Ed 531	Science in Secondary Schools	3 credits
Sc Ed 571	Workshop for Science Teachers	3 credits
Sc Ed 581	Seminar on Problems and Research in Teaching Science	3 credits

3. Teaching of Mathematics

Math Ed 511	Theory and Practice in Mathematic Curriculum Development	3 credits
Math Ed 521	Mathematics in Elementary Schools	3 credits
Math Ed 531	Mathematics in Secondary Schools	3 credits
Math Ed 571	Workshop for Mathematic Teachers	3 credits
Math Ed 581	Seminar on Problems and Research in Teaching Mathematics	3 credits

4. Teaching of Social Science

Soc Ed 511	Theory and Practice in Social Studies Curriculum Development	3 credits
Soc Ed 521	Theory and Behavior of Social Studies Instruction	3 credits
Soc Ed 522	Techniques of Social Studies Instruction evaluation	3 credis
Soc Ed 523	Innovation, Technology and Change in Social Studies	3 credits
Soc Ed 571	Workshop for Social Studies Teachers	3 credits
Soc Ed 581	Seminar on Problems and Research in Social Studies Instruction	3 credits

5. Early Childhood Education

E C Ed 511	Curriculum and Teaching in Early Childhood Education	3 credits
E C Ed 531	Creative Activities for Pre - School Children	2 credits

E C Ed 532	Children and Dramatic Arts	2 credits
E C Ed 541	Parent Education	2 credits
E C Ed 551	Administration and Supervision in Early Childhood Education	2 credits
E C Ed 581	Seminar on Problems and Research in Early Childhood Education	2 credits

6. Adult and Continuing Education

With the approval of Advisor and Head of Department of Curriculum and Instruction

Con Ed 501	Adult Education and Problems of Thai Society	3 credits
Con Ed 521	Techniques, Resources, and Mass in Adult Education	3 credits
Con Ed 571	Practicum in Adult Education	3 credits
Con Ed 581	Seminar in Adult and Continuing Education	3 credits
Con Ed 522	Preparation of Materials in Adult Education	3 credits

7. English

With the approval of Advisor and Head of Department of English.

Eng 511	Reading I	2 credits
Eng 611	Reading II	2 credits
Eng 521	Writing I	2 credits
Eng 522	Writing II	2 credits
Eng 531	Oral Comprehension and Expression I	2 credits
Eng 532	Oral Comprehension and Expression II	2 credits
Eng 551	Translation I	2 credits
Ling 501	General Linguistics	2 credits

8. Geography

With the approval of Advisor and Head of Department of Geography.

Compulsory

Geog 511	Advanced Map and Cartography	3 credits
Geog 535	Seminar in Economic Geography	3 credits

Geog 523	Seminar in Physical Geography.	3 credits

Elective

Geog 521	Advanced Meteorology and Climatology	3 credits
Geog 514	Quantitative Method in Economic Geography	3 credits
Geog 622	Geomorphology	3 credits

9. History

With the approval of Advisor and Head of Department of History.

Pattern 1

Thai History and Related Courses

Hist 511	Analytical Study in Early Thai History	4 credits
Hist 512	Seminar in Dhonburi and Early Ratanakosin Periods	2 credits
Hist 611	Seminar in Modern Thai History	3 credits
Hist 533	Modern China	3 credits
Hist 622	Seminar in Modern Southeast Asia	3 credits

Pattern 2

Asian History

Hist 533	Modern China	3 credits
Hist 534	Modern Japan	3 credits
Hist 622	Seminar in Modern Southeast Asia	3 credits
Hist 541	Indian Civilization	3 credits
Hist 542	History of the Middle East	3 credits
Hist 543	Modern Australasia	3 credits
Hist 611	Seminar in Modern Thai History	3 credits

Pattern 3

European History

Hist 552	Liberalism and Nationalism in the West	3 credits
Hist 651	History of Political Theories	3 credits
Hist 551	Renaissance and Reformation	3 credits

Hist 652	Seminar in Modern European History	3 credits
Hist 554	Western Political Systems	3 credits
Hist 553	Economic History of Europe	3 credits
Hist 562	American Social and Cultural History	3 credits

10. Speech Therapy

Speech 511	Bases of Oral Communication and Communication Disorders	3 credits
Speech 512	Articulation Disorders	2 credits
Speech 513	Voice and Rhythm Disorders	3 credits
Speech 611	Language Disorders	2 credits
Speech 621	Speech Therapy in School	3 credits

11. Mathematics

With the approval of Advisor and Head of Department of Mathematics.

Math 581	Concepts in Algebra for Teachers	3 credits
Math 582	Concepts in Analysis for Teachers	3 credits
Math 583	Concepts in Geometry for Teachers	3 credits
Math 584	Selected Topics in Mathematics	3 credits

12. Thai

With the approval of Advisor and Head of Department of Thai

Thai 511	Thai Structure	2 credits
Thai 612	Seminar in Thai Usage	3 credits
Ed 531	Advanced Studies in Teaching Thai	3 credits

Elective

Select courses offered in Department of Thai to complete the requirements.

Course Description

Group 1 Curriculum and Instruction

Hi Ed 511 Curriculum and Instructional Development in Higher Education 3 credits

Studies of philosophical, psychological, and social bases for curriculum development ; processes in curriculum development and

evaluation in higher education

Hi Ed 531 Teacher Education in Thailand 3 credits
Current theories and practices related to the pre-service and in-service education of teachers organization and problem of teacher education institution ; types of students, and curriculum patterns ; roles and functions of college, staff in the community and organization ; studies of special topics.

Hi Ed 532 Practicum in Teacher Education 3 credits
Studies of problems of pre-service teacher education ; and participation in the planning and teaching of pre-service courses.

Hi Ed 533 Research in Instructional Behavior 3 credits
A study of research and innovation of teaching behaviors ; development of competencies and skills in instructional experimentation to improve teaching.

Hi Ed 540 Management and Organization of Higher Education 3 credits
A comparative study of philosophies, objectives, roles, functions, types and organization of institutions of higher education in Thailand and in general : their principal administrative functions, including faculty personnel, business management, public relations, and coordinations ; principles of planning, academic accreditation, and innovations of higher education management wiht high lights on problems of Thai higher education management.

Hi Ed 541 Academic Problems in Higher Education 3 credits
An analytical study of academic personnel and faculty development : selection, assignment orientation, guidance, evaluation and promotion policies ; organization of faculty council, development policy for institutions

of higher learning ; development of teaching, research, community services activities, academic administration, curriculum development and instructional resources.

Group 2 Personnel and College Student Personnel Administration

Hi Ed 542 Nonacademic Personnel Management in Higher Education 3 credits

An analytical study of policies, principles and management of nonacademic personnel in higher education institutions ; processes, problems and innovations in personnel administration with the application to higher education institutions in Thailand.

Hi Ed 543 Business and Financial Management in Higher Education 3 credits

An analytical study of policies, principles and management of business and finance in higher education institutions in general and in Thailand ; sources of income, fund raising, expenditure, budgeting, student aids and auxiliary enterprises, financial efficiency in higher education, unit costs of instruction, plant financing, operation and maintenance, and financial problems in higher education.

Hi Ed 560 The College Student and Environment 3 credits

An analytical study of college and university student environment effecting his intellectual, social emotional, character, and competency development ; research findings in behavioral sciences will be used as guidelines for study of college and university student characteristics in the changing Thai society.

Hi Ed 561 College Student Personnel Administration 3 credits

Philosophies, policies, objectives, principles,

processes and problems of college student personnel administration ; organization, patterns, functions, operation, coordination, and evaluation with an emphasis on student personnel work existing in institutions of higher education in Thailand.

Hi Ed 562 Practicum in College Student Affairs 3 credits

Practicum in college student affairs in the areas of student services and activities ; integrating experiences for proposal of student affairs development and planing.

Hi Ed 600 Practicum in curriculum Development in Higher Education 3 credits

Supervised practices in curriculum development in a higher education institution.

Hi Ed 601 Innovation and Curriculum Change in Higher Education 3 credits

Studies of current educational innovation ; change process and change resistance of individuals and organization ; process of curriculum change in higher education and other levels of education ; utilization of educational innovation in the process of change and development.

Hi Ed 620 College Teaching 3 credits

An analytical study of instructional techniques ; an appraisal of instructional materials ; problems and innovations in higher education including students' practicum in curriculum planning, proposal of instructional materials, and proposed projects to be tried out.

Hi Ed 621 Supervision of Teaching and Field Work 3 credits

An analytical study of principles, processes, and problems of supervision of teaching and

fieldwork especially in Thailand with a fieldwork practice try-out.

Hi Ed 640 Practicum in Nonacademic Personnel Administration Affairs 3 credits

An analytical study and practicum in nonacademic personnel administration affairs in the area of students's interest.

Hi Ed 680 Seminar on Problems and Research in Higher Education 2 credits

An analytical study of researches, problems, issues, and trends in higher education in Thailand ; students ' proposal of innovative projects and research design on a topic of special interest.

Hi Ed 690 Institutional Research 3 credits

A course designed to develop competency and skills in the specialized areas of data collection and interpretation of institutional studies and their implication to improve teacher education and higher education of student's special interest.

Hi Ed 691 Independent Study 3 credits

An individual program of study for students interested in investigating positions in higher education on a selected problem or issue ; a student proposes a detail analytical paper.

Psy 515 Organizational Behavior 3 credits

(See page 109)

Guid 511 Group Dynamics 2 credits

Principles of group dynamics, and leadership training ; an opportunity for experiencing, observing, and practicing basic human relations skills necessary in the achievement of a productive group process.

Ed Adm 502 Administrative Theory and Organization 3 credits

The evolution of concepts and theories in both administration and organization concentrating on the nature, components and characteristics of organization as well as several models of decision-making, soci-process and system models of administrative theories.

Ed Adm 667 Systems Analysis 3 credits
A study of the administrative ideas utilized for work effecteveness emphasizing on presenting the systems concept, systems analysis techniques and the systems analysis in government operation including various theories and models ; the relations of systems approach to program budgeting : PERT, CPM, PPBS, quantitative parameters and the cost-benefit analysis.

Th Ed 511 Theory and Practice in Thai Language Arts Curriculum Development 3 credits
An analytical study of structures of Thai language arts and curriculum development in schools ; practice in Thai language arts curriculum development and evaluation.

Th Ed 521 Thai Language Arts in Elementary Schools 3 credits
Analysis of curriculum and Teaching Thai language arts in elementary schools ; practice in the development of curriculum instructional materials.

Th Ed 531 Thai Language Arts in Secondary Schools 3 credits
Analysis of curriculum and teaching Thai language arts in secondary scchools ; practice in the development of curriculum instructional materials.

Th Ed 571 Workshop for Teachers of Thai Language Arts 3 credits
Practice in the development of competencies

in teaching and supervision of Thai language arts ; a critical study of instructional materials ; preparation of instructional materials.

Th Ed 581 Seminar on Problems and Research in Teaching Thai 3 credits
An analytical study of problems and research in teaching Thai language arts ; proposal of projects to solve problems based on research findings and learning theories.

Sc Ed 511 Theory and Practice in Science Curriculum Development 3 credits
An analytical study of structure and concepts in science current practices in science curriculum development ; practice in science curriculum development and evaluation.

Sc Ed 521 Science in Elementary Schools 3 credits
Analysis of curriculum and teaching in elementary school science ; practice in the development of curriculum instructional materials.

Sc Ed 531 Science in Secondary Schools 3 credits
Analysis of curriculum and teaching secondary school science ; practice in the development of curriculum instructional materials.

Sc Ed 571 Workshop for Science Teachers 3 credits
Practice in the development of competencies in teaching and supervision of school science ; a critical study of instructional materials.

Sc Ed 581 Seminar on Problems and Research in Teaching Science 3 credits
An analytical study of problems and research in teaching science in schools ; proposal of projects to solve problems based on research finding and learning theories.

Math Ed 511 Theory and Practice in Mathematic Curriculum Development 3 credits
An analytical study of structure and concepts

in mathematics, development of mathematic curriculum in schools ; practice in mathematic curriculum development and evaluation.

Math Ed 521 Mathematics in Elementary Schools 3 credits
Analysis of curriculum and instruction of mathematics of elementary schools ; practice in the development of curriculum instructional materials.

Math Ed 531 Mathematics in Secondary Schools 3 credits
Analysis of curriculum and instruction of mathematics in secondary schools ; practice in the development of curriculum instructional materials.

Math Ed 571 Workshop for Mathematic Teachers 3 credits
Practice in the development of competencies in teaching and supervision of mathematics ; a critical study of mathematic instructional materials ; preparation of instructional materials.

Math Ed 581 Seminar on Problems and Research in Teaching Mathematics. 3 credits
An analytical study of problems and research in teaching mathematics in schools ; proposal of projects to solve problems based on research findings and learning theories.

Soc Ed 511 Theory and Practice in Social Studies Curriculum Development 3 credits
(See page 41)

Soc Ed 521 Theory and Behavior of Social Studies Instruction 3 credits
(See page 41)

Soc Ed 522 Tehniques of Social Studies Instruction Evaluation 3 credits
An analytical study of concepts and principles of social studies instruction evaluation, instruments, and test designs, their reliability and validity.

Soc Ed 523 Innovation, Technology, and Change in Social Studies Instruction 3 credits
(See page 33)

Soc Ed 571 Workshop for Social Studies Teachers 3 credits
Practice in the development of competencies in teaching and supervision of teaching social studies ; an analytical study of instructional material ; innovative production and desing of instructional materials based on social studies conceptual approach and psychology of learning.

Soc Ed 581 Seminar on Problems and Research in Social Studies Instruction. 3 credits
An analytical study of problems in school social studies instruction ; proposal of projects for solving problems based on research findings.

E C Ed 511 Curriculum and Teaching in Early Childhood Education 3 credits
(See page 28)

E C Ed 531 Creative Activities for Pre-School Children 2 credits
(See page 28)

E C Ed 532 Children and Dramatic Arts 2 credits
(See page 28)

E C Ed 541 Parent Education 2 credits
(See page 28)

E C Ed 551 Administration and Supervision in Early Childhood Education 2 credits
The operation and maintenance of physical facilities as learning environment of pre-school children ; utilization of local resources for staff development and children's development.

E C Ed 581 Seminar on Problems and Research in Early Childhood Education 2 credits
An intensive study of problems in early childhood

education ; a comparative study of early childhood education programs in Thailand and neighboring countries ; studies of major research findings for the implication in solving problems ; presentation of proposed research projects for discussion and criticism.

Con Ed 501 Adult Education and Problems of Thai Society 3 credits
(See page 39)

Con Ed 521 Techniques, Resources, and Mass Media in Adult Education 3 credits
(See page 39)

Con Ed 571 Practicum in Adult Education 3 credits
(See page 39)

Con Ed 581 Seminar in Adult and Continuing Education 2 credits
Experiences in arranging seminars participated by personnel from adult educational agencies with a view to promoting skills in understanding of the role in coordinating, planning, implementing, administering and supervising programs at both central and local levels.

Con Ed 522 Preparation of Materials in Adult Education 3 credits
Familiarity with tools and materials used in programs for adults ; practical work in constructing, testing, and evaluating teaching and learning materials.

Eng 511 Reading I 2 credits
(See page 140)

Eng 611 Reading II 1 credits
Continuation of Reading I Practice will be given to improve reading speed.

Eng 521 Writing I 2 credits
Practice in writing expository and argumentative essays, critical reviews, precis, and social and

business letters.

Eng 522 Writing II — 2 credits
Continuation of Writing I. Practice in Procedures and techniques in writing research papers.

Eng 531 Oral Comprehension and Expression I — 2 credits
Oral practice will be given to students to enable them to understand conversations, talks and lectures made by native speakers of English, and to make intelligent responses with adequate confidence. Oral activities will include narrating, explaining what read and heard in an interesting way, interviewing for information, and giving reports.

Eng 532 Oral Comprehension and Expression II — 2 credits
Continuation of Oral Comprehension and Expression I. More listening practice will be given to enable students to understand lectures, speeches and debates in English. Students will practice elementary techniques for discussions and speech making from prepared outlines.

Eng 551 Translation I — 2 credits
(See page 141)

Ling 501 Outline in General Linguistics — 2 credits
(See page 141)

Geog 511 Advanced Map and Cartography — 3 credits
(See page 145)

Geog 535 Seminar in Economic Geography — 3 credits
(See page 145)

Geog 523 Seminar in Physical Geography — 3 credits
(See page 145)

Geog 521 Advanced Meteorology and Climatology — 3 credits
(See page 146)

Geog 514 Quantitative Method in Economic Geography 3 credits
(See page 146)

Geog 622 Geomorphology 3 credits
(See page 146)

Hist 511 Analytical Study in Early Thai History 4 credits
(See page 150)

Hist 512 Seminar in Dhonburi and Early Ratanakosin Period. 2 credits
(See page 150)

Hist 611 Seminar in Modern Thai History 3 credits
(See page 150)

Hist 533 Modern China 3 credits
(See page 151)

Hist 622 Seminar in Modern Southeast Asia 3 credits
(See page 152)

Hist 534 Modern Japan 3 credits
An analytical study of the role, the importance and the changes in politics, government, society, economics and foreign policy of Japan from the period of the opening of the country (A.D. 1953) until the present day.

Hist 541 Indian Civilization 3 credits
(See page 151)

Hist 542 History of the Middle East 3 credits
(See page 151)

Hist 543 Modern Australasia 3 credits
An analytical study of the region in the South Pacific with an emphasis on Australia, New Zealand, New Guinea ; the coming of the West ; the changes in the economic, political and social spheres and the role of this region in the world today.

Hist 552 Liberalism and Nationalism in the West 3 credits
(See page 153)

Hist 651 History of Political Theories 3 credits
(See page 153)

Hist 511 Renaissance and Reformation 3 credits
(See page 153)

Hist 652 Seminar in Modern European History 3 credits
(See page 153)

Hist 554 Western Political System 3 credits
(See page 154)

Hist 553 Economic History of Europe 3 credits
(See page 154)

Hist 562 American Social and Cultural History 3 credits
(See page 154)

Speech 511 Bases of Oral Communication and Communication Disorders 3 credits
The production and perception of speech ; anatomy and physiology of the body related to the processes of speech and hearing ; introduction to speech disorders : types, causes and effects ; basic principles for diagnosis and therapy.

Speech 512 Articulation Disorders 2 credits
Articulation of speech sounds and Thai phonetics ; articulatory disorders due to organic and non-organic causes ; principles and procedures of diagnosis and therapy with practice.

Speech 513 Voice and Rhythm Disorders 3 credits
Voice and rhythm disorders : hoarseness, hypernasality, stuttering, : and cluttering ; basic principles and procedures for diagnosis and treatment.

Speech 611 Language Disorders 2 credits
Development of speech and language ; etiology and symptoms of language disorders : delayed

speech and language aphasia, and language deficiency in the mentally retarded ; basic principles for appraisal and treatment of language disorders.

Speech 621 Speech Therapy in School 3 credits
Speech problems commonly found in schools ; roles of the teacher to the children with speech problems ; co-operation between teachers and parents, including speech therapists, psychologists, doctors, and other and others concerned ; preparation and organization of school speech therapy program ; methods and techniques for screening, evaluation, and treatment in an individual with speech problems ; emphasis on practicum.

Math 581 Concepts in Algebra for Teachers 3 credits
An analysis of school mathematic contents with respect to algebraic structure e.g. group, ring field, integral domain, vector space and algebraic system.

Math 582 Concepts in Analysis for Teachers 3 credits
An analysis of school mathematic contents with respect to concepts and principles in analysis.

Math 583 Concepts in Geometry for Teachers 3 credits
An analysis of school mathematic contents with respect to concepts and principles in geometry.

Math 584 Selected Topics in Mathematics 3 credits
A study of selected current topics in mathematics for teachers, e.g. elementary game theory, application of computer in school, application of certain topological concepts in school, and application of mathematics in solving problems.

Thai 511 Thai Structure 2 credits
Studies in Thai Phonology and Thai Syntax.

Thai 612 Seminar in Thai Usage 3 credits

A study of usage and language problems occurring in society in general and in schools. The solving of such problems will be based on linguistics and the language arts.

Ed 531 Advanced Studies in Teaching Thai 3 credits

Studies of problems and conditions in teaching Thai in school ; planning for research and development to improve the instruction.

Educational Administration

Objective

1. To provide professional preparation for educational administrators.
2. To strengthen the calibre of educational administration personnel.
3. To provide professional preparation that will enable the student to do research and apply research results as a means to solve problems and improve educational administration.

Structure of the Program

Requirements

1. Foundations of Education		12 credit hours
1.1 Required Courses		9 credit hours
1.2 Electives Courses		3 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Course		18 credit hours
2.2 Elective Course		9 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of Code Numbers

0 refers to principles of administration, theories and laws
1 refers to personnel
2 refers to school and society
3 refers to economics, finance and budget
4 refers to general education
5 refers to sociology
6 refers to seminar, analysis and educational research
9 refers to independent study

Compulsory

Ed Adm 501	Principles of Educational Administration	3 credits
Ed Adm 511	Personnel Administration in Education	3 credits
Ed Adm 521	School Plant Planning	2 credits
Ed Edm 531	School Finance and Budgeting	2 credits
Ed Adm 661	Seminar in Educational	

	Administration	3 credits
Ed Adm 504	Legal Aspects of Education	2 credits
Ed Adm 502	Administrative Theory and Organization	3 credits

Elective

Ed Adm 503	Politics and Education	3 credits
Ed Adm 532	Economics of Education	3 credits
Ed Adm 551	Social and Cultural Development	3 credits
Ed Adm 505	Comparative Education	2 credits
ED Adm 691	Independent Study	1-3 credits
Ed Adm 522	School and Community Relations	3 credits
Ed Adm 541	Innovation in Education	3 credits
Ed Adm 612	Leadership Functions in School Administration	3 credits
Ed Adm 667	System Analysis	3 credits
Ed Adm 542	Supervision in Education	3 credits
Ed Adm 601	Organizational Development	3 credits
Ed Adm 602	Elementary School Administration	2 credits
Ed Adm 603	Secondary School Administration	2 credits
Ed Adm 604	Vocational School Administration	2 credits
Ed Adm 621	Local Educational Administration	2 credits
Ed Adm 662	Seminar in Academic Affairs	2 credits
Ed Adm 663	Seminar in Student Affairs	2 credits
Ed Adm 664	Seminar in Elementary School Administration	2 credits
Ed Adm 665	Seminar in Secondary School Administration	2 credits
Ed Adm 666	Research in Educational Administration	2 credits
Ed 511	Curriculum Development	3 credits

Course Description

Ed Adm 501 Principles of Educational Administration 3 credits

The course is aimed to take an overview of all principles in school administration. Special emphasis is on the concepts, theories and the

Educational Administration

Objective

1. To provide professional preparation for educational administrators.
2. To strengthen the calibre of educational administration personnel.
3. To provide professional preparation that will enable the student to do research and apply research results as a means to solve problems and improve educational administration.

Structure of the Program

Requirements

1. Foundations of Education		12 credit hours
1.1 Required Courses		9 credit hours
1.2 Electives Courses		3 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Course		18 credit hours
2.2 Elective Course		9 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of Code Numbers

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9 refers to independent study

Compulsory

Ed Adm 501	Principles of Educational Administration	3 credits
Ed Adm 511	Personnel Administration in Education	3 credits
Ed Adm 521	School Plant Planning	2 credits
Ed Edm 531	School Finance and Budgeting	2 credits
Ed Adm 661	Seminar in Educational	

development of administration to the current practices in administrative tasks. Current problems and issues in our school administration will be discussed in view of searching ways and means to deal with these problems.

Ed Adm 511 Personnel Administration in Education 3 credits

The course is focused on role of teacher and administrator in school personnel management, recruitment, placement, personnel development supervision of personnel in public and private school systems, policies affecting certification, rights and responsibilities of teachers.

Ed Adm 521 School Plant Planning 2 credits

Planning educational facilities for school system with special emphasis on writing educational specification, evaluating existing facilities, site selection, architectural and constructural planning, building standard and selection of equipment.

Ed Adm 531 School Finance and Budgeting 2 credits

Principles, practices and trends in financing public education in Thailand including sources of revenues, bugetary process, school finance as related to public finance, and fiscal policies as related to the total educational programs.

Ed Adm 661 Seminar in Educational Administration 3 credits

The discussion and survey of problems related to organizational patterns, decision-making, educational planning, school administrative tasks, and other educational problems concerned.

Ed Adm 504 Legal Aspects of Education 2 credits

Educational law as set forth in the constitutions, statutes, rules and regulations of the Ministry of Education and other related educational

agencies ; principles growing out of fundamental legal procedures.

Ed Adm 502 Administrative Theory and Organization 3 credits
(See page 54)

Ed Adm 503 Politics and Education 3 credits
A study of the relationship between public administration and education ; political influences over educational management and the analytical study of political doctrines or governments toward educational system with special emphasis on democracy ; discussion on the role of the pressure group, decentralization of authority, allocation of budgets, decision - making at the governmental and local levels the analysis of problems and trends directly and indirectly effecting educational administration.

Ed Adm 532 Economics of Education 3 credits
An analysis of the principles in accordance with how the national income may be allocated to support education. Consideration is given to human capital, education and economic development, economic and social aspects of educational planning ; theory of economic planning ; methodology and the relationship of manpower ; economic and social planning in Thailand.

Ed Adm 551 Social and Cultural Development 3 credits
An analysis of the great impact of social and cultural change on Thai society ; theories of social and cultural development. Emphasis is on planning to face the social change and also improvement of education to fit to the social and cultural condition.

Ed 505 Comparative Education 3 credits
A study of mathodology and assumptions in comparative education as well as comparative

study of the contemporary educational systems in selected countries ; an analytical study of significant forces affecting the development of existing educational systems.

Ed Adm 691 Independent Study 1-3 credits
Students work individually on topics of their interest under the direction of staff members.

Ed Adm 522 School and Community Relations 3 credits
A study of the school and community with an emphasis upon the professional responsibilities and ethics of teachers as releted to the lay public, the community, community resources, administitrative and social agencies, and the educational profession, school community relations and problems in education are stressed.

Ed Adm 541 Innovation in Education 3 credits
An analytical study of current innovation in educational system, innovative and change process within educational institutions, research findings in the innovation of education and administration area including change and development techniques for the benefit of teachers and administrators.

Ed Adm 612 Leadership Functions in Educational Administration 3 credits
This course is aimed to take an overview of human relations and ways of improving human relation in educational organization. Emphasis is placed on group process, anatomy of leadership, educational administration as leadership, communication and administrative success and decision-making.

Ed Adm 667 Systems Analysis 3 credits
(See page 55)

Ed Adm 542 Supervision in Education 3 credits
Roles and functions, skills, behavior and techniques of the educational supervisors, the

analysis of the past supervisory practices including the research and study of problems in order to improve the educational supervision in Thailand.

Ed Adm 601 Organizational Development
A history of organization development and its definition ; basic components of and OD program as the processes of change ; basic understanding of theories and practices as applicable to educational institutions.

Ed Adm 602 Elementary School Administration 3 credits
Philosophy, policies and purposes of elementary education management, roles and functions of the educational officers ; school administrative tasks, and principles of the administration supervision of the elementary schools.

Ad Adm 603 Secondary School Sdministration 2 credits
An overview of basic principles in secondary school administration ; roles of secondary school administrators ; trends in the administration of the changing secondary school including standard criteria for effective secondary school in Thailand.

Ed Adm 604 Vocational School Administration
Philosophy, policies, and purposes of vocational education management ; administrative structure of vocational education ; roles and functions of the vocational school officers with special emphasis on the vocational schools, including current problems and trends in vocational school administration in Thailand.

Ed Adm 621 Local Educational Administration 2 credits
Structure of local educational administration, roles and functions of local educational officers ; Chang wat and Amphoe Administrative officers in education ; principles of Community development with special emphasis on educational

leadership of the local educational administrators to the community.

Ed Adm 662 Seminar in Academic Affairs 2 credits
Academic problems in the administration of educational institutions ; selection of interesting acadmic problems for classroom attivities ; writing good seminar projects.

Ed Adm 663 Seminar in Student Affairs 2 credits
Seminars on the administration of student affairs in various levels of educational institutions ; the seminar topics vary according to the nature of problems and issues in student affairs; administration and the student's field of interest

Ed Adm 664 Seminar in Elementary School Administration 2 credits
Intensive and analytical study of current problems ; issues and trends in elementary school administration in Thailand ; study of the application of principles, theories and research findings in the area of elementary school administration.

Ed Adm 665 Seminar in Secondary School Administration 2 credits
An overview of all principles of secondary school administration ; a study of problems, issues in the administration of secondary schools in Thailand ; student's seminar topics will be experimented as group projects.

Ed Adm 666 Research in Educational Administration 2 credits
Studies of problems, characteristics, and nature of research design in educational administration designing to integrate introductory concepts in the areas of research methodology, statistics and measurement to allow meaningful application of these concepts

to understanding research and scientific methods of problem solving in educational administration, and to preparing thesis writing.

Ed 511 Curriculum Development 3 (3) credits
Studies of school curriculum as it relates to the psychological, philosophical, cultural, and social basis of education ; methods and techniques in curriculum revision and preparation of curriculum materials.

Guidance

Objectives

1. To effectively produce guidance and counseling instructors.
2. To train future counselors who will work in educational institutions
3. To enable the student to do research on problems relating to guidance and counseling

Structure of the Program

Requirements

1.	Foundations of Education Area		12 credit hours
2.	Major Area		27 credit hours
	2.1 Required Courses	not less than	20 credit hours
	2.2 Elective Courses	not less than	7 credit hours
3.	Free Elective Area		3 credit hours
4.	Thesis		6 crddit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to foundations
1 refers to theories and principles
2 refers to practicum
3 refers to management, services, administration
4 refers to problems, seminar
5 refers to research, testing

Conpulsory 20 credits

Guid 501	Foundation of Guidance and Student Personnel Work	2 (3) credits
Guid 512	Theories and Techniques of Counseling I	2 (2) credits
Guid 513	Theories and Techniques of Counseling II	2 (2) credits
Guid 531	Occupational, Educational and Social Information	3 (3) credits
Guid 551	Guidance Testing	2 (2) credits
Guid 621	Group Counseling	2 (3) credits
Guid 622	Counseling Practicum I	2 (3) credits
Guid 623	Counseling Practicum II	3 (6) credits
Guid 641	Problems in Guidance and counseling	2 (2) credits

Elective 7 credits

Psy 513	Advanced Social Psychology	3 (3) credits
Psy 521	Developmental Psychology	2 (2) credits
Psy 627	Clinical Child Psychology	3 credits
Psy 633	Theories of Personality	3 (3) credits
Psy 634	Mental Hygiene	3 (3) credits
Guid 511	Group Dynamics	2 (2) credits
Guid 514	Career Education	2 (2) credits
Guid 521	Case Study	2 (2) credits
Guid 532	Guidance in Elementary School	3 (3) credits
Guid 533	Guidance in Secondary School	3 (3) credits
Guid 534	Student Personnel Work in Higher Education	3 (3) credits
Ed Psych 513	Mental Health of School Children	2 (2) credits
Ed Psych 611	Group Behavior	2 (2) credits

Course Description

Guid 501 Foundations of Guidance and Student Personel Work 2 (3) credits

Philosophy and scope of guidance services in schools and student personnel services in colleges ; history and development of guidance in Thailand and abroad ; a survey of some current guidance programs in schools, emphasizing the organization and administration of guidance services ; the ethics of counselor and his role in school.

Guid 512 Theories and Techniques of Counseling I 2 (2) credits

Comparison of theories of counseling and psychotherapy in terms of philosophy, main characteristics, concept of man, goals of counseling theories and counseling techniques ; emphasis on self-concept, psychoanalytic viewpoint, Rogerian theory, Gestalt therapy, existential viewpoint, transactional analysis.

Guid 513 Theories and Techniques of

Counseling II 2 (2) credits
Comparison of theories of counseling and psychotherapy in terms of philosophy, main characteristics, concept of man, goals of counseling theories and counseling techniques ; emphasis on social learning, trait and factor theory, rational-emotive theory, behavioral counseling, realing therapy, eclectic viewpoint.

Guid 531 Occupational Educational and Social Information 3 (3) credits
Methods for providing occupational, educational and social information in the guidance program, sources of information in Thailand, techniques of teaching units in Occupation techniques of Placement, Community, educational and occupational trends.

Guid 551 Guidance Testing 2 (2) credits
Basic principles in testing and test selection for guidance, aptitude tests, achievement tests and psychometric tests, test administration and interpretation, the use of test scores in guidance.

Guid 621 Group Counseling 2 (3) credits
A study of various aspects of group counseling, counselor's role and group climate; students assigned into small groups working as teammates; sensitivity training, role flexibility, self acceptance, etc. learned by ways of small group interaction.

Guid 622 Conseling Practicum I 2 credits
Development of skills in counseling techniques through role playing, simulation, observation and behavior analysis with the use of video-tape, review, and evaluation of counseling practice.

Guid 623 Counseling Practicum II 3 (6) credits
Practicum in guidance and counseling in

school setting under close supervision of school counselor and college instructor in counseling ; arrangement of guidance and counseling programs to provide each trainee with experience in individual and group counseling ; provisions of information services, participation in student activities ; individual analysis, and case studies.

Guid 641 Problems in Guidance and Counseling 2 (2) credits
An analysis of guidance and counseling problems in schools. Students will be exposed to problems relevant to counseling practices such as drug-addiction, juvenile delinquency, student activism, gambling, sex deviants, etc.

Psy 513 Advanced Social Psychology 3 (3) credits
Intensive consideration of selected topics not being covered in other advanced courses social psychology ; newly developed areas of social psychology such as social facilitation, bystander intervention, imitation, conformity, altruism, aggression, etc.

Psy 521 Developmental psychology 3 (3) credits
Principal theories concerning child development; various aspects of human development from conception to senescence with special emphasis on psychological and social factors.

Psy 627 Clinical Child Psychology 3 (3) credits
Essential conditions in child psychotherapy especially the therapeutic process with the normal child, the handicapped child, the disturbed child and the creative child ; a therapeutic approach and the counseling with parents of problemed children ; a thereapist's role in the school settings and in the child guidance clinic is surveyed and observed.

Psy 633 Theories of Personality 3 (3) credits
A review of theories of personality (emphasizing

structure and dynamic) such as Freud's Psychoanalytic theory, Social Psychological theory, Murray's Porconology, Lewin's Field Theory, Organismic theory, Factor theories, Rogers ; self theory, Skinner's Stimulus Response theory ; application of observational accounts, case studies and cross-cultural research.

Psy 634 Mental Hygiene 3 (3) credits
A general course designed to give an understanding of the healthy personality throughout different stages of life, exploration of fundamental factors in human adjustment with emphasis upon the prevention of inadequate adjustment and upon the process by which maladjusted individuals may be restored to normal living.

Guid 511 Group Dynamics 2 (2) credits
Principles of group dynamics, and leadership training. This course provides an opportunity for experiencing, observing, and practicing basic human relations skills necessary in the achievement of a productive group process.

Guid 514 Career Education 2 (2) credits
Concepts of career education emphasising on current issues and developments in occupational trends, teachers' and counselors' roles in career development of school children. Students are exposed to various career development models, sources and materials for career information.

Guid 521 Case Study 2 (2) credits
Diagnosis and interpretation of case study materials, discussion on problems and process of counseling based on actual cases. Students are trained to work with case problems under the supervision of the instructor

Guid 532 Guidance in Elementary

School 3 (3) credits
The functions of guidance in elementary school, organization and administration of the guidance program at this level emphasising on student's social and emotional adjustment, introduction to the use of techniques for understanding the individual and working with group. Practical guidance problems in elementary schools are discussed.

Guid 533 Guidance in Secondary School 3 (3) credits
The functions of guidance in secondary school ; organization and administration of the pupil personel services emphasising on student's life adjustment and career development, methods of indentifying guidance needs of secondary school student ; an examination of current guidance programs and problems in schools.

Guid 534 Student Personnel Work in Higher Education 3 (3) credits
An overview of student personnel services in colleges and universities ; philosophy, organization and administration of the personnel program at college level, roles of student personnel workers, and personnel services are discussed as well as a survey of college personnel programs in colleges and universities.

Ed Psych 513 Mental Health of School Children 2 (2) credits
The factors involved in child development (preschool period, early school years, intermediate years, adolescence) and the problems of each period ; the preventive and remedial phases of mental health ; emphasis on factors favoring prevention and resolution of behavior difficulties and evaluation of school programs on basis of their contribution to mental health.

Ed Psych 611 Group Behavior 2 (2) credits

Group research and theory focusing on investigation of interpersonal relationship ; communication structures ; status and power relations ; role differentiation ; group uniformity ; group influence on individual's behavior and problem-solving behavior including discussion of a group acting as a mob.

Educational Measurement

Objectives

1. To enable the student to develop, evaluate, and research into various tools for behavioral measurement.
2. To provide professional preparation that will enable the student to plan, operate and teach measurement, statistics, and educational research courses.
3. To promote the student to further the study in educational measurement at the more advanced level.
4. To promote the student to be conscious of and responsible to measurement specialist's ethics.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area		27 credit hours
2.1 Required Courses	not less than	18 credit hours
2.2 Elective Courses	not less than	9 credit hours
3. Free Elective Courses	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to measurement
1 refers to statistics
2 refers to research
3 refers to computer science

Compulsory

EDM 501	Theory of Educational Test and Measurement	3 (3) credits
EDM 502	Construction of Achievement Tests I	3 (3) credits
EDM 503	Construction of Achievement Tests II	3 (3) credits
EDM 504	Measurement of Intelligence and Aptitude	3 (3) credits
Stat 515	Statistical Designs of Experiment	3 (3) credits

Res 523	Research Practicum in Measurement	3 (3) credits
EDM 505	Theory of Evaluation	3 (3) credits
EDM 506	Seminar in Educational Testing and Measurement	3 (3) credits
Stat 516	Sampling Technique	3 (3) credits
Stat 517	Nonparametric Statistics	3 (3) credits
Stat 518	Factor Analysis	3 (3) credits
Res 524	Seminar in Educational Research	3 (3) credits
S Sc 531	Digital Computer Programming	2 (2) credits
S Sc 532	Introduction to Computing	3 (3) credits
Ed 600	Educational Problems	3 (3) credits
Psy 501	General Psychology	3 (3) credits

Course Description

EDM 501 Theory of Educational and Psychological Measurement 3 credits

Roles of evaluation in education, function of measurement in evaluation; pupil characteristics to be measured, levels of refinement in measurement ; types of evaluation instrument judging the quality of a measurement instrument ; effect of test length on test parameters ; validity and reliability ; planning a school testing program : function mechanics ; raw scores : definition of true and error scores, basic equations derived from a definition of random error ; scores interpretation ; derived scores : linear and area transformation : I.Q., Z-score, T-scores, profiles : specific, profiles, general profiles, profiles analysis ; norms : types of norms table, multiple score norms table, expectancy table, etc ; marking, grading,reporting.

EDM 502 Construction of Achievement Tests I 3 credits

Development of testing techniques for the appraisal of the cognitive objectives of instruction, such as knowledge, problem - solving abilities, communication skills, and study and research skills.

EDM 503 Construction of Achievement Tests II 3 credits

Concepts in phychological theories essential for the construction of tests for the appraisal of the affective domain, development of testing techniques for the appraisal of the affective objectives of instruction, such as interests, attitudes and values, appreciation, personal and social adjustment, and research skills.

EDM 504 Measurement of Intelligence and Aptitude 3 credits

The meaning of intelligence ; the structure of intelligence ; norms on intelligence tests ; the use of aptitude tests ; the differential nature of aptitudes ; reliability and validity of aptitude measures ; norms on aptitude tests ; development of testing techniques for the appraisal of the intelligence and aptitude test, and study and research skills.

Stat 515 Statistical Designs of Experiment 3 credits

Fundamental concepts and basic designs : nature and purpose of experiments, measure of precision, testing hypothesis, good design, basic designs, types of error, principle of randomization, chi-square, t , and F distributions : degrees of freedom, limitation of t-test, analysis of variance ; the test of overall null hypothesis, mean square ratio, assumptions underlying F-test ; simple randomized design, analysis of variance in double-entry tables : analysis of total sum of squares into components,

computational procedure, meaning of interaction, treatment X levels designs, repeated measurement design, factorial design, raplication design, split-plots design.

Rse 523 Research Practicum in Measurement 3 credits

To provide practicum experience in research of educational measurement emphasizing on problem definition, design, data analysis, and research report.

EDM 505 Theory of Evaluation 3 vredits

Definition of evaluation ; the role of evaluation in education ; types and categories of evaluation ; educational decision making ; criteria ; evaluation methodology ; evaluative research design ; measurement effects ; evaluation and program administration.

EDM 506 Seminar in Educational Testing and Measurement 3 credits

Primarily concerned with specific problems in education testing and measurement which students and faculty members wish to explore.

Stat 516 Sampling Technique 3 credits

Survey of sampling principles ; simple random sampling ; stratified simple random sampling ; simple one or two-state cluster sampling ; control of variation in size of cluster in estimating totals, averages, or ratios multi-stage sampling with large primary sampling units ; regression estimates, double sampling, time series, systematic sampling and other methods.

Stat 517 Nonparametric Statistics 3 credits

Nonparametric VS. parametric statistics, central limit theorem ; choosing an appropriate statistical test ; power, scales, the one sample case, the case of two related samples, two

independent samples, k-independent samples methods binomial test, chi-square, sign test, Fisher exact probability test, Mann-Whitney U test, chi-square test for two independent samples, median test, etc.

Stat 518 Factor Analysis 3 credits

Mathematical Introduction : matrices, deterimants, scalar products matrix inversion, Eigenvector and transformations, history of factor theory : Spearman's two-factor theory, multiple-factor theory, correlation matrix and the factor matrix, geometric interpretation of factors, extraction of factors by the controid methods, rotation of reference axes ; simple structure, rotation to psychological meaning, interpretation of factors, estimation of factors in persons ; some special problem in factor analysis.

Res 524 Seminar in Education Research 3 credits

Primarily concerned with specific research problems in education which student and faculty members wish to explore.

C Sc 531 Digital Computer Programming 3 credits

Mechanized data processing concepts ; analog vs. digital computers ; history and development of digital computers ; punched cards ; Hollerith's code ; digital computer system ; concept FORTRAN, or basic language programming, arithmetic statements ; control statements ; input ; subroutines ; statistical procedures : multivariate analysis, analysis of variance, chi-square, matrix procedures.

C Sc 532 Introduction to computing 3 credits

Computer structure & construction of computer programs ; use of a specific programming language to solve problems over a wide range

of applications on a digital cumputer ; the applications selected from problem areas in which no sophisticated knowledge of mathematics is required.

Ed 600 Educational problems 3 credits

A general survey of problems occurring in different levels of educational systems and some possible solutions ; personnel, administrative, academic types of problems ; psychological and socio-economic aspects of the problems and solutions ; roles of school guidance program as a means to alleviate some problems.

Psy 501 General Psychology 3 credits

Scientific method : definition of psychology ; nature, function, and language of science ; understanding explanation and theory ; the science of behavior methods of measuring behavior, dependent - independent variables, stiumulus-response variables, empirical relationships, theoretical constructs and psychological theory, the origin and status of modern psychology, pre-scientific speculation, beginning of science of psychology, influence of pragmatism, psychological testing, social psychology, statistical description and interpretation of scientific data ; biological foundation of behavior receiving, communicating, reacting mechanisms, nervous systems ; heredity, maturation, learning theory and experiments, Freud theory, perceptions.

Educational Technology

Objectives

1. To provide professional preparation that will make the student knowledgeable and capable to teach educational technology courses.
2. To enable the student capable management and gain leadership for production and services relating to instructional technology
3. To better equip the student to do research work on problems relating to the application of technology in teaching and education.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area	not less than	27 credit hours
Required Courses		27 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to general
1 refers to theories and principles
2 refers to application
3 refers to practicum

Compulsory 27 credits

Ed T 510	Research and Theory in Educational Technology	2 credits
Ed T 511	Technology of Education	2 credits
Ed T 514	Administration of Educational Technology Program	2 credits
Ed T 515	Curricular integration of Instructional Media	2 credits
Ed T 530	Advanced Preparation of Graphic Materials	2 credits
Ed T 531	Advanced Photography	3 credits
Ed T 532	Educational Motion Picture	

	Production	3 credits
Ed T 533	Educational Radio Program Production	3 credits
Ed T 534	Educational Television Program Production	3 credits
Ed T 620	Seminar in Educational Technology	2 credits
Ed T 630	Practicum	3 credits

Free Elective 3 credits at least

Ed T 512	Principle and Theory of Message Design	2 credits
Ed T 513	Mass Communication in Education	2 credits
Ed T 535	Design and Production for Communication	2 credits
Ed T 520	Multimedia Approach to Programmed Instruction	2 credits
Ed T 500	Public Relations	2 credits
Ed T 536	Design for Printed Materials	2 credits

Course Description

Ed T 510 Research and Theory in Educational Technology 2 credits

Review research in the field of educational technology and theories derived from such research ; emphasis on the ways in which the methods and media for instruction were systematically designed to achieved certain educational outcomes.

Ed T 511 Technology of Education 2 credits

A development of technology as applied to education in Thailand as well as in other developed countries ; new concept of educational technology, its justification and the ways in which it has been implemented to improve our educational systems.

Ed T 514 Administration of Educational

Technology Program 2 credits
An analysis of systematic designs of service programs for instruction existing in various educational institutional ; considerations of such elements as aims and purposes, organization, facilities, personnel and program evaluation system.

Ed T 515 Curricular Integration of Instructional Media 2 credits
A process of curriculum development that leads to teachable instructional systems ; planning for integrative system in instructional process which includes instructional objectives, strategies, media and evaluation with an emphasis on experiences in integrating certain media into the instructional system.

(Presequissite : Ed T 330 or Ed T 336)

Ed T 530 Advanced Preparation of Graphic Materials 2 credits
Advanced techniques for developing various visual materials such as layouts and designs ; experiences in silkscreening and offset printing

Ed T 531 Advanced Photography 3 credits
A study of the advanced theories and techniques of photography and applying them to the production of educational slides and filmstrips.

Ed T 532 Educational Motion Picture Production 3 credits
Theories and principles for the production of educational films ; practices in the complete production process.

Ed T 533 Educational Radio Program Production 3 credits
Practical training in producing educational radio programs including program planning,

budgeting, scripting, studio management, interviewing and commentating techniques, sound-mixing, tape eliting, music and sound effects, cueing, the use of support materials, audience participation, feed-back ; the programs made are tried out in teaching situations at all levels or in adult community and other out-of-school learning environments.

Ed T 534 Educational Television Program Production 3 credits

Practical training in making short television teaching aid programs, including program planning budgeting, scripting, preparation of graphics, set design, direction, vision-mixing, sound-mixing, lighting, and camera operation ; the programs made are tried out in teaching situations at all levels or in adult, community or other out-of-school learning environments.

Ed T 620 Seminar in Educational Technology 2 credits

A survey and an analysis of certain problems in current educational situations which call for technology to solve them. Experiences in conducting a seminar so that resolutions to the problems are derived.

Ed T 630 Practicum 3 credits

Fieldwork experiences and/or certain assigned projects to be carried out by students in the field of applied educational technology.

Ed T 512 Principles and Theories of Message Disign 2 credits

Principle for clear writing to communicate ideas and feelings ; theories by which the written messages in based such as learning psychology, perception and audience characteristics ; experiences in applying those principles and theories to the actual design

of messages through various media used.

Ed T 513 Mass Communication in Education 2 credits

A historical development of mass communication in education, formal and nonformal, as well as in society, politics and economy. The effects of mass communication on the programs for life-long education are mainly considered.

Ed T 535 Design and Production for Communication 2 credits

Theories of communication as related to effective writing of messages ; principles for clear writing ; practices in writing of articles, radio programs news reports.

Ed T 520 Multi - media Approach to Programmed Instruction. 2 credits

A development of programmed instruction and teaching machines ; experiences regarding procedures in writing programmed textbook and programmed lessons in which various media are conclusively designed.

Ed T 500 Public Relations. 2 credits

Planning and administering public relations for government and private organization ; studying cases and problems of pulbic reations.

Ed T 536 Design for printed Materials. 2 credits

The design of textbook, supplement, reading materials, periodicals brochure and other types of publication.

Special Education

Objectives

Hearing Impaired Program

To provide professional preparation for the hearing impaired teaching personnel, and to enable them to teach and research for professional growth which will be useful in helping those who have hearing and speaking problems.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
1.1 Required Courses		9 credit hours
1.2 Elective Courses		3 credit hours
2. Major Area	not less than	27 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to psychology and education
1 refers to hearing and speech
2 refers to rehabilitation
3 refers to methods of teaching

Compulsory 22 credits

Spec Ed 501	Psycho-Social Aspects of Hearing Impairment	2 credits
Spec Ed 502	Language Development and Hearing Impairment	2 credits
Spec Ed 511	Principles of Audiology	3 credits
Speech 511	Bases of Oral Communication and Communication Disorders	3 credits
Spec Ed 513	Phonetics and Phonology	3 credits
Spec Ed 521	Aural/Oral Rehabilitation	2 credits
Spec Ed 522	Practicum 1	1 (3) credits
Spec Ed 523	Practicum 2	2 (6) credits
Spec Ed 531	Methods of Speech Teaching	2 (3) credits
Spec Ed 532	Methods of Language Teaching	2 credits

Elective 5 credits at least

Spec Ed 504 Education of Exceptional Children 2 credits
Introduction to educational programs for handicapped children in and outside Thailand ; criteria for determining execptional children ; psychological aspects of exceptional children ; teachers and administrators working with exceptional children.

Spec Ed 505 Planning and Administration of Education of Exceptional Children 2 credits
Organization and administrative aspects of special education programs ; legal, financial aspects of special education ; program planning ; administering special service; improvement of instruction.

Spec Ed 506 Seminar in Special Education 2 credits
A study of special education problems and issues in Thailand ; appraisal of current problems, trends and practices in the education of the exceptional ; welfares for the handicapped.

Spec Ed 507 Independent study 1-3 credits
An intensive independent study in a specific area under supervision.

Spec Ed 511 Principles of Audiology 3 credits
Physics of sound ; anatomy and physiology of hearing organs ; disorders of hearing ; classification of hearing loss ; audiological and otological advice ; principle of hearing measurements (both in theoretical and practical work) and hearing conservation.

Spec Ed 513 Phonetics and Phonology 3 credits
Introducation to articulatory phonetic and to the International Phonetic Alphabets ; articulatory descriptions of the Thai speech sounds ; articulatory features of Thai and their applications in speech training ; introduction to basic concepts in phonology ; phonological patterns of Thai ; deviant phonology ; linguistic

approach in remediation.

Spec Ed 521 Aural/Oral Rehabilitation 2 credits
Principles of auditory training programs ; hearing aids ; selection and care of hearing aids ; the use of hearing equipments for auditory training ; speech and hearing conservation.

Spec Ed 522 Practicum 1 1 (3) credits
Group and individual work in speech clinic for not less than 45 hours.

Spec Ed 523 Practicum 2 2 (6) credits
Group and individual practice teaching to hearing impaired children for not less than 90 hours.

Spec Ed 524 Vocational and Social Rehabilitation 2 credits
Principles and methods of vocational guidance ; prevocational preparation ; vocational training and selective job placement of the hearing impaired to enable them to secure and retain suitable employment ; principles of social rehabilitation and social environment including the legislation concerning the disabled, especially the hearing impaired.

Spec Ed 531 Methods of Speech Teaching 2 (3) credits
Principles of speech teaching ; speech reading (lip reading) techniques ; analytic and synthetic methods of speech teaching ; rhythm control ; proper voice production ; speech correction and speech conservation.

Spec Ed 532 Methods of Language Teaching 2 credits
Principles of language teaching ; promotion of language learning ; construction and utilizations of teaching aids and teaching materials ; issues and trends in language teaching.

Spec Ed 533 Methods of School Subject Teaching 2 credits

General principles of teaching techniques for the hearing-impaired children in primary schools ; methods of teaching school subjects such as, arts, music, physical education, social sciences, etc. ; classroom arrangement and utilization of teaching aids for such subjects.

Spec Ed 534 Introduction to Sign Language 2 credits
History of sign language principles of sign language ; linguistics of sign language ; sign language in classroom teaching ; sign language for interpreters ; practicum in Thai sign language.

Speech 511 Bases of Oral Communication and Communica-Communication Disorders 3 credits
The production and perception of speech ; anatomy and physiology of the body related to the processes of speech and hearing ; introduction to speech disorder : types, causes and effects ; basic principles for diagnosis and therapy.

Speech 621 Speech Therapy in School 3 credits
Speech problems commonly found in schools ; roles of the teacher to the children with speech problems ; co-operation between teachers and parents, including speech therapists, psychologists, doctors, and others concerned ; preparation and organization of school speech therapy program ; methods and technigues for screening, evaluation, and treatment in an individual with speech problems ; emphasis on practicum.

Developmental Psychology

Objectives

To prepare scholars in developmental psychology who are able to teach and research either for professional growth or for a decisive relating to the field resolution of educational and social problems.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hous
2. Major Area	not less than	27 credit hours
2.1 Required Courses		21 credit hours
2.2 Elective Courses		6 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of Code Numbers

0 refers to behavioral science
1 refers to social psychology
2 refers to developmental psychology
3 refers to personality psychology
4 refers to quantitative psychology
5 refers to experimental psychology
6 refers to physiological psychology
7 refers to educational psychology
8 refers to applied psychology
9 refers to independent study

Compulsory

Psy 501	General Psychology	3 credits
Psy 523	Child Psychology	3 credits
Psy 524	Adolescent Psychology	3 credits
Psy 525	Theories of Child Development Psychology	3 credits
Psy 623	Adult Psychology	3 credits
Psy 629	Seminar in Developmental Psychology	3 credits
Stat 515	Statistical Design of Experiments	3 credits

(Prerequsite : Stat 513 Inferential Stotistics)

Elective

Psy 522	Infant Psychology	3 credits
Psy 527	Research Methods in Developmental Psychology	3 credits
Psy 627	Clinical Child Psychology	3 credits
Psy 628	Seminar in Behavior Problems of Childhood and Adolescence	3 cresits
Psy 642	Measurements in Child Development	3 credits

Free Elective

Psy 505	Differential Psychology	3 credits
Psy 516	Conflict and Conflict Resolution	3 credits
Psy 519	Psycho - Social Development	3 credits
Psy 521	Developmental Psychology	3 credits
Psy 526	Language Development	3 credits
Psy 553	Psychology of Learning	3 credits
Psy 554	Motivation	3 credits
Psy 555	Sensory Psychology	3 credits
Psy 556	Psychology of Perception	3 credits
Psy 557	The Emotions	3 credits
Psy 601	Seminar in General Psychology	3 credits
Psy 602	Comparative Psychology	3 credits
Psy 625	Piaget's Theory	3 credits
Psy 633	Theories of Personality	3 credits
Psy 634	Mental Hygiene	3 credits
Psy 635	Psychology of Deviant Behavior	3 credits
Psy 673	Seminar on Contribution of Buddhism to Value System	3 credits
Psy 675	Behavioral Approach to School Curriculum	3 credits
Psy 677	Psychology of Exceptional Children	3 credits
Psy 680	Sensitivity Training	3 credits
Psy 691	Independent Study	3 credits
Stat 518	Factor Analysis	3 credits
C Sc 531	Digital Computer Programming	3 credits
C Sc 532	Introduction to Computing	3 credits

Psy 501 General Psychology 3 credits

Scientific method : definition of psychology ; nature, function, and language of science ; understanding, explanation and theory ; the science of behavior : methods of measuring behavior, dependent - independent variables, stiumulus - response variables, empirical relationships, theoretical constructs and psychological theory, the origin and status of modern psychology, pre-scientific speculation, beginning of science of psychology, influence of pragmatism, psychological testing, social psychology, statistical description and interpretation of scientific data ; biological foundation of behavior : receiving, communicating, reacting mechanisms, nervous systems ; heredity, maturation, learning theory and experiments, Freud theory, perceptions.

Psy 523 Child Psychology 3 credits

Orientation to developmental approach, the beginning of life, biological inheritance, prenatal development ; the newborn infant, behavior of the newborn, motor behavior ; psysical development, stages of development ; language development and the function of speech in early childhood ; emotional development, emotional pattern of anger and fear, the basis of emotional well-being in early childhood, social development, early forms of social behavior, social behavior toward age peers ; intellectual development, perceptual and adaptive behavior, child's interaction with his environment.

Psy 524 Adolescent Psychology 3 credits

Biological, psychological and sociological perspectives of late childhood to early adulthood emphasizing on such issues as the role of

ideology in identity formation, inter and intra society variants,opportunity for observation and interviewing.

Psy 525 Theories of Child Development 3 credits

A survey of basic systematic positions in current theories of child development such as social learning theory (S-R), field theory (Kurt Lewin), psychoanalytic theory of development (Sigmund Freud), the organismic developmental theory (Heinz Werner), selected empirical research areas.

Psy 623 Adult Psychology 3 credits

Characteristics of the early adulthood ; personality development during the period, the meaning of maturity, finding one's place in the world of work, efficiency and productivity, psychological factors in marital happiness, characteristics of middle and old ages ; period of transition, Adult mental abilities, mental health in old age.

Psy 629 Seminar in Developmental Psychology 3 credits

Systematic study of current topics in the field of developmental psychology ; critical review of recent research and theory concerning selected behavieral problems.

Stat 515 Statistical Designs of Experiments 3 credits

Fundamental concepts and basic designs : nature and purpose of experiments, measure of precision, testing hypothesis, good design, basic designs, types of error, principle of randomization, chi-square, t, and F distributions ; degrees of freedom, limitation of t-test, analysis of variance : the test of overall null hypothesis, mean square ratio, assumptions underlying F-test ; simple randomized design, analysis of variance in double - entry tables :

analysis of total sum of squares into components, computational procedure, meaning of interaction, treatment X levels designs, repeated measurement design, factorial design, replication design, split-plots design.

Psy 522 Infant Psychology 3 credits
Sensory, motor, cognitive, language, social and emotional development during the first two years of life.

Psy 527 Research Methods in Developmental Psychology 3 credits
A critical review of theory and research in several areas of developmental psychology emphasizing on current issues, evaluation of present knowledge, and methodological problems in research.

Psy 627 Clinical Child Psychology 3 credits
Essential conditions in child psycho-therapy especially the therapeutic process with the normal child, the handicapped child, the disturbed child and the creative child ; a therapeutic approach and the counseling with parents of problemed children ; a therapist's role in the school settings and in the child guidance clinic.

Psy 628 Seminar in Behavior Problems of Childhood and Adolescence 3 credits
Discussion of selected current behavior problems of childhood and adolescence ; application of current research finding and theories to provide guidlines for the solutions of problems.

Psy 642 Measurements in Child Development 3 credits
The history, purposes and uses of various types of tests, a survey of available tests ; the

criteria of test selection with an emphasis on techniques of measurements in child development ; test construction, validation, reliability ; administering, scoring, interpreting and their uses.

Psy 505 Differential Psychology 3 credits
Individual differences : individual differences in intelligence, school achievement ; special aptitudes and cognitive styles ; group differences : sex differences, age differences, race differences and social class differences ; factor producing differences : hereditary and environmental factors.

Psy 516 Conflict and Conflict Resolution 3 credits
Exploration of group and inter-group dimensions of conflict and conflict resolution.

Psy 519 Psycho-Social Development : Theories and Researches 3 credits
Theories and researches pertaining to the area of psychological development and social development of children and youth emphasizing the discussions of both theories and related problems when applying the theories to the children in Thai society and culture.

Psy 521 Developmental Psychology 3 credits
Principal theories concerning child development various aspects of human development from conception to senescence with special emphasis on psychological and social factors.

Psy 526 Language Development 3 credits
An intensive studey of language development from infancy to late childhood with major emphasis on psycho - linguistics.

Psy 553 Psychology of Learning 3 credits
Examination and discussion of current research, and of theoretical and experimental problems

in the area of learning and behavior modification ; reinforeement, extinction, motivation, generalization, discrimination, retention and forgetting.

Psy 554 Motivation 3 credits

A survey of the theoretical and research literature pertaining to the topic of motivation ; consideration of the concepts of instinct, drive and motive with coverage of both animal and human studies.

Psy 555 Sensory Psychology 3 credits

A structural and functional examination of the basic sensory process ; investigation of the problems of sensory quality and sensory quantity with major emphasis on visua acuity, color vision, pitch discrinsination, and haptic sensitivity.

Psy 556 Psychology of Perception 3 credits

An examination of the historical development, research, and major theoretical positions in the area of perceptual psychology ; theoretical and experimental treatment of the basic perceptual phenomena.

Psy 557 The Emotions 3 credits

A study of the evolutionary, ethological, and psychological significance of the emotion in personality functioning and in interpersonal and intergroup relations ; components of emotion, the individual's emotional experience, and the way in which the emotions interact with other aspects of personality.

Psy 601 Seminar in General Psychology 3 credits

Systematic study of current topics in psychology of general - theoretical nature.

Psy 602 Comparative Psychology 3 credits

A comprehensive examination and synthesis

of the principles, concept and findings of ethology and comparative psychology ; similarities and differences in theories, methods and research findings related to such basic psychological problems.

Psy 625 Piaget's Theory 3 credits

Biography of Piaget, intellectual organization and adaptation, cognitive development and other factors, cognitive development of Piaget : the sensory-motor period, the period of preoperational thought, the period of concrete operations and the period of logical operations ; development of thinking in adolescence ; summary and applications.

Psy 633 Theories of Personality 3 credits

A review of theories of personality (emphasizing structure and dynamic) such as Freud's Psychoanalytic theory, social psychological theory, Murrey's Personology, Lewin's field theory, organismic theory, factor theories, Rogers' self theory, Skinner's Stimulus Response theory ; application is validated by observational accounts, case studies and cross-cultural research.

Psy 634 Mental Hygiene 3 credits

A general course designed to give an understanding of the healthy personality throughout different stages of life, exploration (of) fundamental factors in human adjustment with emphasis upon the prevention of inadequate adjustment and upon the process by which maladjusted individuals may be restored to normal living.

Psy 635 Psychology of Deviant Behavior 3 credits

The meaning of normality ; cultural and historical aspects of the problem ; the role of anxiety ; the etiology of mental disturbances ;

classification of disorders ; experimental approaches to the study of disorders ; preventive approaches relating to mental health, mental subnormality regarding cognitive deficit ; origins of mental deficiency.

Psy 673 Seminar on Contributions of Buddhism to Value Systems 3 credits

A review of principles and concepts in Buddhism; discussion of current issues or problems in Thai society emphasizing on an analysis of societal values.

Psy 675 Behavioral Approcah to School Curriculum 3 credits

Behavioral foundation pertinent to existing social problems for curriculum research and development ; practicum in curriculum research and development in different levels of education ; the behavioral foundation emphasizing economics, political science, sociology, psychology, etc.

Psy 677 Psychology of Exceptional Children 3 credits

Criteria for determining exceptionality, and a survey of the major areas of exceptionality ; the individuality of each child who is exceptional which requires special attention from parents as well as teachers ; some techniques for diagnosing specific difficulties ; recent trends in the education of exceptional children with specific reference to special education in Thailand.

Psy 680 Sensitivity Training 3 credits

Self-awareness and clinical sennitivity through involvement as a participant observers in the development and continuing functioning of a small group emphasizing emergent styles of interaction in roles, both explicit and implicit.

Psy 691 Independent study 3 credits
An intensive study of literature of special topics conducted under supervision of a faculty member. (Consent of instructor)

Stat 518 Factor Analysis 3 credits
Mathematical introduction : matrices, determinant, scalar products,matrix inversion, Eigen vector and transformation ; history of factor theory : Spearman's Two-factor theory, Multiple-factor theory ; correlation matrix and the factor matrix ; geometric interpretation of factors ; extraction of factors by the Centroid Method ; rotation of reference axes ; simple structure, rotation to psychological meaning ; interpretation of factors ; estimation of factors in persons ; some special problem in factor analysis ; applications of factor analysis.

C Sc 531 Digital Computer Programming 3 credits
Mechanized data processing concepts ; analog vs. digital computers ; history and development of digital computers ; punched cards ; Hollerith's code ; digital computer system ; concept FORTRAN, or basic language programming, arithmetic statements ; control statements ; input ; subroutines ; statistical procedures : multivariate analysis, analysis of variance, chi-square, matrix procedures.

C Sc 532 Introducation to computing 3 credits
Computer structure & construction of computer programs ; use of a specific programming language to solve problems over a wide range of applications of a digital computer ; the applications selected from problem areas in which no sophisticated knowledge of mathematics is required.

Social Psychology

Objectives

To prepare scholars in social psychology who are able to teach and research either for professional growth or for a decisive resolution of educational and social problems relating to the field.

Structure of the program

Requirements

1. Foundations of Education Area
   12 credit hours
2. Major Area not less than 27 credit hours
   2.1 Required Courses 21 credit hours
   2.2 Elective Courses not less than
   6 credit hours
3. Free Elective Area not less than
   3 credit hours
4. Thesis 6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to behavioal science
1 refers to social psychology
2 refers to developmental psychology
3 refers to personality psychology
4 refers to quantitative psychology
5 refers to experimental psychology
6 refers to physiological psychology
7 refers to educational psychology
8 refers to applied psychology
9 refers to independent study

Compulsory

Psy 501	General Psychology	3 Credits
Psy 511	Introduction to Social Psychology	3 Credits
Psy 513	Advanced Social Psychology	3 Credits
Psy 514	Psychology of Attitudes	3 Credits

Psy 517	Group Psychology	3 Credits
Psy 617	Seminar in Social Psychology	3 Credits
Stat 515	Statistical Designs of Experiments (Prerequisite : Stat 513 Inferential Statistics)	3 Credits

Elective

Psy 515	Organizational Behavior	3 Credits
Psy 516	Conflict and Conflict Resolution	3 Credits
Psy 518	Research Methods in Social Psychology	3 Credits
Psy 613	Control of Human Behavior	3 Credits
Psy 616	Seminar in Social Problems	3 Credits

Free Elective

Psy 519	Psycho-Social Development	3 Credits
Psy 521	Developmental Psychology	3 Credits
Psy 553	Psychology of Learning	3 Credits
Psy 554	Motivation	3 Credits
Psy 555	Sensory Psychology	3 Credits
Psy 556	Psychology of Perception	3 Credits
Psy 557	The Emotions	3 Credits
Psy 602	Comparative Psychology	3 Credits
Psy 611	Social Psychology in Industry	3 Credits
Psy 615	Social Psychology in Mental Health	3 Credits
Psy 633	Theories of Personality	3 Credits
Psy 635	Psychology of Deviant Behavior	3 Credits
Psy 673	Seminar on Contribution of Buddhism to Value System	3 Credits
Psy 677	Psychology of Exceptional Children	3 Credits
Psy 680	Sensitivity Training	3 Credits
Psy 691	Independent Study	3 Credits
Stat 518	Factor Analysis	3 Credits
C Sc 531	Digital Computer Programming	3 Credts
C Sc 532	Introduction to Computing	3 Credits

Course Description

Psy 501 General Psychology 3 credits

(See page 98)

Psy 511 Introduction to Social Psychology 3 credits
Brief reference to historical origin and development of social psychology : relationship of philosophical and sociological thinking ; introduction to major divisions in social psychology : socialization, motivation, interpersonal perception and influence, attitude, language, and communication, leadership, group structure and behavior etc.; presentation of concepts, theories and classical experiments.

Psy 513 Advanced Social Psychlology 3 credits
Intensive considerations of selected topics not being covered in other advanced courses in social psychology ; emphasis on newly developed areas of social psychology such as social facilitation, bystander intervention, imitation, conformity, altruism, aggression, etc.

Psy 514 Psychology of Attitudes 3 credits
A detailed consideration of the topic of attitude formation and change, and attitude measurements, emphasizing theories and their related experimental findings ; analysis of factors related to the effectiveness of communication and persuasion in the light of experimental evidence ; various strategies and techniques of persuasion.

Psy 517 Group Psychology 3 credits
Discussion of group's characteristics such as group composition, communication network, group size, seating arrangement,task and leadership ect. ; a review of mutual influences between group's characteristics and the products of group interaction such as group atmosphere, group productivity and effectiveness of the

leaders ; early and current theories of group considered together with the methods of studying behavior in group.

Psy 617 Seminar in Social Psychology 3 credits
Systematic study of current topics in the field of social psychology ; critical review of recent research and theory concerning selected social psychology problems.

Stat 515 Statistical Designs of Experiments 3 credits
(See page 99)

Psy 515 Organizational Behavior 3 credits
A study of principles of organizational behavior ; their application to higher education administration in Thailand based on behavioral science and/or other related scientific approaches.

Psy 516 Conflict and Conflict Resolution 3 credits
(See page 101)

Psy 518 Research Methods in Social Psychology
3 credits
One hour lecture and two two-hour laboratory periods per week. A lecture-and-laboratory course dealing with methods of studying behavior in the social context ; topics including social perception, interaction in small groups, communication and attitude change ; techniques involved in laboratory experimentation, field experimentation, and attitude scale contruction; training in writing experimental reports ; practical experiences acquired through individual and group projects.

Psy 613 Control of Human Behavior 3 credits

Emphasis on research on the effectiveness of methods such as psychotherapy, programmed learning, brainwashing, teaching, and propaganda procedures ; discussion in ethical and moral issues related to the control of human behavior.

Psy 616 Seminar in Social Problem 3 credits
Critical discussions of current social problems applying recent research study and theories as guidelines to solve these problems.

Psy 519 Psycho-Social Development : Theories and Researches 3 Credits
(See page 101)

Psy 521 Developmental Psychology 3 credits
(See page 101)

Psy 553 Psychology of Learning 3 credits
Examination and discussion of current research, and of theoretical and experimental problems in the area of learning and behavior modification; reinforcement, extinction, motivation, generalization, discrimination, retention and forgetting.

Psy 554 Motivation 3 credits
(See page 102)

Psy 555 Sensory psychology 3 credits
(See page 102)

Psy 556 Psychology of Perception 3 credits
(See page 102)

Psy 557 The Emotion 3 credits
(See page 102)

Psy 602 Comparative Psychology 3 credits
(See page 102)

Psy 611 Social Psychology in Industry 3 credits
Application of psychological principles and

research methodology to human problems in industry including personnel selection and appraisal, motivation and work leadership, and human performance.

Psy 615 Social Psychology in Mental Health 3 credits
An application of concepts, theories, and research findings in social psychology to the problems of social adjustment and the prevention of inadequate adjustment; the interplay of social pressures and individual personality producing situational stress and the need to conform.

Psy 633 Theories of Personality 3 credits
(See page 103)

Psy 635 Psychology of Deviant Behavior 3 credits
(See page 103)

Psy 673 Seminar on Contributions of Buddhism to Value Systems 3 credits
(See page 104)

Psy 677 Psychology of Exceptional Children 3 credits
(See page 104)

Psy 680 Sensitivity Training 3 credits
(See page 104)

Psy 691 Independent Study 3 credits
(See page 105)

Stat 518 Factor Analysis 3 credits
(See page 105)

C Sc 531 Digital Computer Programming 3 credits
(See page 105)

C Sc 532 Introduction to Computing 3 credits
(See page 105)

Experimental Psychology

Objectives

To prepare scholars in experimental psychology who are able to teach and research either for professional growth or for a decisive relating to the field resolution of educational and social problems.

Structure of the Program

Requirements

1. Foundations of Educatic	rea	12 credit hours
2. Major Area	less than	27 credit hours
2.1 Required Courses		21 credit hours
2.2 Elective Courses	not less than	6 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to behavioral science
1 refers to social psychology
2 refers to developmental psychology
3 refers to personality psychology
4 refers to quantitative psychology
5 refers to experimental psychology
6 refers to physiological psychology
7 refers to educational psychology
8 refers to applied psychology
9 refers to independent study

Compulsory

Psy 501	General Psychology	3 credits
Psy 551	Introduction to Experimental Psychology	3 credits
Psy 553	Psychology of Learning	3 credits
Psy 561	Physiological Psychology	3 credits
Psy 655	Advanced Experimental Psychology	3 credits
Psy 658	Seminar in Experimental Psychology	3 credits
Stat 515	Statistical Designs of Experiments	3 credits

(Prerequisite : Stat. 503)

Elective

Psy 554	Motivation	3 credits
Psy 556	Psychology of perception	3 credits
Psy 557	The Emotions	3 credits
Psy 652	Perception Sensory Process	3 credits
Psy 656	Measurement Theory and Psychometric	3 credits
Psy 657	Laporatory Techniques in Experimental Psychology	3 credits

Freet Elective

Psy 505	Differential Psychology	3 credits
Psy 602	Comparative Psychology	3 credits
Psy 647	Mathematical Psychology	3 credits
Psy 651	Behavior Theories	3 credits
Psy 653	Advanced Sensation and Perception	3 credits
Psy 654	Advanced Motivation and Emotion	3 credits
Psy 659	Animal Behavior	3 credits
Psy 662	Advanced Physiological Psychology	3 credits
Psy 680	Sensitivity Training	3 credits
Psy 691	Independent Study	3 credits
Stat 518	Factor Analysis	3 credits
Stat 646	Quantitative Methods	3 credits
C Sc 531	Digital Computer Programming	3 credits
C Sc 532	Introduction to Computing	3 credits

Course Description

Psy 501 General Psychology 3 credits
(See page 98)

Psy 551 Introduction to Experimental Psychology 3 credits

A general survey in experimental methodologies and logics, scientific concepts, measurements, psycho- physical methods and psychological scaling; experiments in laboratory environment in motivation, learning and perception.

Psy 553 Psychology of Learning 3 credits
(See page 110)

Psy 561 Physiological Psychology 3 credits
Brain and behavior focusing on neural and endocrinic mechanisms operative in the control and modification of behavior; sensory mechanisms from the receptors to cerebral cortex; anatomy of the nervous system; neurological phenomena associated with several sets of behavior.

Psy 655 Advanced Experimental Psychology 3 credits
Emphasis on the formulation of research problems, identifications of the problems, formulation of testable hypotheses, identification and control of relevant variables, presentation and interpretation of data; individual research projects

Psy 658 Seminar in Experimental Psychology 3 credits
Systematic study of current topics in the field of experimental psychology; critical review of recent research and theories concerning selected experimental problems.

Stat 515 Statistical Designs of Experiment 3 credits
Fundamental concepts and basic designs : nature and purpose of experiments, measure of precision, tesing hypothesis, good design, basic designs, types of error, principle of randomization, chi-square, t, and F distributions, degrees of freedom, limitation of t-test, analysis of variance : the test of overall null hypothesis, mean square ratio, assumptions underlying F-test, simple randomized design, analysis of variance in double-entry tables : analysis of total sum of squares into components, computational procedure, meaning of interaction, treatment X levels designs,

repeated measurement design, factorial design, replication design, split-plots design.

Psy 554 Motivation 3 credits
(See page 102)

Psy 556 Psychology of Perception 3 credits
(See page 102)

Psy 557 The Emotions 3 credits
(See page 102)

Psy 652 Sensory Processes 3 credits
A basic understanding of human senses; relation between energy and receptors; electrophysiology and sensory theories; vision, audition, taste, smell, kinesthesis; measurements of energy and sensations.

Psy 656 Measurement Theory and Psychometric 3 credits
Measurement theory involved in the construction and evaluation of psychological measuring instruments emphasizing on scaling methods and their use in psychological research and evaluation.

Psy 657 Laboratory Techniques in Experimental Psychology 3 credits
Psychological experiments in laboratory environments; designs and constructions of apparatus and instruments used in experiments; memmory drum, pursuit roter, Skinner box; electronic concepts and devices; relay circuit, times revitching circuits.

Psy 505 Differential Psychology 3 credits
Individual differences : individual differences in intelligence, school achievement, special aptitudes and cognitive styles; group differences : sex differences, age differences, race differences and social class differences;

factor producing differences : hereditary and environmental factors.

Psy 602 Comparative Psychology 3 credits
A comprehensive examination and synthesis of the principles, concept and findings of ethology and comparative psychology; similarities and differences in theories, methods and research findings related to such basic psychological problems.

Psy 647 Mathematical Psychology 3 credits
A survey of mathematical theories of choice behavior, decision making, psychophysical judgements, utility and motivation, learning and concept formation.

Psy 651 Behavior Theories 3 credits
An advanced course in exploration of contemporary theories in learning, motivation, perception, memmory, choice behavior and decision making; simulation of mathematical models of behavior on a computer in conjunction with empirical experimentation.

Psy 653 Advanced Sensation and Perception 3 credits
Consideration of experimental methodology and recent findings in the areas of sensation and perception, laboratory work and or individual research projects.

Psy 654 Advanced Motivation and Emotions 3 credits
Consideration of experimental methodology and recent findings in areas of motivation and emotion; laboratory work and/or individual research projects.

Psy 659 Animal Behavior 3 credits
A comparative and phylogenetic approach to the study of behavior, with special emphasis on sensory processes, instinctive behavior, the genetics of behavior.

Psy 622 Advanced Physiological Psychology 3 credits
Neural mechanism of behavior emphasizing information-processing systems of the brain; discussions in the areas of sensory, learning, and memory functions.

Psy 680 Sensitivity Training 3 credits
Self-awareness and clinical sensitivity through involvement as a participant observer in the development and continuing function of a small group emphasizing emergent styles of interaction in roles, both explicit and implicit.

Psy 691 Independents Study 3 credits
An intensive study of literature of special topics conducted under supervision of a faculty member. (Consent of instructor)

Stat 518 Factor Analysis 3 credits
(See page 105)

Stat 646 Quantitative Methods 3 credits
Basic mathematical concepts : points, constants, variables sets, mapping, relations, functions; linear, logarithmic, complex functions; calculus : differentials integral; probability density functions : binomial, poisson, normal, x^2 , t, F; goodness of fit and trends differences.

C Sc 531 Digital Computer Programming 3 credits
(See page 105)

C Sc 532 Introduction to computing 3 credits
(See page 105)

Educational Psychology

Objectives

To prepare scholars in educational psychology who are able to teach and research either for professional growth or for a decisive resolution of educational and social problems relating to the field.

Structure of the Program

Requirements

1.	Foundations of Education Area		12 credit hours
2.	Major Area		27 credit hours
	2.1 Required Courses	not less than	20 credit hours
	2.2 Elective Courses	not less than	7 credit hours
3.	Free Elective Area	not less than	3 credit hours
4.	Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to behavioral science
1 refers to social psychology
2 refers to developmental psychology
3 refers to personality psychology
4 refers to quantitative psychology
5 refers to experimental psychology
6 refers to physiological psychology
7 refers to educational psychology
8 refers to applied psychology
9 refers to independent study

Compulsory

Ed Psych 511	Human Learning and Motivation	2 credits
Ed Psych 551	Tools and Techniques of Psychoeducational Assessment	3 credits
Ed Psych 512	Behavior Modification	2 credits
Ed Psych 513	Mental Health of School Children	2 credits
Ed Psych 641	Seminar on Learning and Teaching Problems	3 credits
Ed Psych 642	Seminar on Current Issues in Educational Psychology	3 credits

Ed Psych 514	Personality and Education	3 credits
Ed Psych 611	Group Behavior	2 credits

Elective (7 credits at least)

Guid 533	Guidance in Secondary School	3 credits
Psy 505	Differential Psychology	3 credits
Psy 519	Psycho - Social Development	3 credits
Psy 523	Child Psychology	3 credits
Psy 524	Adolescent Psychology	3 credits
Psy 525	Theories of Child Development	3 credits
Psy 625	Piaget's Theory	3 credits
Psy 627	Clinical Child Psychology	3 credits
Psy 635	Psychology of Deviant Behavior	3 credits
Ed Psych 652	Research Method in Educational Psychology	2 credits
Psy 677	Psychology of Exceptional Children	3 credits

Course Description

Ed Psych 511 Human Learning and Motivation 2 credits

The meaning and nature of learning; learning process; theories of learning : stimulus-response association, and the field theory; transfer of learning; factors of learning; motivation and learning; rewards and punishment; human nature; human needs; emotion and adjustment; learning and behavior change; evaluation of learning.

Ed Psych 551 Tools and Techniques of Psychoeducational Assessment 3 credits

Survey of methods, techniques and instruments for measuring individual differences in behavior, intelligence, etc; some methods of test construction; analysis of standardized tests; criteria for evaluating and selecting psychological tests; values and limitations of tests; laboratory experience with psychoeducational tests.

Ed Psych 512 Behavior Modification 2 credits

A survey of approaches to behavior change in an attempt to interpret and reconcile them within a reinforcement - learning model; a humanistic behavior modification system including factors of attention, emotion, communication, and cognition; the application of these approaches within the educational system.

Ed Psych 513 Mental Health of School Children 2 credits
The factors involved in child development (preschool period, early school years, intermediate years, adolescence) and the problems of each period; the preventive and remedial phases of mental health; emphasis on factors favoring prevention and resolution of behavior difficulties and evaluation of school programs on basis of their contribution to mental health.

Ed Psych 641 Seminar on Learning and Teaching problems 3 credits
Skills in the psychological analysis of educational problems ; some specific psychological approaches ; learning and teaching problems from various psychological perspectives ; experiment with alternate teaching approaches to foster learning in children experiencing difficulty.

Ed Psych 642 Seminar on Current Issues in Educational Psychology 3 credits
Ideas involved in current issues in educational psychology ; evaluation of present knowledge and methodological problems in psychoeducational research ; discussion pertaining to pertinent issues of educational problems.

Ed Psych 514 Personality and Education 3 credits
Personlity theory and research related to instruction, classroom management, and counseling ; principles of personality develop-

ment, behavior change of various personality theories with reference to educational applications.

Ed Psych 611 Group Behavior 2 credits
Group research and theory focusing on investigation of interpersonal relationship ; communication structures ; status and power relations ; role differentiation ; group uniformity ; group influence on individual's behavior and problem solving behavior including discussion of a group acting as a mob.

Guid 533 Guidance in Secondary School 3 credits
The functions of guidance in secondary school ; organization and administration of the pupil personnel services emphasising on student's life adjustment and career development, methods of identifying guidance needs of secondary school students ; an examination of current guidance programs and problems in schools.

Psy 505 Differential Psychology 3 credits
(See page 101)

Psy 519 Psycho-Social Development : Theories and Researches 3 credits
(See page 101)

Psy 523 Child Psychology 3 credits
Orientation to developmental approach, the begining of life, biological inheritance, prenatal development ; the newborn infant, behavior of the newborn, motor behavior ; physical development, stages of development, language and the function of speech in early childhood ; emotional development, emotional pattern of anger and fear, the basis of emotional well-being in early childhood, social development, early forms of social behavior, social behavior

toward age peers ; intellectual development perceptual and adaptive behavior, child's interaction with his environment.

Psy 524 Adolescent Psychology 3 cresits
Biological, psychological and sociological perspectives of late childhood to early adulthood emphasizing on such issues as the role of ideology in identity formation, inter and intrasociety variants, opportunity for observation and interviewing.

Psy 525 Theories of Child Development 3 Credits
A survey of basic systematic positions in current theories of child development such as social learning theory (S-R), field theory (Kurt Lewin), psychoanalytic theory of development (Sigmund Freud), the organismic developmental theory (Heinz Werner), selected empirical research area. areas.

Psy 625 Piaget's Theory 3 credits
(See page 103)

Psy 627 Clinical Child Psychology 3 credits
Essential conditions in child psycho-therapy especially the therapeutic process with the normal child; the handicapped child the disturbod child and the creative child ; a therapeutic approach and the counseling with parents of problemed children ; a thereapist's role in the school settings and in the child guidance clinic.

Psy 635 Psychology of Deviant Behavior 3 credits
(See page 103)

Ed Psych 652 Seminar in Research Methods in Educational Psychology 2 credits
Research strategies reflecting some recent developments in psychological theory and research ; discussion of alternative strategies

of research where distribution statistics would be inappropriate ; analyses of autobiographical and biographical materials, case studies, observation and other types of ideographic studies with a view to their potential contribution to educational research and methodology.

Psy 677 Psychology of Exception Children 2 credits

(See page 104)

Library Science

Objectives

1. To produce efficient librarians who are able to administer and manage various types of libraries effectively.
2. To provide professional preparation for Library Science instructors
3. To promote ability to do research work in the field.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Courses		12 - 18 credit hours
2.2 Elective Courses		6 - 16 credit hours
2.3 Practicum		3 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to foundations and philosophy
1 refers to techniques
2 refers to activities and public relations
3 refers to administration and services
4 refers to reference and bibliography
5 refers to practicum and student teaching

Compulsory 12 - 18 credits from the following courses :

L SC 501	Development of Libraries and Information Centers	2 credits
L Sc 510	Selection and Acquisition of Educational Materials	2 Credits
L Sc 511	Bibliographic Organization and Control I	3 credits
L Sc 512	Bibliographic Organization and Control II	3 credits
L Sc 513	Organization and Control of Non-Print Materials	2 credits
L Sc 514	Research Methods in Library and Information Sciences	2 credits

L Sc 540	Reference and Information Services	2 credits
L Sc 631	Seminar in Library and Information Services	2 credits

Elective 6 - 16 credits from the following groups of courses :

Group 1 University Libraries Required L. Sc. 634.

L Sc 502	Education for Library and Information Sciences	3 credits
L Sc 515	Educational Media in the Library and Information Center	2 credits
L Sc 541	Bibliography : Theory and Techniques	2 credits
L Ce 611	Introduction to Information Science	3 credits
L Sc 612	Information Storage and Retrieval	3 credits
L Sc 613	Quantitative Methods	2 credits
L Sc 614	Library Effectiveness	2 credits
L Sc 615	Library Automation	3 credits
L Sc 616	Classification	3 credits
L Sc 632	Systems Analysis in Library	3 credits
L Sc 634	College and University Libraries	3 credits
L Sc 636	Library and Information Sources for Research	2 credits
L Sc 638	Independent Study	2 - 3 credits
L Sc 640	Information Sources and Services in the Humanities	3 credits
L Sc 641	Information Sources and Services in the Social Sciences	3 credits
L Sc 642	Information Sources and Services in the Sciences and Technology	3 credits
L Sc 643	Information Sources and Services in Education	3 credits
L Sc 644	Information Sources in Buddism	3 credits
L Sc 647	Government Publications	3 credits

This group takes only one course out of L. Sc. 640, L. Sc. 641,

This group takes only one course out of L. Sc. 640, L. Sc. 641,

L. Sc. 642.

Group 2 School Libraries Required L. Sc. 633.

L Sc 515	Educational Media in Library and Information	

	Center	2 credits
L Sc 542	Indexing and Abstracting	2 credits
L Sc 614	Library Effectiveness	2 credits
L Sc 620	Story Telling	2 credits
L Sc 621	Reading Guidance for Children and Young Adults	2 credits
L Sc 633	The School Libraries	3 credits
L Sc 638	Independent Study	2 - 3 credits
L Sc 643	Information Sources and Services in Education	3 credits
L Sc 645	Library Materials and Services for Children	3 credits
L Sc 646	Library Materials and Services for Young Adults	3 credits
L Sc 647	Government Publications	3 credits

Group 3 Public Libraries Required L. Sc. 635.

L Sc 503	The Library and Information Center in the Community	2 credits
L Sc 515	Educational Media in Library and Information Center	2 credits
L Sc 542	Indexing and Abstracting	2 credits
L Sc 614	Library Effectiveness	2 credits
L Sc 620	Story Telling	2 credits
L Sc 621	Reading Guidance for Children and Young Adults	2 credits
L Sc 622	Adult Reading	2 credits
L Sc 635	The Public Library	3 credits
L Sc 638	Independent Study	2 - 3 credits
L Sc 639	Local Educational and Cultural Materials	2 credits
L Sc 644	Information Sources in Buddism	3 credits
L Sc 645	Library Materials and Services for Children	3 credits
L Sc 646	Library Materials and Services for Young Adults	3 credits
L Sc 647	Government Publications	3 credits

L Sc 650 Practicum in Library and Information Center 3 credits

Course Description

L Sc 501 Development of Libraries and Information Center 3 credits

A study of development of libraries and information centers and their roles as cultural and educational institutions in a modern society, types of libraries, services and new information media.

L Sc 510 Selection and Acquisition of Educational Materials 2 credits

Evaluation methods, selecting, acquiring and controlling of educational and informational materials.

L Sc 511 Bibliographic Organization and Control I 3 credits

The role of cataloging and classification in the control of library materials: descriptive cataloging and subject cataloging of books; the card catalog (types, forms, arrangement and maintenance); Dewey Decimal classification, book numbers.

L Sc 512 Bibliographic Organization and Control II 3 credits

A Study of Library of Congress, Bliss, UDC, Colon Classification Schemes and other classification schemes; advanced cataloging and classification involving detailed descriptive cataloging of special materials such as serials, manuscripts and other materials, card reproduction, use of printed cards, management of cataloging and processing unit.

L Sc 513 Organization and Control of Non - Print Materials 2 credits

The role of non - print material in library

services; cataloging and classification of non - print materials; emphasis is on storage, dissemination, and maintenance.

L Sc 514 Research Methods in Library and Information Sciences 2 credits
Methods and techniques of research in library and information sciences, interpretation of data and implications for improvement of library information processes and services, review of research literature in the field.

L Sc 540 Reference and Information Services 2 credits
History and principles of reference and information services; survey of sources including determining reference sources and services. (required by Thai readers)

L Sc 631 Seminar in Library and Information Services 2 credits
A study of problems and trends in a library and an information center.

Major:

Group 1 University Libraries

L Sc 502 Education for Library and Information Sciences 3 credits
A study to history, development, trends and problems of education for library and information sciences in Thailand and abroad, including philosophy, principles, program planning, teaching/learning methods, supporting resources.

L Sc 515 Educational Media in the library and Information Center 2 credits
A study of the role, methods and techniques of various types of media used for management, handling and programming to enhance the services of a library and information center.

L Sc 541 Bibliography : Theory and Technique 2 credits

A study of meaning, types, and values of bibliography techniques; criteria and methods in compiling, controlling, and servicing.

L Sc 611 Introduction of Information Science 3 credits

A survey of the subject content, orientations, methodologies and major works in information science. Emphasis is on surveying the research literature; the practical aspects of information retrievals, including the application of information technology.

L Sc 612 Information Storage and Retrieval 3 credits

Techniques and technologies in information storage and retrieval, including problems and surveys in the field.

L Sc 613 Quantitative Methods 2 credits

An introduction to statistical and bibliometric techniques with emphasis placed on the application of these techniques to library and information sciences.

L Sc 614 Library Effectiveness 2 credits

An introduction to the quantitative evaluation of library service to its users; a survey of appropriate methods for measuring the service and the use of these measures to improve service.

L Sc 615 Library Automation 3 credits

Structure and principles of operation of computers and auxiliary equipments; basics of FORTRAN programming language and file organization techniques; emphasis is on library applications including possibilities and limitations; analysis and design of computerized library management systems (acquisition, cataloging, circulation and information retrieval systems)

L Sc 616 Classification 3 credits
A subject analysis of the substantive contents of documents with emphasis on structure, theory of classification, and indexing; methodology for systematic display and organization.

L Sc 632 Systems Analysis in Library 3 credits
A systems approach to analyzing the problems of planning, controlling and improving sequences of operations.

L Sc 634 College and University Libraries 3 credits
A study of administration and services in college and university libraries.

L Sc 636 Library and Information Sources for Research 2 credits
Distribution and extent of library resources and information centers for advanced study and research; methods of surveying library facilities; library cooperation.

L Sc 638 Independent Study 2 - 3 credits
An independent study for an individual or a group of individuals. The course is open to persons who are interested in studying particular topics under the supervision of an instructor.

L Sc 640 Information Sources and services in the Humanities 3 credits
A survey and an examination of information sources in each discipline of the humanities. Emphasis is given to Thai and Southeast Asian source; a study of appropriate techniques for retrieval and dissemination of information, and generation of needed sources.

L Sc 641 Information Sources and Services in the Social Sciences 3 credits
A survey and an examination of information

sources in each discipline of the social sciences. Emphasis is given to information sources in Thailand and Southeast Asian countries; a study of appropriate techniques for retrieval and dissemination of information, and generation of required sources.

L Sc 642 Information Sources and Services in the Sciences and Technology 3 credits
A survey and an examination of information sources in each discipline of the sciences and technology. Emphasis is given to information sources in Thailand and Southeast Asian countries including a study of appropriate techniques for retrieval and dissemination of information, and generation of required sources.

L Sc 643 Information Sources and Services in Education 3 credits
A survey and an examination of various information sources in education with emphasis being placed on information sources in Thailand and other countries in Southeast Asia. Techniques in retrieving and dissemination of information are explored; including the generation of needed sources.

L Sc 644 Information Sources in Buddhism 3 credits
A study of information sources in Buddhism which appear in various forms such as manuscripts, inscriptions, and printed forms. A study also covers mural paintings and sculpture of both sects, Theravad and Acharavad. Appropriate techniques in retrieval and dissemination of such information are studied.

L Sc 647 Government Publication 3 credits
A study and an examination of publications issued by the Thai Government, state enterprises, governments of foreign countries and

international organizations. A study of methods and problems in acquisition, handling, and dissemination.

Group 2 School Libraries

L Sc 515 Educational Media in Library and Information Center 2 credits
(See group 1)

L Sc 542 Indexing and Abstracting 2 credits
A study of meaning, types, and values of indexing and abstracting ; criteria and methods in compiling, controlling and servicing.

L Sc 614 Library Effectiveness 2 credits
(See group 1)

L Sc 620 Story Telling 2 credits
Fundamental principles of the art of storytelling, planning of story hours, location of suitable materials for use, and the techniques of learning and presenting the story, a study and selection of literature appropriate for oral presentation to children of all ages.

L Sc 621 Reading Guidance for Children and Young Adults 2 credits
Psychology of reading, reading techniques and appropriate library programs and activities to assist children and young adults.

L Sc 633 The School Libraries 3 credits
Administration and services in a school library with an emphasis on integration of study and teaching and the use of library and information centers.

L Sc 638 Independent Study 2 - 3 credits
(See group 1)

L Sc 643 Information Sources and Services in Education 3 credits
(See group 1)

L Sc 645 Library Materials and Services for Children 3 credits

Historical development of children's books, types of children's literature and media, reading needs and interests of children of different ages around the world. Students are encouraged to write and translate children's book from foreign languages ; development of ability to select and acquire children's materials ; including provision of appropriate library programs and services.

L Sc 646 Library Materials and Services for Young Adults 3 credits

Historical development of young adults, kinds of literature for young adults, needs and interests of young adults around the world in reading. Ability in selection and acquisition of literature for young adults is emphasized ; including development of appropriate library information services.

L Sc 647 Government Publications 3 credits
(See group 1)

Group 3 Public Libraries

L Sc 503 The Library and Information Center in the Community 2 credits

A Study of roles of a library and information center in the community, their administration, services and inter-relationship.

L Sc 515 Educational Media in Library and Information Center 2 credits
(See group 1)

L Sc 542 Indexing and Abstracting 2 credits
(See group 1)

L Sc 614 Library Effectiveness 2 credits
(See group 1)

L Sc 620 Story Telling 2 credits
(See group 1)

L Sc 621 Reading Guidance for Children and Young Adults 2 credits
(See group 1)

L Sc 622 Adult Reading 2 credits
Contemporary adult books, reading interests, improving techniques and library activities for promoting reading habits and providing reading guidance, role of the library in literacy projects and adult education ; public library selection policies for educational materials.

L Sc 635 The Public Library 3 credits
A study of administration and services in different types of public libraries.

L Sc 638 Independent Study 2 - 3 credits
(See group 1)

L Sc 639 Local Educational and Cultural Materials 2 credits
A study of principles and methods in acquiring, handling and servicing local educational and cultural materials, including explaining indigenous ways of communication for wide information flow.

L Sc 644 Information Sources in Buddhism 3 credits
(See group 1)

L Sc 645 Library Materials and Services for Children 3 credits
(See group 1)

L Sc 646 Library Materials and Services for Young Adults 3 credits
(See group 1)

L Sc 647 Government Publications 3 credits
(See group 1)

L Sc 650 Practicum in Library and Information Center 3 credits

Supervised activities in a library and an information center to enhance the students' experience and awareness of the problem and operation.

THAI

Objectives

To provide professional preparation that will make the student knowledgeable and skillful in Thai, capable of teaching Thai efficiently, and able to fill leadership role in improving learning and teaching Thai.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Course in Language and Linguistics		14 credit hours
2.2 Required Courses in Literature		13 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

1 refers to language and linguistics

2 refers to literature

Compulsory

Language and Linguistics

Thai 511	Thai Structure (Prerequisite of Thai 513)	2 credits
Thai 512	Loan Words in Thai	2 credits
Thai 513	Applied Linguistics	2 credits
Thai 514	Interpretative Reading	2 credits
Thai 611	Prose and Poetry Writing	3 credits
Thai 612	Seminar in Thai Usage	3 credits

Literature

Thai 521	Literary Works in King Narai's and King Boromkod's Periods	2 credits
Thai 522	Literary Works in the Early Ratanakosin Period	2 credits

Thai 523	Literary Works between 2411 - 2475 B.E.	2 credits
Thai 524	Contemporary Literature	2 credits
Thai 621	Thai Folklore as Related to the Thai Language and Literature	2 credits
Thai 622	Seminar in Trends of Research Activities in Thai Language and Literature	3 credits

Course Description

Thai 511 Thai Structure 2 credits
Studies in Thai Phonology and Thai Syntax.

Thai 512 Loan Words in Thai 2 credits
A study of loan words in Thai and their past and present influence upon the Thai Language.

Thai 513 Applied Linguistics 2 credits
A review of current linguistic theories and their implication and application on language learning and teaching.

Thai 514 Interpretative Reading 2 credits
A practice in interpretative reading from selected texts to enable students to differentiate facts from opinions in those texts.

Thai 611 Prose and Poetry Writing 3 credits
The improving of writing skills in various forms of prose and certain types of poetry, according to individual aptitude and interest, the course also including criticism of the works.

Thai 612 Seminar in Thai Usage 3 credits
A study of usage and language problems occurring in society ; the solving of such problems based on linguistics and the language arts.

Thai 521 Literary Works in King Narai's and King Boromkod's Periods 2 credits
A study of the lives and important works of the poets of these periods, e.g. King Boromkod, Phra-Maharajkru, Sripraj, Phra-Srimahosod and Prince Dhamathibet.

Thai 522 Literary Works in the Early Ratanakosin Period 2 credits

A study of the works of poets in the reigns of King Rama I, Rama II, Rama III, with an emphasis on certain outstanding figures, the influence on their works ; and a comparative study of their matrical forms, diction, styles, thoughts and messages.

Thai 523 Literary Works between 2411 - 2475 B.E. 2 credits

A study of literature during this period in order to analyze changes in Thai literature caused by foreign influence.

Thai 524 Contemporary Literature 2 credits

A study of modern literary styles and techniques an analysis of the writers' purposes and the influences the writers exert on society and vice versa in order to develop the ability to evaluate critically in detail.

Thai 621 Thai Folklore as Related to the Thai Language and Literature 2 credits

An analysis of the value of folklore, e.g. folktales, proverbs, riddles etc. with an emphasis on the significance and relationship of folklore to language and literature.

Thai 622 Seminar in Trends of Research Activities in Thai Language and Literature 3 credits

A study of the methods and research works of important experts in Thai language and literature as examples for further practice in research.

English

Objectives

To provide professional preparation that will make the student knowledgeable and skillful in using English, having sufficient knowledge in linguistics and literature, capable of teaching English efficiently, and to inculcate aesthetic taste suitable for the educated

Structure of the Program

Requirements

1. Foundations of Education Area			12 credit hours
2. Major Area	not less than		27 credit hours
2.1 Required Major Courses			26 credit hours
2.1.1 Language			12 credit hours
2.1.2 Linguistics		6 or	8 credit hours
2.1.3 Literature		6 or	8 credit hours
2.2 Elective Courses			1 credit hours
3. Free Elective Area	not less than		3 credit hours
4. Thesis			6 credit hours

Meanings of the Middle Digits of the Code Numbers

Language and Literature

1 refers to reading
2 refers to writing
3 refers to oral
4 refers to literature
5 refers to translation

Linguistics

0 refers to general
1 refers to sound
2 refers to grammar
3 refers to teaching

Compulsory

Language 12 credits

Eng 511	Reading I	2 credits
Eng 521	Writing I	2 credits

Eng 522	Writing II	2 credits
Eng 531	Oral Comprehension and Expression	2 (4) credits
Eng 532	Oral Comprehension and Expression II	2 (4) credits
Eng 551	Translation I	2 credits

Linguistics 6 or 8 credits

L 501	An Outline of General Linguistics	2 credits
L 511	Studies in English Phonology	2 credits
L 621	Studies in English Syntax	2 credits
L 631	Seminar in the Teaching of English as a Foreign Language	2 credits

Literature 6 or 8 credits

Eng 541	English and American Prose and Poetry I	2 credits
Eng 542	European and American Drama I	2 credits
Eng 641	English and American Prose and Poetry II	2 credits
Eng 642	European and American Drama II	2 credits
Eng 611	Reading II	1 (2) credits
Eng 631	Oral Comprehension and Expression III	1 (2) credits
Eng 651	Translation II	1 (2) credits

Remarks : Students may select literature courses as electives

Course Description

Eng 511 Reading I 2 credits

Practice in reading for accurate information to enable students to read and understand texts in various fields of study and in making sensible assessments of materials read.

Eng 521 Writing I 2 credits

Practice in writing expository and argumentative essays, critical reviews, precis, and social and business letters.

Eng 522 Writing II 2 credits
Continuation of Writing I. Practice in procedures and techniques in writing research papers.

Eng 531 Oral Comprehension and Expression I 2 (4) credits
Oral practice will be given to students to enable them to understand conversations, talks and lectures made by native speakers of English, and to make intelligent responses with adequate confidence. Oral activities will include narrating and explaining what read and heard in an interesting way, interviewing for information, and giving reports.

Eng 532 Oral Comprehension and Expression II 2 (4) credits
Continuation of Oral Comprehension and Expression I. More listening practice will be given to enable students to understand lectures, speeches and debates in English. Students will practice elementary techniques for discussions and speech making from prepared outlines.

Eng 551 Translation I 2 credits
Intensive translation practice with emphasis on translation of English materials of various types into appropriate Thai.

Ling 501 An Outline of General Linguistics 2 credits
Background in language studies, linguistic theories relating to phonology, syntax and semantics.

Ling 511 Studies in English Phonology 2 credits
A study of the phonological English, a comparison of Thai and English sound features phonology.

Ling 621 Studies in English Syntax 2 credits

A study of English syntax and grammatical theories with an emphasis on grammatical analysis of English, and including a comparision a comparison of Thai and English structures.

Ling 631 Seminar in the Teaching of English as a Foreign Language 2 credits

A survey of methods of teaching English as a foreign language in Thailand ; implications of recent trends in research on foreign language learning and teaching.

Eng 541 English and American Prose and Poetry I 2 credits

A study of selected works by major English and American writers for a deeper understanding of life and thought, a critical insight into questions of historical and social significance and an exposure to various literary styles.

Eng 542 European Drama I

An introduction to drama. The nature of a play. The technique of playwriting, plot, characterization, setting, language, theme. Drama as literature. Drama in performance. A brief historical overview of the development of drama. Major schools ; major writers. An introduction to classical drama : major Greek and Roman plays and playwrights. The study of at least one Classical text.

Eng 641 English and American Prose and Poetry II 2 credits

A continuation of Major English and American Prose and Poetry I.

Eng 642 European Drama II

A study of the historical and social background. Medieval religious drama. The Elizabelthan Age ; the life and works of William Shakespeare, other major writers and works ; the detailed

study of texts. The Neo - classic period, : writers and works. Restoration comedy : writers and works. Romanticism and the decline into melodrama.

Eng 611 Reading II 1 (2) credit

Continuation of Reading I. Practice will be given to improve reading speed.

Eng 631 Oral Comprehension and Expression III 1 (2) credit

Continuation of Oral Comprehension and Expression II. Further listening practice will be given to enable students to understand speeches and commentaries in English from films and radio. Students will practice giving impromptu talks.

Eng 651 Translation II 1 (2) credits

Continuation of Translation I.

Eng 643 European and American Drama

A study of the historical and social background. The origins of modern drama. Naturalism and the emergence of the new theatre. Principal movements, writers and works of the Twentieth Century including the detailed study of serveral texts. Contemporary drama : radio T.V. and cinema. The modern theatre : staging production, performance, acting. Drama as art : the social, economic and political context.

Geography

Objectives

1. To provide professional preparation that will makes the student knowledgeable and capable in analysing and solving geographical data and problems and synthesizing of data.
2. To promote the student's ability to teach geographical knowledge at various educational levels.
3. To promote the student's capacity of doing research and study work relating to geography for more effective learning and teaching.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
1.1 Required Courses	not less than	9 credit hours
1.2 Elective Courses	not less than	3 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Courses	not less than	9 credit hours
2.2 Elective Courses	not less than	18 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

1 refers to techniques and methods
2 refers to physical geography
3 refers to population and economics
4 refers to regional geography

Compulsory

Geog 511	Advanced Map and Cartography	3 credits
Geog 523	Seminar in Physical Geography	3 credits
Geog 535	Seminar in Economic Geography	3 credits

Elective

Geog 512	Field Work and Research in Geography	3 credits
Geog 514	Quantitative Method in Economic Geography	3 credits

Geog 521	Advanced Meteorology and Climatology	3 credits
Geog 612	Remote Sensing	3 credits
Geog 622	Geomorphology	3 credits
Geog 624	Seminar in Conservation of Natural Resources.	3 credits
Geog 631	Seminar in Political Geography	3 credits
Geog 632	Advanced Geography of Settlemen	3 credits
Geog 633	Seminar in Geography of Population	3 credits
Geog 641	Research in Local Geography	3 credits
Geog 642	Seminar in Regional Geography	3 credits

Course Description

Geog 511 Advanced Map and Cartography 3 credits

A study of techniques and methods in compiling maps ; gathering statistical data for maps making ; preparing maps for reproduction ; emphasis on practical works and using map making tools ; techniques and methods of making maps from aerial photographs.

Geog 523 Seminar in Physical Geography 3 credits

A deep analytical study of the proceses and phenomena in physical geography concerning landforms, climates, soils, rocks and minerals utilizing data from researches, statistics and maps.

Geog 535 Seminar in Economic Geography 3 credits

A consideration of theoretical aspects of a spatial economic distributions and locational analysis ; emphasis on the current problems in economic geography of Thailand.

Geog 512 Field Work and Research in Geography 3 credits

A study of principles and methods of practical geography namely surveying, map making, techniques and methods in laboratory and on

surrounding areal surface ; geographical research to be included.

Geog 514 Quantitative Method in Economic Geography 3 credits

An introduction to statistical techniques applicable to solve geographical problems ; statistic methods and mathematics to be applied.

Geog 521 Advanced Meteorology and Climatology 3 credits

An advanced study of the principles of meteorology and climatology with an emphasis on tropical meteorology and climatology in various field of human activities ; special analysis of climatic conditions in Thailand ; selected topics in meteorology and climatology chosen to fit the individual needs of advanced students.

Geog 612 Remote Sensing 3 credits

A study of techniques in reading and interpreting imageries from satellites and methods of collecting geographical data from remote sensing imageries.

Geog 622 Geomorphology 3 credits

A study of processes involved in change of the earth's surface ; types of land - formation produced by the geomorphic processes ; emphasis on the utilization of quantitative method in the study of the geomorphic processes.

Geog 624 Seminar in Conservation of Natural Resources 3 credits

An analysis of problems of utilizing various resources of Thailand ; conservation techniques and the problems of public policy in their effective management for our economic and social development.

Geog 631 Seminar in Political Geography 3 credits

An investigation of theories and applications

of political problems ; selected topics on conditions determining power and polocies of individual state conflicting national policies or international institutions are analysed.

Geog 632 Advanced Geography of Settlement 3 credits

An advanced study of the nature of the settlements in both rural and urban areas ; an emphasis on problems of landuse ; distribution of settlements ; development and problems associated with settlements : data concerning settlements to be analysed.

Geog 633 Seminar in Geography of Population 3 credits

An analysis of world population pattern as revealed by demographic data ; an emphasis on a comparision of population density, growth, composition and migration with natural resources and state of technological advancement.

Geog 641 Research in Local Geography 3 credits

A graduate course in the theory and application of geographical field techniques to the analysis of areas culminating in individual reports on assigned problems in the field course area.

Geog 642 Seminar in Regional Geography 3 credits

A regional study of selected areas ; concepts and theories of regionalism are analysed and synthesized with an emphasis on data and sources applicable to the problems of the region.

History

Objectives

1. To effectivety train students to study and skilfully research in appropriate historical approach and techniques
2. To enable the students to apply the acquired knowledge in the improvement of learning and teaching of history at various educational levels.
3. To develop the desire to learn and encourage justifiable, critical judgement.

Sturcture of the Program

Requirements

1. Foundations of Education		12 credits hours
2. Major Area	not less than	27 credit hours
2.1 Require Courses		12 credit hours
2.2 Elective Courses		15 credit hours
(Asian History or Western History at least		12 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to general history
1 refers to Thai history
2 refers to Southeast Asian history
3 refers to East Asian history
4 refers to West Asian, South Asian, and Australasia history
5 refers to European history
6 refers to American history

Compulsory

Hist 511	Analytical Study in Early Thai History	4 credits
Hist 512	Seminar in Dhonluri and Early Ratanakosin Periods	2 credits
Hist 611	Seminar in Modern Thai History	3 credits
Hist 501	Historiography	3 credits

Elective

Asian History

Hist 533	Modern China	3 credits
Hist 534	Modern Japan	3 credits
Hist 641	Seminar in Asian History	3 credits
Hist 541	Indian Civilization	3 credits
Hist 542	History of the Middle East	3 credits
Hist 531	Seminar in East Asian Civilization	3 credits
Hist 621	Seminar in Early Southeast Asian History	3 credits
Hist 642	Western Impact in Asia	3 credits
Hist 643	Seminar in South Asia	3 credits
Hist 622	Seminar in Modern Southeast Asia	3 credits
Hist 543	Modern Australasia	3 credits

Western History

Hist 551	Renaissance and Reformation	3 credits
Hist 552	Liberalism and Nationalism in in the West	3 credits
Hist 651	History of Political Theories	3 credits
Hist 652	Seminar in Modern European History	3 credits
Hist 553	Economic History of Europe	3 credits
Hist 554	Western Political Systems	3 credits
Hist 562	American Social and Cultural History	3 credits
Hist 555	The Making of Modern Russia	3 credits
Hist 556	The Making of Modern Britain	3 credits
Hist 563	Foreign Policy of the United States	3 credits

General History

Hist 601	Seminar in History	3 credits
Hist 602	Directed Readings in History	3 credits

Course Description

Hist 511 Analytical Study in Early Thai History 4 credits

A study of problems, ideas, hypotheses, and historical documents concerning the Thai people from the early until the end of Ayudhaya periods emphasizing on the use of documents, historical sources and others with the aim of creating a sound understanding of Thai culture.

Hist 512 Seminar in Dhonburi and Early Ratanakosin Periods 2 credits

A study of problems and new though dealing with early Thai history until the end of King Rama III ; an analytical study will be made from using both local and foreign documents (from microfilms) in order to develop a better understanding required for a higher research in Thai nistory.

Hist 611 Seminar in Modern Thai History 3 credits

A study of problems and ideas in Thai history from the reign of King Rama IV when modernization began. Emphasis is made on the use of both local and foreign documents (from microfilms) to analyze various problems as a foundation of an advanced res arch in Thai history.

Hist 501 Historiography 3 credits

A study of historical writing methods, important historical thoughts, philosophy of history, historical sources and documents used in writing history ; a comparative study of the historical writing methods of the West, the East and the Thai historians.

Hist 533 Modern China 3 credits

An analytical study of the role, the importance and the changes in politics, government, society, economics and foreign policy of China from the time of the Opium War up to the present day.

Hist 534 Modern Japan 3 credits

An analytical study of the role, the importance and the changes in politics, government, society, economics and foreign policy of Japan from the period of the opening of the country (A.D. 1853) until the present day.

Hist 641 Seminar in Asian History 3 credits

A study of selected problems and thoughts in Asian history ; an analytical study of the attitudes and the impacts on the present and the future of Asia.

Hist 541 Indian Civilization 3 credits

An analytical study of the role and the importance of the civilizations of the Indus and the Ganges Valleys ; the early civilization of middle India ; Indian civilization under British rulers up to the present day with an emphasis on the effect of these civilizations on Asia and the world.

Hist 542 History of the Middle East 3 credits

An analytical study of the role and the importance of the Middle East from the Seventh Century until the present with an emphasis on political, social, cultural, philosophical and economic developments and their effect as the centre of interest of the world.

Hist 531 Seminar in East Asian Civilizations 3 credits

An analytical study of selected problems and ideas dealing with Chinese, Japanese and Korean civilizations from Prehistory until the

Seventeenth Century with an emphasis on politics, government, law, society, art, literature, religion, philosophy, science and inventions and their effect on the world.

Hist 621 Seminar in Early Southeast Asian History 3 credits

An analytical study of selected problems and topics of the Southeast Asian history with an emphasis on changes in politics, government, economics, society, culture, foreign affairs in Southeast Asian region from the early times to the Fifteenth century.

Hist 642 Western Impact in Asia 3 credits

An analytical study of Asian countries since the coming of the Europeans until World War II with emphasis on politics, society, economics, culture, religions and philosophy and their impact in various countries of this region.

Hist 643 Seminar in South Asia 3 credits

An analytical study of selected problems and ideas dealing with South Asia i.e. India, Sri Lanka, Pakistan and Bungladesh since the coming and the colonizing of the Europeans until the struggle for independence after World War II ; the rivalries among India and Pakistan and the establishment of Sri Lanka.

Hist 622 Seminar in Modern Southeast Asia 3 credits

A critical study of the role, the importance and changes of political, government, society, economics and foreign policies of major countries in Southeast Asia from the Nineteenth Century until the present day.

Hist 543 Modern Australasia 3 credits

An analytical study of the region in the South Pacific with an emphasis on Australia, New Zealand and New Guinea ; the coming of the

West ; the changes in the economic, political and social spheres and the role of this region in the world today.

Hist 511 Renaissance and Reformation 3 credits

An analytical study of the trend of thoughts and the importance of the periods of the Renaissance and the Reformation down to the Thirty Years' war. A stress is made on new thoughts in art, literature, politics, economics and science as the foundation of modern civilization ; new ideas in religions leading to the Reformation ; its impacts on economics, society and politics of Western Europe ; certain well-known works and primary source documents will be used.

Hist 552 Liberalism and Nationalism in the West 3 credits

A study of the origin and development of liberal and national movements in the Western, world, emphasizing on the changes and results of both movements on European history in the Nineteenth Century. Certain primary documents will be studies.

Hist 651 History of Political Theories 3 credits

A study of European political theories of noted philosophers from the Greek Period such as Plato, Aristotle down to those of modern time, for example Rousseau, Mill and Marx.

Hist 652 Seminar in Modern European History 3 credits

An analytical study of selected topics of the Eighteenth and Twentieth century European history with an emphasis on how economics, society and politics were related in various European countries. A study of the relationships between Europe and the outside-world.

(Certain topics will be selected by the lecturer each time.)

Hist 553 Economic History of Europe 3 credits

The growth of trade in the seventeenth and eighteenth centuries ; the growth of agriculture ; the enclosure in England ; the causes of the Industrial Revolution in England and France in the eighteenth and nineteenth centuries ; the industrial development in Germany at the end of the nineteenth century ; the economic competition among great powers at the end of the nineteenth century ; the growth of technology and its effects on the European social and political system.

Hist 554 Western Political System 3 credits

A comparative study of politics, education and government of England, France, Germany and the United States with a stress upon certain important aspects such as parliamentary system, presidential system, party system and the way politics are related to culture.

Hist 562 American Social and Cultural History 3 credits

A study of the foundation of American society ; European influences on religion, economics, education and philosophy ; the trends of social reforms since the war between the States ; the influence of mass culture on the standard of living of the American people and the problems in modern society.

Hist 555 The Making of Modern Russia 3 credits

The evolution of Russian politics, economics and society from the time of contact with the West in the reign of Peter the Great until the Revolutions in 1917 and formation of the USSR.

Hist 556 The Making of Modern Britain 3 credits

The evolution of British politics and government from the Tudor period until the present day, concentrating on parliamentary government, economic and social reforms leading to the welfare state of modern time.

Hist 563 Foreign Policy of the United States 3 credits

An analytical study of the relations of the United States with foreign countries since the War of Independence, emphasizing the role and responsibilities of the United States in the contemporary world.

Hist 601 Historical Seminar 3 credits

An analytical study of current events, contemporary research findings, or trends in politics, government, society, economics and foreign policy from the past until the present. The course will be arranged according to the students' requirements or according to the availability of visiting specialists to the Department.

Hist 602 Directed Readings in History 3 credits

An individual study and research. Students would be given an opportunity to choose their own topics for research under the supervision of staff members.

Chemistry

Objectives

1. To prepare capable teachers of chemistry up to the Bachelor's degree level.
2. To promote the ability to research in problems relating to chemistry teaching or chemistry.

Structure of the Program

Requirements

1. Foundations of Education Area 12 credit hours
2. Major Area Required courses not less than 27 credit hours
3. Free Elective Area not less than credit hours
4. Thesis 6 credit hours

Meanings of the Middle Digits of the Code Numbers

1 refers to inorganic chemistry
2 refers to organic chemistry
3 refers to physical chemistry
4 refers to biochemistry
5 refers to analysis or synthesis
6 refers to seminar or project
7 refers to laboratory

Chem 511	Advanced Inorganic Chemistry I	3 credits
Chem 512	Advanced Inorganic Chemistry II	3 credits
Chem 521	Advanced Organic Chemistry I	3 credits
Chem 621	Advanced Organic Chemistry II	3 credits
Chem 641	Advanced Biochemistry	3 credits
Chem 531	Advanced Physical Chemistry	3 credits
Chem 551	Instrumental Method of Analysis	3 credits
Chem 519	Advanced Inorganic and Physical Chemistry Laboratory	3 credits
Chem 692	Advanced Organic and Biochemistry Laboratory	3 (6) credits
Chem 661	Chemistry Seminar	2 (3) credits

Course Description

Chem 511 Advanced Inorganic Chemistry I 3 credits
The interpretation of chemical reactions in terms of energetics and structure ; discussion of structure, stability of complexions and energy ; the reactions of acid - base in nonaqueous solutions ; nuclear chemistry is discussed in both qualitative and quantitative analysis.

Chem 512 Advanced Inorganic Chemistry II 3 credits
This course includes symmetry in structure and some general rules of simple molecules and coordination compounds. The nature of chemical bonding is discussed in greater depth. Quantum theory relevant to electronic structure of diatomic and polyatomic molecules are discussed. The valence bond theory of metal - ligand bonding, X-ray methods in determination of structure are also included.

Chem 521 Advanced Organic Chemistry I 3 credits
An exploration of the hows and whys of organic reactions ; the mechanisms of various organic reactions, e.g. substitution, addition, elimination and rearrangement, and the principles behind them.

Chem 621 Advanced Organic Chemistry II 3 credits
Principles and techniques essential to the analyses and syntheses of natural products, e.g. acetogenin, phenylpropane, terpine, steroid and alkaloid including sources ; some important reactions and applications.

Chem 641 Advanced Biochemistry 3 credits
A study of the biochemistry of the nutrients in more details, particularly the structure of proteins and nucleic acid including their metabolism e.g. the protein synthesis and the nitrogen balance. The course deals with the

specific metabolism of carbohydrates, lipids and minerals. The biochemistry of the hormones and blood circulation are included.

Chem 531 Advanced Physical Chemistry 3 credits
A study of three component systems thermodynamics and chemical equilibrium in great detail including chemical kinetics e.g. chemical rate and order of reaction. Particles and wave theory are discussed in detail.

Chem 551 Instrumental Method of Analysis 3 credits
The elementariness of basic electronics is studied Principles and applications of instrumental method of analysis including visible, infra-red, ultraviolet, flame photometry, polarography, polarography, nuclear magnetic resonance spectroscopy, gas chromatography, amperometry, potentiometric titration, and pH meters are introduced.

Chem 591 Advanced Inorganic and
Physical Chemistry Laboratory 3 (6) credits
Finding solution to the problems in qualitative and quantitative analysis by using several methods and instruments as conductivity cell, potentiometer, spectrometer and tracer technique ; a study of lebelling compound by paper eletrophoresis ; determining the rate of chemical reaction in terms of conductivity.

Chem 692 Advanced Organic and Biochemistry
Laboratory 3 (6) credits
A study of the mechanistic pathways of organic reactions and the systematic examination of the variables involved. The techniques used include rate equilibium measurements, stereo isometism, spectroscopy and analytical methods besides preparative chemistry. In biochemical the determination of some

nutrients such as carbohydrates, proteins, lipids and some vitamins are included.

Chem 661 Chemistry Seminar 3 (6) credits

Reports and discussions of scientific discoveries derived from extensive reading of scientific journals and periodicals.

Biology

Objectives

To provide professional preparation that will make the student capable of teaching biology up to the Bachelor's degree level, and able to research in problems relating to biology teaching or biology

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Courses		10 credit hours
2.2 Elective Courses		17 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meaning of the Middle Digits of the Code Numbers

0 refers to cell - general biology
1 refers to botany
2 refers to zoology
3 refers to microbiology
4 refers to genetics and development
5 refers to physiology
6 refers to ecology
7 refers to applied biology
8 refers to biological techniques
9 refers to research

Compulsory

Bio 591	Special Problems in Biology	2 credits
Bio 691	Seminar in Biology	2 credits
Bio 301	Cell Biology	3 credits
Bio 342	Developmental Biology	3 (4) credits

Elective

Select courses with number 400 and up only.

Bio 361	Ecology	3 (4) credits
Bio 352	Cell Physiology	3 credits
Bio 371	Horticulture	3 (4) credits

Bio 372	Animal Husbandry	3 (4) credits
Bio 341	Genetics	3 (4) credits
Bio 411	Lower Plants	3 (4) credits
Bio 412	Vascular Plants	3 (4) credits
Bio 413	Plant Anatomy	3 (4) credits
Bio 414	Plant Taxonomy	3 (4) credits
Bio 421	Invertebrate Zoology	4 (5) credits
Bio 422	Vertebrate Zoology	4 (5) credits
Bio 423	Comparative Anatomy of Vertebrates	4 (5) credits
Bio 424	Entomology	3 (4) credits
Bio 425	Acarology	2 (3) credits
Bio 441	Advanced Genetics	3 credits
Bio 451	Plant Physiology	4 (5) credits
Bio 452	Animal Physiology	4 (5) credits
Bio 461	Plant Ecology	3 (4) credits
Bio 501	Limnology	3 (4) credits
Bio 502	Marine Biology	3 (4) credits
Bio 503	Radiobiology	3 credits
Bio 511	Plant Hormones	3 (4) credits
Bio 521	Ichthyology	2 (3) credits
Bio 522	Ornithology	2 (3) credits
Bio 523	Malacology	2 (3) credits
Bio 531	General Phycology	3 (4) credits
Bio 532	General Mycology	3 (4) credits
Bio 533	Protozoology	2 (3) credits
Bio 534	General Virology	2 (3) credits
Bio 535	Pathogenic Bacteriology	3 (4) credits
Bio 536	Immunology and Serology	3 (4) credits
Bio 571	Parasitology	3 (4) credits
Bio 572	Weed Biology	2 (3) credits
Bio 573	Tropical Postbiology	2 (3) credits
Bio 574	Plant Pathology	3 (4) credits
Bio 575	Economic Botany	3 (4) credits
Bio 581	Microtechniques	3 (6) credits

Course Description

Bio 591 Special Problems in Biology 2 credits
An individual research project.

Bio 691 Seminar in Biology 2 credits
Seminar in various topics of biology.

Bio 301 Cell Biology (Prereq. : chem 221 or chem 382 or equivalent.) 3 credits
A molecular approach to the study of structure and function of animal and plant cells.

Bio 342 Developmental Biology 3 (4) credits
Anatomy and physiology of developing tissues and organs.

Bio 361 Ecology 3 (4) credits
(Prerequisites : Bio. 211, Bio. 221)
The study of structures, functions, and the relationships of organisms in natural euvironment ; ecosystem ; forests, grassland, ponds, lakes, marine and ocean : components of ecosystem in relation to plants, animals, and man ; community, population ; energy flow and energy efficiency ; the use of natural resources ; air, water pollutions and the misused of natural environments
The course will emphasize theory , practice, and application in both the laboratory and field approaches in the hope that the students will be able to improve, prevent, and manipulate the natural environment for the betterment of their living.

Bio 352 Cell Physiology
(Prereq. : chem 221 or Chem 382 or equivalent.) 3 credits
A study of functional aspects of the cell ; cell environment, transportation across membrane, thermodynamics, macromolecules and their

metabolism, regutation of metabolism, photosynthesis, respiration, cell secretion, irritability, and contractility.

Bio 371 Horticulture 3 (4) credits
A study of the principles and practices employed in home and commercial production of fruits, vegetables, flowers and ornamental plants.

Bio 372 Animal Husbandry 3 (4) credits
Basic principles in raising of animals, topics on feeding, selection, breeding, sheltering, care, and protection.

Bio 341 Genetics 3 (4) credits
Basic principles of classical and molecular genetics; physical and chemical basis of heredity, fundamental concepts in population genetics and evolution

Bio 411 Lower Plants 3 (4) credits
A study of morphology, texonomy, ecology, phylogeny development, behavior, life history, and economic importance of the major plant groups excluding ferns gymnosperms and angiosperms, considerable attention on representative forms in Thailand.

Bio 412 Vascular Plants 3 (4) credits
A survey of the ferns, gymnosperms and flowering plants with an emphasis on their morphology, classification, ecology, evolution economic importances, identification, and relationship of families common in Thailand.

Bio 413 Plant Anatomy 3 (4)credits
A study of gross structure, organization and development of the plant body with emphasis on flowering plants.

Bio 414 Plant Taxonomy 3 (4) credits
A study of classification of plants ; principles of plant classification, history of plant classifi-

cation, literatures in plant taxonomy, systems of plant classification, concept of units of plant classification, problems in plant classification, variation and evolution in plants, plant geography, and current ideas of plant classification.

Bio 421 Invertebrate Zoology 4 (5) credits
A survey of the morphology, physiology, ecology and taxonomy of the invertebrates from Protozoa to lower Chordates; phylogenetic relationships, ecology and behavior and emphasized. Practical work includes dissection of the selected types, demonstration and field study.

Bio 422 Vertebrate Zoology (Registration is not allowed for those who have taken Bio. 423) 4 (5) credits
Forms, structures and functions of lower chordates and vetebrates including natural history of local species.

Bio 423 Comparative Anatomy of the Vertebrates (Registration is not allowed for those who have taken Bio. 422) 4 (5) credits
A comparative study of vertebrate body plan, tissues, organs and organ systems along the evolutionary line of phylogeny.

Bio 424 Entomology 3 (4) credits
A study of insects emphasising primarily on morphology, physiology, classification, distribution and economic importance; some aspects of collecting and preserving insects; application of insect control and rearing of insects.

Bio 425 Acarology 2 (3) credits
Study of mites and ticks in morphology physiology, distribution, collection and preserve

classification, economic importance, mite and tick control.

Bio 441 Advanced Genetics
(Prereq. : Bio. 341) 3 credits
A study of genetic principles beyond the level of Bio. 341.

Bio 451 Plant Physiology
(Prereq. : Bio. 351) 4 (5) credits
A study of living processes in higher plants with an emphasis on chemical constituents, water relations, mineral nutrition, photosynthesis, respiration, metabolism of organic compounds; growth and development as related to internal and environmental factors.

Bio 452 Animal Physiology
(Prereq. : Bio. 351) 4 (5) credits
The relationship between structure and function of animals, especially the vertebrates, is the primary consideration of this course. Special emphasis will be placed on nutrition, digestion excretion, endocrine system, blood circulation, respiration, muscle and nerve physiology, sensory organs, perception, and reproductive physiology,

Bio 461 Plant Ecology
(Prereq. : Bio. 361) 3 (4) credits
A general study of the relationship between plants and their environment.

Bio 501 Limnology (Prereq. : Bio. 361) 3 (4) credits
A study of physical, chemical, and biological environments of the in-land fresh water ponds and canals ; biological studies of aquatic plants and animals; relationship between the inhabitants and physico-chemical aspects of the environments.

Bio 502 Marine Biology
(Prereq. : Bio. 421) 3 (4) credits
Biology of marine plants and animals including their environments and uses.

Bio 503 Radiobiology (Prereq. : Bio. 351) 3 credits
A study of reactions of various rays and their effects on living organisms including their effects on heredity and mutation.

Bio 511 Plant Hormones 3 (4) credits
A study of plant hormones in term of chemical characteristics of auxins, gibberellins, cytokinins, inhibitors, retardants and agricultural application such as germination of seed, rooting, growth, and control of size of plant, flowering fruitset and fruit growth, fruit ripening, flower and fruit thinning, dormancy, abscission, storage, preharvest and postharvest treatment, herbicides.

Bio 521 Ichthyology (Prereq. ± Bio. 422 or
Bio. 423 2 (3) credits
A study of Southeast Asian fishes including their life history, ecology, taxonomy, and economic importance.

Bio 522 Ornithology (Prereq. : Bio. 422 or
Bio. 423) 2 (3) credits
A study of birds in the area of structure, physiology locomotion, reproduction evolution, adaptations for securing food and avoiding enemies, and relation to mankind. Laboratory work is principally a study of classification, field trips enable students to distinguish the common local birds by sight and by song.

Bio 523 Malacology (Prereq. : Bio. 421) 2 (3) credits
A study of terrestrial, fresh-water and marine mollusks ; their anatomy, development,

taxonomy, locomotion, reproduction, physiology, and economic importance.

Bio 531 Phycology (Prereq. : Bio 411) 3 (4) credits
A systematic study of freshwater and marine algae of Thailand and neighbouring countries. Emphasis is primarily on structure, behavior, life history, ecology, classification, phylogeny, economic importance, physiology, and genetics. The course encourages group or individual research on algae.

Bio. 532 General Mycology
(Prereq. : Bio. 411) 3 (4) credits
A study of the major groups of fungi. Aspects of their life history, development morphology, physiology, and taxonomy ; consideration of evolutionary trends, economic importance, and relationship between fungi and other organisms.

Bio 533 Protozoology (Prereq. : Bio. 421) 2 (3) credits
A study of morphology, taxonomy, physiology, and life history of representative free living and parasitic protozoans.

Bio 534 Virology (Prereq. : Bio. 231) 2 (3) credits
A study of the biology of animal, plant, insect and bacterial viruses.

Bio 535 Pathogenic Bacteriology
(Prereq. : Bio. 231) 3 (4) credits
The relationship between host and pathogenic organism, method of transmission, pathogenics and type of infection produced.

Bio 536 Immunology and Serology (Prereq. :
Bio. 231 ; Biochemistry ; Organic
chemistry.) 3 (4) credits
A study of the immune response and its relationship to the diagnosis, prevention and treatment of diseases.

Bio. 571 Parasitology 3 (4) credits
A survey of animal parasites ; basic concepts of parasitology : commensalism, mutualism, and parasitism, a study of metabolism, evolution, reproduction, life history, and host-parasite relationship, prevention and techniques for finding, identifying, examining and preserving parasites.

Bio 572 Weed Biology 2 (3) credits
A study of biology of tropical weeds, including their environments, economic importances, and weed control.

Bio 573 Tropical Pest Biology
(Prereq. : Bio. 424 and 511) 2 (3) credits
Biology of tropical pests with main emphasis on Thai important pests of agricultural crops, livestocks, domestic animals, including human, and new approaches of pest control.

Bio 574 Plant Pathology
(Prereq. : Bio. 231) 3 (4) credits
A study of diseases of economic plants ; causes, spread, prevention and cure of the diseases.

Bio 575 Economic Plants
(Prereq. : Bio. 412) 3 (4) credits
A study of economic plants with an emphasis on those of Thailand.

Bio. 581 Microtechniques 3 (6) credits
A study of methods and techniques employed in preparation of materials for biological study.

Physics

Objectives

1. To prepare capable teachers of physics up to the Bachelor's degree level.
2. To promote the ability to research in problems relating to physics teaching or physics

Sturcture of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Courses		24 credit hours
2.2 Elective Courses		3 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to mathematics
1 refers to mechanics
2 refers to thermodynamics and statistical Mechanics
4 refers to electromagnetism
5 refers to nuclear physics
7 refers to quantum mechanics
8 refers to laboratory
9 refers to seminar and research

Compulsory

Phys 502	Mathematical Method of Theoretical Physics I	3 credits
Phys 502	Mathematical Method of Theoretical Physics II	3 credits
Phys 511	Classical Mechanics I	3 credits
Phys 512	Classical Mechanics II	3 credits
Phys 541	Classical Theory of Electromagnetism I	3 credits
Phys 542	Classical Theory of Electromagnetism II	3 credits

Phys 671	Quantum Mechanics I	3 credits
Phys 672	Quantum Mechanics II	3 credits

Elective

Phys 621	Classical Statistical Mechanics I	3 credits
Phys 622	Classical Statistical Mechanics II	3 credits
Phys 651	Nuclear Physics	3 credits
Phys 673	Quantum Mechanics III	3 credits
Phys 643	Electronics	3 (6) credits
Phys 681	Advanced Laboratory	3 (6) credits
Phys 691	Physics Seminar	2 (4) credits

Course Description

Phys 501 Mathematical Methods of Theoretical Physics I 3 (3) credits
Vector analysis, linear ordinary differential equations, special functions, delta function, Sturm-Liouville theorem introduction to Green's function.

Phys 502 Mathematical Methods of Theoretical Physics II 3 (3) credits
Complex variable, matrix linear algebra, partial differential equation, group theory, tensor calculus.

Phys 511 Classical Mechanics I 3 (3) credits
Variational principles and Lagrange's equation; The two-body central force problem, the kinematics of rigid body motion, special theory of relativity.

Phys 512 Classical Mechanics II 3 (3) credits
The Hamiltonian equation of motion, canonical transformations, Hamilton-Jacobi equation, small oscillation.

Phys 541 Classical Theory of Electromagnetism I 3 (3) credits
Electrostatics, boundary-value problems in electrostatics, mulipoles, electrostatics of

macroscopic media, dielectric, magnetostatics.

Phys 542 Classical Theory of Electromagnetism II 3 (3) credits
Time-varying fields, Maxwell's equations, conservation laws, plane electromagnetic waves, simple radiating systems, radiation by moving charges.

Phys 621 Classical Statistical Mechanics I 3 (3) credits
Thermodynamics and kinetic theory, applications of thermodynamics, the equilibrium state of dilute gas, classical statistical mechanics, canonical ensemble and grand canonical ensemble.

Phys 622 Classical Statistical Mechanics II 3 (3) credits
Quantum statistical mechanics, ideal Fermi gas, Ideal Bose Gas, cluster expansion, phase transitions, the Ising model.

Phys 651 Nuclear Physics. 3 (3) credits
Elements of nuclear structure and systematics, nuclear decay, nuclear forces, nuclear reactions, neutron.

Phys 671 Quantum Mechanics I 3 (3) credits
Physical basis of quantum mechanics, the Shrodinger wave equation, Eigen functions and eigen values, discrete eigen values, continuous eigen values.

Phys 672 Quantum Mechanics II 3 (3) credits
Matrix formulation of quantum mechanics, approximate methods for bound states, approximate methods in collision theory, identical particles and spin, semi-classical treatment of radiation.

Phys 673 Quantum Mechanics III 3 (3) credits
Description of quantized system, elements of relativistic quantum mechanics, introduction to quantum field theory.

Phys 643 Electronics 3 (6) credits
Theories and experiments related to electronic circuits widely used in experiments and researches.

Phys 681 Advanced Laboratory 3 (6) credits
Laboratory experiments in physics of investigative nature.

Phys 691 Physics Seminar 2 (4) credits
Reports and discussions of researches in physcs published in scientific journals.

Mathematics

Objectives

To produce teachers of high calibre who will be able organize, and research in problems relating to mathematics curriculum, as well as offering training program in both mathematics and the teaching of methematics

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area	not less than	27 credit hours
2.1 Mathematics		24 credit hours
2.2 Mathematics Education		3 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

0 refers to foundations
1 refers to analysis
2 refers to algebra
3 refers to gemetry
4 refers to foundations of mathematics
5 refers to statistics
6 refers to topology
7 refers to computer science
8 refers to mathematics for teachers
9 refers to seminar

Compulsory

Mathematics

Math 411	Mathematical Analysis	3 credits
Math 412	Vector Analysis	3 credits
Math 413	Introduction to Real Analysis	3 credits
Math 414	Introduction to Complex Analysis	3 credits
Math 415	Partial Differential Equations	3 credits
Math 416	Introduction to Numerical Analysis	3 credits
Math 422	Introduction to Abstract Algebra II	3 credits

Math 424	Linear Algebra II	3 credits
Math 432	Non-Euclidean Geometry	3 credits
Math 433	Projective Geometry	3 credits
Math 434	Differential Geometry	3 credits
Math 441	Introduction to Mathematical Logic	3 Credits
Math 442	Set Theory	2 credits
Math 443	History of Mathematics	3 credits
Math 451	Probability Theory	3 credits
Math 452	Mathematical Statistics I	3 credits
Math 453	Mathemtical Statistics II	3 credits
Math 461	Introduction to Topology	3 credits
Math 471	Game Theory	3 credits
Math 511	Real Analysis	3 credits
Math 512	Functional Analysis	3 credits
Math 513	Complex Analysis	3 credits
Math 521	Group Theory	3 credits
Math 561	Topology	3 credits
Math 541	Foundations of Mathematics	3 credits
Math 691	Individual Studies in Mathematics.	3 credits

Mathematics Education

Math Ed 521	Mathematics Education	3 credits
Free Elective	for Mathematics major only	
Math Ed 691	Individual Studies in Mathematics Education	3 credits

Course Description

Math 411 Mathematical Analysis (Prerequisite : Math. 313 or by approval) 3 credits
A rigorous treatment of limit, continuity, differentiation and integration.

Math 412 Vector Analysis (Prerequisite : Math. 313) 3 credits
Elementary operations, applications to grometry, applications to mechanics, partial differentiation, integration.

Math 413 Introduction to Real Analysis
(Prerequisite : Math. 313) 3 credits
Theories of sequences and series of real numbers and of functions. Topology on the real line.

Math 414 Introduction to Complex Analysis
(Prorequisite : Math. 313) 3 credits
Analytic functions, elementary functions and mapping, integrals, Cauchy's theorem. Cauchy's integral formula, the Fundamental Theorem of Algebra, sequences and series, Taylor series, Laurent series, classification of singularities, calculus of residue.

Math 415 Partial Differential Equations
(Prerequisite : Math. 314) 3 credits
Equations of first order, classification of second order equations, eliptic equations, hyperbolic equations, parabolic equations.

Math 416 Introducation to Numerical Analysis
(Prerequisite : Math. 313) 3 credits
Errors and significant figures, interpolation with divided differences, Lagrangian method, finite-difference interpolation, numberical solutions of equations.

Math 422 Introduction to Abstract Algebra II
(Prerequisite : Math. 421) 3 credits
Ideals, Euclidean domains, polynomial rings, field extensions and introduction to Galois Theory.

Math 424 Linear Algebra II
(Prerequisite : Math. 423) 3 credits
Linear transformations, matrics of linear Linear transformations, matrics of linear transformations, characteristic vectors, bilinear forms.

Math 423 Non - Euclidean Geometry
(Prerequisite : Math. 331) 3 credits

The discovery of non-Euclidean geometry, hyperbolic plane geometry and trigonometry, elliptic plane geometry and trigonometry, the consistency of the non-Euclidean geometries.

Math 433 Projective Geometry 3 credits
Introductory concepts, central projection, duality, perspectivity, projectivities, harmonic relationship, conics, the Pascal and Brianchon theorem, poles and polars, quadric surfaces, involution.

Math 434 Differential Geometry
(Prerequisite : Math. 212) 3 credits
Curves in 3-space, geometry in 3-space, calculus on a surface, geometry of surfaces in 3-space, intrinsic property of surfaces.

Math 441 Introduction to Mathemational Logic
((Prerequisite : Math. 241) 3 credits
The propositional calculus, quantification theory, and related topics.

Math 442 Set Theory (Prerequisite :
Math. 241) 3 credits
Axiomatic development of set theory, axiom of choice, well-ordering principle, transfinite induction, cardinal and ordinal numbers.

Math 443 History of Mathematics 3 credits
Elementary history of mathematics from the beginning to the discovery of calculus and some selected topics.

Math 451 Probability Theory
(Prerequisite : Math. 313) 3 credits.
Probability space, probability laws, moment generating functions, law of large numbers, limit theorem, Markov chains.

Math 452 Mathematical Statistics I
(Prerequisite : Math. 313) 3 credits
Distributions of random variables, conditional

probability and stochastic independence, some special distributions, distributions of functions of random variables, limiting distributions.

Math 453 Mathematical Statistics II
(Prerequisite : Math. 452) 3 credits
Interval estimation, point estimation and sufficient statistics, statistical hypotheses, statistical tests, nonparametric methods, further normal distribution theory.

Math 461 Introduction to Topology
(Prerequisite : Math. 313) 3 credits
Matric spaces, topological spaces, connectedness, compactness.

Math 471 Game Theory (Prerequisite :
Math. 451 or by approval) 3 credits
Principles used in decision making, decision criteria, type of hypotheses, Bayes strategies, applications in binomial and normal random sampling, game matrix, saddle points, mixed strategy.

Math 511 Real Analysis (Prerequisite :
Math. 411) 3 credits
Measures on the real line, Lebesque Measure, Lebesque integral, measurable functions, the real linear space.

Math 512 Functional Analysis
(Prerequisite : Math. 511) 3 credits
Linear spaces, linear operators, normed linear spaces, Bancah spaces, inner product spaces, Hilbert spaces, metric linear spaces.

Math 513 Complex Analysis
(Prerequisite : Math. 414) 3 credits
Harmonic functions, Poisson's integral, the Dirichlet problem, related boundary value problems, conformal mapping, infinite infinite product, analytic continuation.

Math 521 Group Theory
(Prerequisite : Math. 421) 3 credits
Groups, subgroups, quotient groups, groups with operators, the isomorphism theorems, Jordan-Holder theorem, direct product, Krull Schmidt theorem, Abelian groups.

Math 561 Topology (Prerequisite : Math. 461) 3 credits
General topological spaces, homeomorphism, subspaces, product connectedness, local connectedness, arcwise connected topological spaces, hometopic paths, simple connectedness, compact topological spaces, compact metric space, Bolzano - Weierstrass Theorem.

Math 541 Foundations of Mathematics 3 credits
This course deals with the axiomatic method and its analysis ; theory of sets and its background ; groups and their significance for the foundations ; the development of various viewpoints on the foundations of mathematics leading to new directions in pedagogical dimension of mathematics.

Math 691 Individual Studies in Mathematics 3 credits
Intensive study of particular topics from the field of mathematics. Topics chosen to suit the student's interest and with approval from faculty member. choson

Math Ed 521 Mathematics Education 3 credits.
Understanding of the nature of mathematics, value of mathematics in education, objectives in teaching mathematics the place of mathematics in general education, some psychological impacts on the teaching of mathematics, issues and research in mathematics education, evaluation of mathematics program.

Math Ed 691 Individual Studies in Mathematics Education 3 credits
Content depends on the mutual consideration of the student and the instructor.

Physical Education

Objectives

1. To provide professional preparation that will make the student knowledgeable and capable of teaching various physical education courses.
2. To enable the students to organize and provide physical education services and sports for society.
3. To promote the ability to study and research in areas relating to physical education and sports.

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
2. Major Area	not less than	27 credit hours
2.1 Required Courses		23 credit hours
2.2 Elective Course		4 credit hours
3. Free Elective Area	not less than	3 credit hours
4. Thesis		6 credit hours

Meanings of the Middle Digits of the Code Numbers

1 refers to principles of administration, curriculum, and general information
2 refers to scientific foundations
3 refers to philosophical, sociological, historical foundations
4 refers to independent study and research

Compulsory

P E 511	Curriculum Development in Physical Education	2 credits
P E 512	Administration and Supervision in Physical Education	3 credits
P E 513	Seminar in Physical Education	2 credits
P E 514	Advanced Tests and Measurements in Physical Education	3 credits
P E 632	Comparative Physical Education	3 credits
P E 630	Philosophy of Physical Education	3 credits

P E 521	Advanced Physiology of Exercise	3 credits
P E 524	Physical Therapy	2 credits
P E 634	Sports and Society	2 credits

Elective (4 credits at least)

P E 522	Applied Kinesiology	2 credits
P E 650	Individual Study	2 credits
H E 520	Scientific Foundations of Health Education	2 credits
H E 511	Curriculum Development and Evaluation in Health Education	2 credits
H E 512	Organization of Safety Education	2 credits
H E 513	Seminar in Health Education	2 credits
Rec 531	Recreation and Society	2 credits
Rec 532	Community Recreation	2 credits
Rec 513	Seminar in Recreation	2 credits
P E 640	Seminar of Research in Physical Education	2 credits

Course Description

P E 511 Curriculum Development in Physical Education 2 credits

An advanced course presenting total curriculum in physical education at all grade levels ; special emphasis on curriculum trends in elementary and secondary programs and also upon application of the principles, practices, and functional philosophies of curriculum development in physical education.

P E 512 Administration and Supervision in Physical Education 3 credits

There are two phases in the course : administration and supervision.

Phase A : Administration of physical education in schools and colleges ; special attention to problems of organization, classification of students, scheduling, facilities and equipment,

budget and finance, legal foundations, and public relations.

Phase B : Responsibilities of the supervisor of physical education in schools and colleges ; observation techniques, standard of judging instruction, supervisory conferences, cooperative supervision, foundations of curriculum construction and lesson planning ; common problems encountered by supervisors in physical education in elementary and secondary schools and colleges.

P E 513 Seminar in Physical Education 2 credits

study problems of physical education both in domestic and international levels with intensive emphasis on organizing and conducting physical education classes; exploring and examining of current literature and research; organizing and promoting of competitions and trends of physical education to enable the students to apply the acquired knowledge in solving these problems.

P E 514 Advanced Tests and Measurements in Physical Education 3 credits

An analysis of various kinds of tests used in the field of physical education, such as skill tests, knowledge tests, attitude tests, motor capacity tests, and also classification of tests including test construction ; experience offered in the administration of tests and in the use of elementary statistics to interpret scores.

P E 632 Comparative Physical Education 3 credits

Historical and comparative approaches to international physical education through inquiry into origins and development of sports medicine including philosophical trends in order to understant physical education and

sports of those nations.

P E 630 Philosophy of Physical Education 3 credits
A study of philosophies in the fields of education and physical education which form the foundations for progress and development of modern physical education ; trends and influences that lead to changes and justifications of the program to be discussed.

P E 521 Advanced Physiology of Exercise 3 credits
Detailed study and experiment of the factors which influence human performance during exercise ; discussion of pertinent research from the sports medicine literature ; effects of the various types of exercises upon body structure and function.

P E 524 Physical Therapy 2 credits
Study of theory and practice of physical therapy such as rehabilitation of joints by whirlpool or heat pad and conditioning of those parts.

P E 634 Sports and Society 2 credits
Study of relationship of sports and cultural dynamics, sociogenic factors underlying competitive physical activities and an understanding of the behavioral responses of sport participants to various socio-cultural motivations ; the role of sports within past and current societies ; the development of acceptable social attitudes such as co-operativeness, sportsmanship and leadership.

P E 522 Applied Kinesiology 2 credits
Detailed study of the application of anatomical, physic, and physiological principles to human motion and sport performances in order that the results can be applied for the effective coaching as well as teaching of sports and physical activities.

P E N650 Individual Study 2 credits
Individual study and/ or research in selected topics in the areas of physical education not covered in other undergraduate courses.

H E 520 Scientific Foundations of Health Education 2 credits
A course designed for a better understanding of pertinent scientific health facts and principles as these apply to the further improvement of personal, family, community, mental and consumer health.

H E 511 Curriculum Development and Evaluation in Health Education 2 credits
A study of principles, problems, procedures, and the influence of educational philosophy on curriculum construction and evaluation in health education, and the application of these in the development and evaluation of a course of study for a specific situation.

H E 512 Organization of Safety Education 2 credits
A detailed study of programs, practices and procedures pertaining to safe living in the home, school and community ; an analysis of accident hazards including driver and pedestrian safety.

H E 513 Seminar in Health Education 2 credits
Integration of facts, principles and theories into a practical philosophy in the areas of aims, curriculum, organization, administration, biological, physiological and phychological considerations in health education ; exploration of current literature and research to enhance understanding of the profession.

REc 531 Recreation and Society 2 credits
A philosophical consideration of recreation ; basic philosophical, historical and scientific concepts and developments in leisure and

recreation ; analysis of recreation values as related to other contemporary individual and community needs, functions and settings of organized recreation, special problem areas, and current issues.

Rec 532 Community Recreation 2 credits
A study of problems related to the provision of adequate recreation services for a community ; standard and quality of recreation service ; methods of measuring existing services and their coordination, and community organization procedures ; organization and administration of recreation in the communities, agencies, schools, municipals, and other organizations.

Rec 513 Seminar in Recreation 2 credits
Research in selected areas of recreation which includes current trends and problems ; discussion and research of nature of recreation conferences and its implications in economics, education, politics, and sociology.

P E 640 Research in Physical Education 2 credits
Seminar of research in physical education including historical, descriptive and experimental researches to conduct research in this field.

Structure of the Doctoral Programs

The academic structure of the two programs is designed in similar form. The coursework comprises three clusters of subject matters namely, the research methodology, the social and behavioral sciences, and the specialized area. The two programs share some courses in the first and second clusters but branch out clearly in their specialized areas (i.e., development education and curriculum research and development). Within each cluster there are compulsory courses for each program, and selective courses to meet the interest of students. The academic nature of both programs is interdisciplinary and problem-oriented. Doctoral dissertation pertaining to the specialized areas is required for both programs.

Semester

The structure of Doctor of Education curriculum consists of at least 45 semester credit hours of various courses and it must be completed within 5 years.

Development Education.

Deveolpment education which is the field of study in this program is defined as "a study of ways and means for making education at the micro as well as macro levels instrumental to achieving the developmental goals of the country."

This program aims to provide the students with knowledge and skills in the specialized areas of development education, with the supporting background in research methodology and the social and behavioral sciences likely to be useful when attempting to conceptualize problems of development and to formalate educational strategies for their solution. Rather than choosing a single social science discipline as the minor area of study, the students take a broad field study of the selected aspects from four disciplines : economic, political science, sociology, and social psychology.

Course requirements

1. Research Methodology (13 credits at least)

Compulsory

Stat 711	Advanced Statistical Inference	3 credits

Res 717	Advanced Research Design and Instrumentation	2 credits
Res 718	Seminar on Research in Development Education	2 credits

Elective (6 credits at least)

Stat 713	Multivariate and Factor Analysis	3 credits
Res 719	Seminar on Research Technigues, Measurement and Statistics	3 credits
Res 720	Survey Research Techniques	2 credits
Res 721	Operation Research Techniques	2 credits
Res 722	System Analysis Techniques	2 credits
C Sc 723	Computer for Social Seiences Research	2 credits

2. **Behavioral and social Science** (16 credits a least)

Compulsory

Soc 753	Sociology for Development	3 credits
Soc 754	Social Psychology for Development	3 credits
Econ 755	Economics for Development	3 credits
Pol 756	Ploitical Science for Development	3 credits

Elective (4 credits at least)

Econ 757	Advanced Deveolopment Economics	2 credits
Soc 758	Advanced Rural Sociology	2 credits
Psy 759	Group and Interpersonal Process	2 credits
Soc 760	Value Change	2 credits
Soc 761	Population Dynamics	2 credits
Phil 762	Religion, Philosophy, and National Development	2 credits
Soc 743	Problems in Human Ecology	2 credits
Psy 763	Education and Personality Development	2 credits
Phil 764	Buddhist Principles and Social Problems	2 credits
Comm 751	Human Communication	2 credits

3. **Development Education** (16 credits at least)

Compulsory (10 credits)

D Ed 779	Principles and Process of National Development	2 credits
D Ed 780	Educational Strategies for Development	2 credits
D Ed 781	Seminar in Development Education	2 credits
Econ 782	Economics of Education	2 credits
D Ed 783	Praticum in Development Program	2 credits

Elective (6 credits at least)

Curr 771	Curriculum Theories and Practice	3 credits
D Ed 784	Project Evaluation Techniques	2 credits
D Ed 785	Human Resources Development and Utilization	2 credits
Econ 786	Planning of Economy, Manpower and Education	3 credits
D Ed 787	Individual Study	1 credits

4. **Dissertation** Required but non credit

Course Description

1. Research Methodology

Stat 711 Advanced Statistical Inference 3 units

Mathematics structure of statistics ; use of inferential statistics in research ; sampling ; sampling variables ; sample space ; population ; distribution of statistics ; hypothesis testing ; error in statistical decisions ; statistics significance ; distributions.

Res 717 Advanced Research Design and Instrumentation 2 units

Theoretical and practical work in advanced research methods, including experiment, survey and operations.

Res 718 Seminar on Research in Development Education 2 units

Discussion of both foreign and local research result to determine the strong and weak points and limitations.

Stat 713 Multivariate and Factorial Analysis 3 units

Methods, basic concepts, and assumptions in multivariate analysis and factor analysis; emphasis on practice in calculation; Lectures, discussions, plus individual and group presentations.

Res 719 Seminar on Research Techniques, Measurement, and Statistics 3 units

A study of economics, society, culture, and education according to the national economic and social development plans; study of theories in research, statistics, and measurement ; construction of research instruments ; design and planning of research ; methods of statistics analysis ; social and educational psychology research methods ; administration and service of research.

Res 720 Survey Research Techniques 2 units

Theoretical and practical study of survey research methods, such as construction of questionaires, selection of samples, interviewing, editing of questionaires, computer calculations, analysis of survey results and reporting of results.

Res 721 Operation Research Techniques 2 units

Theoretical and practical study of operations research methods, such as statement of problems,, construction of hypothesis, statement of relations, testing of relations, conclusions, and reporting of results.

Mathematics

Objectives

To produce teachers of high calibre who will be able organize, and research in problems relating to mathematics curriculum, as well as offering training program in both mathematics and the teaching of methematics

Structure of the Program

Requirements

1. Foundations of Education Area		12 credit hours
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5 refers to statistics
6 refers to topology
7 refers to computer science
8 refers to mathematics for teachers
9 refers to seminar

Compulsory

Mathematics

Math 411	Mathematical Analysis	3 credits
Math 412	Vector Analysis	3 credits
Math 413	Introduction to Real Analysis	3 credits
Math 414	Introduction to Complex Analysis	3 credits
Math 415	Partial Differential Equations	3 credits
Math 416	Introduction to Numerical Analysis	3 credits
Math 422	Introduction to Abstract Algebra II	3 credits

Math 424	Linear Algebra II	3 credits
Math 432	Non-Euclidean Geometry	3 credits
Math 433	Projective Geometry	3 credits
Math 434	Differential Geometry	3 credits
Math 441	Introduction to Mathematical Logic	3 Credits
Math 442	Set Theory	2 credits
Math 443	History of Mathematics	3 credits
Math 451	Probability Theory	3 credits
Math 452	Mathematical Statistics I	3 credits
Math 453	Mathemtical Statistics II	3 credits
Math 461	Introduction to Topology	3 credits
Math 471	Game Theory	3 credits
Math 511	Real Analysis	3 credits
Math 512	Functional Analysis	3 credits
Math 513	Complex Analysis	3 credits
Math 521	Group Theory	3 credits
Math 561	Topology	3 credits
Math 541	Foundations of Mathematics	3 credits
Math 691	Individual Studies in Mathematics.	3 credits

Mathematics Education

Math Ed 521	Mathematics Education	3 credits
Free Elective	for Mathematics major only	
Math Ed 691	Individual Studies in Mathematics Education	3 credits

Course Description

Math 411 Mathematical Analysis (Prerequisite : Math. 313 or by approval) 3 credits
A rigorous treatment of limit, continuity, differentiation and integration.

Math 412 Vector Analysis (Prerequisite : Math. 313) 3 credits
Elementary operations, applications to grometry, applications to mechanics, partial differentiation, integration.

Math 413 Introduction to Real Analysis
(Prerequisite : Math. 313) 3 credits
Theories of sequences and series of real numbers and of functions. Topology on the real line.

Math 414 Introduction to Complex Analysis
(Prorequisite : Math. 313) 3 credits
Analytic functions, elementary functions and mapping, integrals, Cauchy's theorem. Cauchy's integral formula, the Fundamental Theorem of Algebra, sequences and series, Taylor series, Laurent series, classification of singularities, calculus of residue.

Math 415 Partial Differential Equations
(Prerequisite : Math. 314) 3 credits
Equations of first order, classification of second order equations, eliptic equations, hyperbolic equations, parabolic equations.

Math 416 Introducation to Numerical Analysis
(Prerequisite : Math. 313) 3 credits
Errors and significant figures, interpolation with divided differences, Lagrangian method, finite-difference interpolation, numberical solutions of equations.

Math 422 Introduction to Abstract Algebra II
(Prerequisite : Math. 421) 3 credits
Ideals, Euclidean domains, polynomial rings, field extensions and introduction to Galois Theory.

Math 424 Linear Algebra II
(Prerequisite : Math. 423) 3 credits
Linear transformations, matrics of linear Linear transformations, matrics of linear transformations, characteristic vectors, bilinear forms.

Math 423 Non - Euclidean Geometry
(Prerequisite : Math. 331) 3 credits

The discovery of non-Euclidean geometry, hyperbolic plane geometry and trigonometry, elliptic plane geometry and trigonometry, the consistency of the non-Euclidean geometries.

Math 433 Projective Geometry 3 credits
Introductory concepts, central projection, duality, perspectivity, projectivities, harmonic relationship, conics, the Pascal and Brianchon theorem, poles and polars, quadric surfaces, involution.

Math 434 Differential Geometry
(Prerequisite : Math. 212) 3 credits
Curves in 3-space, geometry in 3-space, calculus on a surface, geometry of surfaces in 3-space, intrinsic property of surfaces.

Math 441 Introduction to Mathemational Logic
((Prerequisite : Math. 241) 3 credits
The propositional calculus, quantification theory, and related topics.

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Axiomatic development of set theory, axiom of choice, well-ordering principle, transfinite induction, cardinal and ordinal numbers.

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Elementary history of mathematics from the beginning to the discovery of calculus and some selected topics.

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(Prerequisite : Math. 313) 3 credits.
Probability space, probability laws, moment generating functions, law of large numbers, limit theorem, Markov chains.

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(Prerequisite : Math. 313) 3 credits
Distributions of random variables, conditional

probability and stochastic independence, some special distributions, distributions of functions of random variables, limiting distributions.

Math 453 Mathematical Statistics II
(Prerequisite : Math. 452) 3 credits
Interval estimation, point estimation and sufficient statistics, statistical hypotheses, statistical tests, nonparametric methods, further normal distribution theory.

Math 461 Introduction to Topology
(Prerequisite : Math. 313) 3 credits
Matric spaces, topological spaces, connectedness, compactness.

Math 471 Game Theory (Prerequisite :
Math. 451 or by approval) 3 credits
Principles used in decision making, decision criteria, type of hypotheses, Bayes strategies, applications in binomial and normal random sampling, game matrix, saddle points, mixed strategy.

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Math. 411) 3 credits
Measures on the real line, Lebesque Measure, Lebesque integral, measurable functions, the real linear space.

Math 512 Functional Analysis
(Prerequisite : Math. 511) 3 credits
Linear spaces, linear operators, normed linear spaces, Bancah spaces, inner product spaces, Hilbert spaces, metric linear spaces.

Math 513 Complex Analysis
(Prerequisite : Math. 414) 3 credits
Harmonic functions, Poisson's integral, the Dirichlet problem, related boundary value problems, conformal mapping, infinite infinite product, analytic continuation.

Math 521 Group Theory
(Prerequisite : Math. 421) 3 credits
Groups, subgroups, quotient groups, groups with operators, the isomorphism theorems, Jordan-Holder theorem, direct product, Krull Schmidt theorem, Abelian groups.

Math 561 Topology (Prerequisite : Math. 461) 3 credits
General topological spaces, homeomorphism, subspaces, product connectedness, local connectedness, arcwise connected topological spaces, hometopic paths, simple connectedness, compact topological spaces, compact metric space, Bolzano - Weierstrass Theorem.

Math 541 Foundations of Mathematics 3 credits
This course deals with the axiomatic method and its analysis ; theory of sets and its back-ground ; groups and their significance for the foundations ; the development of various viewpoints on the foundations of mathematics leading to new directions in pedagogical dimension of mathematics.

Math 691 Individual Studies in Mathematics 3 credits
Intensive study of particular topics from the field of mathematics. Topics chosen to suit the student's interest and with approval from faculty member. choson

Math Ed 521 Mathematics Education 3 credits.
Understanding of the nature of mathematics, value of mathematics in education, objectives in teaching mathematics the place of mathematics in general education, some psychological impacts on the teaching of mathematics, issues and research in mathematics education, evaluation of mathematics program.

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Objectives

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2. To enable the students to organize and provide physical education services and sports for society.
3. To promote the ability to study and research in areas relating to physical education and sports.

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3. Free Elective Area	not less than	3 credit hours
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Meanings of the Middle Digits of the Code Numbers

1 refers to principles of administration, curriculum, and general information
2 refers to scientific foundations
3 refers to philosophical, sociological, historical foundations
4 refers to independent study and research

Compulsory

P E 511	Curriculum Development in Physical Education	2 credits
P E 512	Administration and Supervision in Physical Education	3 credits
P E 513	Seminar in Physical Education	2 credits
P E 514	Advanced Tests and Measurements in Physical Education	3 credits
P E 632	Comparative Physical Education	3 credits
P E 630	Philosophy of Physical Education	3 credits

P E 521	Advanced Physiology of Exercise	3 credits
P E 524	Physical Therapy	2 credits
P E 634	Sports and Society	2 credits

Elective (4 credits at least)

P E 522	Applied Kinesiology	2 credits
P E 650	Individual Study	2 credits
H E 520	Scientific Foundations of Health Education	2 credits
H E 511	Curriculum Development and Evaluation in Health Education	2 credits
H E 512	Organization of Safety Education	2 credits
H E 513	Seminar in Health Education	2 credits
Rec 531	Recreation and Society	2 credits
Rec 532	Community Recreation	2 credits
Rec 513	Seminar in Recreation	2 credits
P E 640	Seminar of Research in Physical Education	2 credits

Course Description

P E 511 Curriculum Development in Physical Education 2 credits

An advanced course presenting total curriculum in physical education at all grade levels ; special emphasis on curriculum trends in elementary and secondary programs and also upon application of the principles, practices, and functional philosophies of curriculum development in physical education.

P E 512 Administration and Supervision in Physical Education 3 credits

There are two phases in the course : administration and supervision.

Phase A : Administration of physical education in schools and colleges ; special attention to problems of organization, classification of students, scheduling, facilities and equipment,

budget and finance, legal foundations, and public relations.

Phase B : Responsibilities of the supervisor of physical education in schools and colleges ; observation techniques, standard of judging instruction, supervisory conferences, cooperative supervision, foundations of curriculum construction and lesson planning ; common problems encountered by supervisors in physical education in elementary and secondary schools and colleges.

P E 513 Seminar in Physical Education 2 credits

study problems of physical education both in domestic and international levels with intensive emphasis on organizing and conducting physical education classes; exploring and examining of current literature and research; organizing and promoting of competitions and trends of physical education to enable the students to apply the acquired knowledge in solving these problems.

P E 514 Advanced Tests and Measurements in Physical Education 3 credits

An analysis of various kinds of tests used in the field of physical education, such as skill tests, knowleage tests, attitude tests, motor capacity tests, and also classification of tests including test construction ; experience offered in the administration of tests and in the use of elementary statistics to interpret scores.

P E 632 Comparative Physical Education 3 credits

Historical and comparative approaches to international physical education through inquiry into origins and development of sports medicine including philosophical trends in order to understant physical education and

sports of those nations.

P E 630 Philosophy of Physical Education 3 credits
A study of philosophies in the fields of education and physical education which form the foundations for progress and development of modern physical education ; trends and influences that lead to changes and justifications of the program to be discussed.

P E 521 Advanced Physiology of Exercise 3 credits
Detailed study and experiment of the factors which influence human performance during exercise ; discussion of pertinent research from the sports medicine literature ; effects of the various types of exercises upon body structure and function.

P E 524 Physical Therapy 2 credits
Study of theory and practice of physical therapy such as rehabilitation of joints by whirlpool or heat pad and conditioning of those parts.

P E 634 Sports and Society 2 credits
Study of relationship of sports and cultural dynamics, sociogenic factors underlying competitive physical activities and an understanding of the behavioral responses of sport participants to various socio-cultural motivations ; the role of sports within past and current societies ; the development of acceptable social attitudes such as co-operativeness, sportsmanship and leadership.

P E 522 Applied Kinesiology 2 credits
Detailed study of the application of anatomical, physic, and physiological principles to human motion and sport performances in order that the results can be applied for the effective coaching as well as teaching of sports and physical activities.

P E N650 Individual Study 2 credits
Individual study and/ or research in selected topics in the areas of physical education not covered in other undergraduate courses.

H E 520 Scientific Foundations of Health Education 2 credits
A course designed for a better understanding of pertinent scientific health facts and principles as these apply to the further improvement of personal, family, community, mental and consumer health.

H E 511 Curriculum Development and Evaluation in Health Education 2 credits
A study of principles, problems, procedures, and the influence of educational philosophy on curriculum construction and evaluation in health education, and the application of these in the development and evaluation of a course of study for a specific situation.

H E 512 Organization of Safety Education 2 credits
A detailed study of programs, practices and procedures pertaining to safe living in the home, school and community ; an analysis of accident hazards including driver and pedestrian safety.

H E 513 Seminar in Health Education 2 credits
Integration of facts, principles and theories into a practical philosophy in the areas of aims, curriculum, organization, administration, biological, physiological and phychological considerations in health education ; exploration of current literature and research to enhance understanding of the profession.

REc 531 Recreation and Society 2 credits
A philosophical consideration of recreation ; basic philosophical, historical and scientific concepts and developments in leisure and

recreation ; analysis of recreation values as related to other contemporary individual and community needs, functions and settings of organized recreation, special problem areas, and current issues.

Rec 532 Community Recreation 2 credits
A study of problems related to the provision of adequate recreation services for a community ; standard and quality of recreation service ; methods of measuring existing services and their coordination, and community organization procedures ; organization and administration of recreation in the communities, agencies, schools, municipals, and other organizations.

Rec 513 Seminar in Recreation 2 credits
Research in selected areas of recreation which includes current trends and problems ; discussion and research of nature of recreation conferences and its implications in economics, education, politics, and sociology.

P E 640 Research in Physical Education 2 credits
Seminar of research in physical education including historical, descriptive and experimental researches to conduct research in this field.

Structure of the Doctoral Programs

The academic structure of the two programs is designed in similar form. The coursework comprises three clusters of subject matters namely, the research methodology, the social and behavioral sciences, and the specialized area. The two programs share some courses in the first and second clusters but branch out clearly in their specialized areas (i.e., development education and curriculum research and development). Within each cluster there are compulsory courses for each program, and selective courses. to meet the interest of students. The academic nature of both programs is interdisciplinary and problem-oriented. Doctoral dissertation pertaining to the specialized areas is required for both programs.

Semester

The structure of Doctor of Education curriculum consists of at least 45 semester credit hours of various courses and it must be completed within 5 years.

Development Education.

Deveolpment education which is the field of study in this program is defined as "a study of ways and means for making education at the micro as well as macro levels instrumental to achieving the developmental goals of the country."

This program aims to provide the students with knowledge and skills in the specialized areas of development education, with the supporting background in research methodology and the social and behavioral sciences likely to be useful when attempting to conceptualize problems of development and to formalate educational strategies for their solution. Rather than choosing a single social science discipline as the minor area of study, the students take a broad field study of the selected aspects from four disciplines : economic, political science, sociology, and social psychology.

Course requirements

1. Research Methodology (13 credits at least)

Compulsory

Stat 711	Advanced Statistical Inference	3 credits

Res 717	Advanced Research Design and Instrumentation	2 credits
Res 718	Seminar on Research in Development Education	2 credits

Elective (6 credits at least)

Stat 713	Multivariate and Factor Analysis	3 credits
Res 719	Seminar on Research Technigues, Measurement and Statistics	3 credits
Res 720	Survey Research Techniques	2 credits
Res 721	Operation Research Techniques	2 credits
Res 722	System Analysis Techniques	2 credits
C Sc 723	Computer for Social Seiences Research	2 credits

2. **Behavioral and social Science** (16 credits a least)

Compulsory

Soc 753	Sociology for Development	3 credits
Soc 754	Social Psychology for Development	3 credits
Econ 755	Economics for Development	3 credits
Pol 756	Ploitical Science for Development	3 credits

Elective (4 credits at least)

Econ 757	Advanced Deveolopment Economics	2 credits
Soc 758	Advanced Rural Sociology	2 credits
Psy 759	Group and Interpersonal Process	2 credits
Soc 760	Value Change	2 credits
Soc 761	Population Dynamics	2 credits
Phil 762	Religion, Philosophy, and National Development	2 credits
Soc 743	Problems in Human Ecology	2 credits
Psy 763	Education and Personality Development	2 credits
Phil 764	Buddhist Principles and Social Problems	2 credits
Comm 751	Human Communication	2 credits

3. **Development Education** (16 credits at least)

Compulsory (10 credits)

D Ed 779	Principles and Process of National Development	2 credits
D Ed 780	Educational Strategies for Development	2 credits
D Ed 781	Seminar in Development Education	2 credits
Econ 782	Economics of Education	2 credits
D Ed 783	Praticum in Development Program	2 credits

Elective (6 credits at least)

Curr 771	Curriculum Theories and Practice	3 credits
D Ed 784	Project Evaluation Techniques	2 credits
D Ed 785	Human Resources Development and Utilization	2 credits
Econ 786	Planning of Economy, Manpower and Education	3 credits
D Ed 787	Individual Study	1 credits

4. **Dissertation** Required but non credit

Course Description

1. Research Methodology

Stat 711 Advanced Statistical Inference 3 units

Mathematics structure of statistics ; use of inferential statistics in research ; sampling ; sampling variables ; sample space ; population ; distribution of statistics ; hypothesis testing ; error in statistical decisions ; statistics significance ; distributions.

Res 717 Advanced Research Design and Instrumentation 2 units

Theoretical and practical work in advanced research methods, including experiment, survey and operations.

Res 718 Seminar on Research in Development Education 2 units

Discussion of both foreign and local research result to determine the strong and weak points and limitations.

Stat 713 Multivariate and Factorial Analysis 3 units

Methods, basic concepts, and assumptions in multivariate analysis and factor analysis; emphasis on practice in calculation; Lectures, discussions, plus individual and group presentations.

Res 719 Seminar on Research Techniques, Measurement, and Statistics 3 units

A study of economics, society, culture, and education according to the national economic and social development plans; study of theories in research, statistics, and measurement ; construction of research instruments ; design and planning of research ; methods of statistics analysis ; social and educational psychology research methods ; administration and service of research.

Res 720 Survey Research Techniques 2 units

Theoretical and practical study of survey research methods, such as construction of questionaires, selection of samples, interviewing, editing of questionaires, computer calculations, analysis of survey results and reporting of results.

Res 721 Operation Research Techniques 2 units

Theoretical and practical study of operations research methods, such as statement of problems,, construction of hypothesis, statement of relations, testing of relations, conclusions, and reporting of results.

Faculty and Staff of Instruction

Graduate School
Faculty of Eduction
Faculty of Humanities
Faculty of Science
Faculty of Social Sciences
Faculty of Physical Education
Eductional and Psychological Test Bureau
Institute of Research in Behavioral Sciences
Central Library
Phlasuksa Campus
Bangkhen Campus
Bangsaen Campus
Mahasarakham Campus
Patumwan Campus
Pitsanuloke Campus
Songkla Campus

Graduate School

Prasarnmit Campus

Mrs.Kanda Nathalang	B.A. (Hons.) Dip. in Ed., M.A. in Ed., Prof. Dip., Ed.D.
Mr.Chalio Buripakdi	B.Ed. (Hons.), Cert. in Research, M.Ed. (Hon.), A.M., Ph.D.
Mr.Charoon Komolboon	Dip. in Ed., M.S. (Ed Psych.).
Miss Nonglak Wiratchai	B.Sc. (Hons.), B.Ed. (Hons.), M.Ed., Ph.D.
Miss Orawan Tantcharernrat	B.Ed., M.Ed.
Mr.Pisit Sarawichitr	B.Ed., M.A. in Ed., Ph.D., Dip. in the Science of Personal Achievement.
Miss Siriyupa Poonsuwan	B.Ed., M.Ed.
Mr.Somporn Buatong	B.A., MA., Ed. D.
Mr.Tinnakorn Nakornsri	B.Ed., M.Ed., Ed.S., Ph.D. (Administrative Leadership).

Faculty of Education

Prasarnmit Campus

Miss Aree Sunhachawee	B.A. (Hons.), Dip. in Ed., M.A., Ed. D.
Mr. Anan Srisopa	B. Ed., M.S., Ph. D.
Mrs. Bang-orn Bhoowabhiromkhuan	B.Ed., M.Ed.
Miss Bang-orn Setanon	B.Ed., Dip. in Ed., M.Ed. (Guidance)
Miss Benja Chanpaibool	B.Ed., Dip. in TEFL., M.Ed.
Mr. Booncird Pinyoanuntapong	B.Ed., M.Ed.
Miss Boonchom Chaikosi	B.A., MA.A, Ed.D.
Mr. BoonTham Kompor	Dip. in E.E., Dip. in Vocational Training Teacher, B.Ed., M.P.A., M.A. (Community Development)
Mrs. Chari Suvatthee	B.A. (Hons.), B.Ed., M.S. in Ed.
Mr. Charin Prasongsom	B.Ed. (Elementary Ed.), M.Ed. (Ed. Measurement)
Mrs. Chiensri Vividhasiri	Dip. in Ed., B.Ed. (Physics), Cert. in Science Concept Learning, M.A. (Adult & Continuing Ed.)
Mr. Chinda Pathaichant	B.A., M.A. (Curriculum & Instruction)
Mrs. Chinnapa Sitaputra	B.Ed., M.Ed. (Elementary Ed.)
Mr. Chom Poomipark	B.Ed., Cert. A.V. Leadership, M.S. in Ed.
Mr. Choongchai Sangpun	Dip. in Ed., B.Com., B.Ed., M.Ed. (Ed. Adm.)
Mrs. Chusri Wongrutana	B.Ed. (Hons.), M.Ed. (Ed. Res.)
Mrs. Kanchana Srikalasin	B.Ed., M.Ed.
Miss Kamolrat Lasuwong	B.Sc., M.Ed.
Mr. Kasem Boonsong	B.Ed. (Physics), M.Ed. (A.V. Ed.)
Mrs. Kesinee Jotikasthira	B.A., M.Ed.
Mrs. Kittima Preededilok	B.Ed., M.Ed., Ed.D.
Mr. Khompet Chatsupakul	B.Sc., M.Ed.
Miss Ladtongbai Bhuapirom	B.A., Dip. in Ed., Dip. in Ed. (Teaching English as a Second Language), M.Ed. (Comparative Ed.), Ed.D. (Comparative Ed.)

Mr.Luan Saiyos	Cert. in Ed., Dip. in Ed., B.Ed. (Math.), M.Ed. (Measurement)
Mr.Ong-Aj Jiyajan	B.Ed., M.Ed.
Mr.Padoong Arrayavinyoo	B.Ed., M.A.
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Mrs.Panpit Vanichadarn	B.A., M.A. in Ed.
Mr.Patom Nikamanon	B.Ed., M.Ed., Dip. in Adult Education
Mr.Pichai Siritusanakul	B.Sc., Dip. in Ed., Cer. in Voc. Ed., M.A. in Ed.
Mr.Pilas Kuamee	B.Ed., M.Ed.
Mr.Pinit Wonno	B.S.E., M.S.
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Mrs.Ponchan Jearadisak	M.A. (Guidance & Counseling)
Mr.Pongpun Pongsopar	M.Ed. (Guidance & Counseling)
Mrs.Poranee Gururatana	B.A. (Hons.), M.S. in Ed. (Elementary Ed.)
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Mr.Prachoom Rodprasert	B.Ed. (Math.), M.Ed. (Ed. Admin.), Ed.D. (Ed. Admin.)
Mrs.Prapapan Kornkosiyakaj	B.A., B.Ed., M.Ed.
Mrs.Prasarn Tipyatara	B.Ed., Dip. in Ed., Dip. in Ed. (Guidance)
Mr.Prasong Emrat	Dip. in Ed., B.Ed.
Mr.Pruang Kumut	Dip. in Ed., B.Ed., Cert. in edia Leardership, M.S. in Ed., Ed.D.
Miss Ratana Tanboonteck	Dip. in Ed., B.A., M.Ed., Ed.D.
Mrs.Raweewan Thumchai	B.A., B.Ed., M.A., M.S., Ed.D.
Mrs.Rernglak Rojanabhan	M.Ed. (Audio-visual Ed.)
Mrs. Rungdiva Chakrkorn	B.Sc., M.A. in Ed.
Mr.Sakchai Niruntawee	B.Ed., M.A. (Philosophy)
Miss Seela Chayaniyayodhin	A.A. B.S.E., M.A., M.S., Ed.D.
Mr.Somboon Parnnabhop	B.Ed., M.Ed.
Mr.Somjait Apimonluksa	B.Ed., Dip. in Ed. (Guidance), M.Ed. (Ed. Psychology & Guidance)
Mr.Somkuwan Apypunth	Dip. in Ed., B.Ed., M.S. in Ed.
Mrs. Somphorn Chama-oot	B.A., B.Ed. M.A.
Mr.Somsakdi Vichitr	B.Ed., Dip. in Ed., Graduate Dip. in Special Ed.

Mr. Somwang Gururatana	B.Ed., M.Ed. (Audio-Visual Ed.)
Mr. Song-sak Srikalasin	Dip. in Ed., B.Ed., M.A. in Ed., Ed.D. (Ed. Admin.)
Mrs. Sriya NiyomThum	B.Ed. (Hons.), M.Ed. (Developmental Psychology), M.A.
Miss Sumanin Rungruantham	B.Ed., M.A. in Ed.
Mr. Sunthorn Kohtbantau	B.Ed., M.Ed., Ph.D.
Khunying Temsiri Punyasingh	B.A., Dip. in Ed., M.A. in Ed.
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Mrs. Wanpen Phongpryoon	B.Ed., M.Ed. (Guidance)
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Mrs. Susadee Hongsakul	B.A.
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Mrs. Wannee Chalee	B.A., B.Ed., M.S. in Ed.
Miss Wanida Likhitguntima	B.Ed., M.Ed. (Thai)
Miss Wipudh Sobhavong	B.A., B.Ed., B.A. (Social Work), M.A. (Linguistics)
Miss Wiroonrat Chanaingoon	B.A., M.A., Dip. in Ed.
Mr. Wit Thapthiang	B.Ed., M.A. in Library Science

Faculty of Science

Prasarnmit Campus

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Mrs.Arporn Veerasarn	B.Sc., M.Sc., Dip. in Ed., M.S.
Miss Boonmee Gontong	B.Sc. (Chemistry), Dip. in Ed., M.A. (Sc.Ed.)
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Mrs.Krongkaeo Poopityastaporn	B.Sc. (Agr.), M.Sc. (Genetics)
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Mr.Nida Sapianchai	B.Sc. (Hons.), M.A.T., Ph.D. (Chemistry)
Mrs.Nonglak Sakulyanonvitaya	M.Sc. (Zoology)
Mrs.Orapin Kaewlai	M.Ed. (Biology)
Miss Orrapin Cheerrapong	B.Sc. (Mathematics), M.A. (Statistics)
Mr.Pisitthi Worasingha	B.Ed., M.S. Ph.D.
Mr.Preeda Pecharamisri	Dip. in Ed., B.Ed., M.Ed.
Miss Punsin Ketudat	M.Sc. (Parasitology-Mahidol), M.S. (Pop.Studies - U.of Chicogo)
Miss Savanee Chakrpitaksa	B.A. (Hons.), M.S., S.M., D.Sc.
Mrs.Songsri Vimolvanich	B.Sc., M.S., Ph.D.
Mr.Sa-Korn Trinandwan	Dip. in Ed., B.Ed., M.A. (Botany), MAT (Biology)
Mrs.Saisanom Pragobpol	M.Sc.
Mr.Somkiart Greethong	B.Sc., M.Sc.
Mr.Somkid Kaesornsomboon	B.Sc. (Chemistry), M.S. (Org. chem.)
Mrs.Somsong Weesakul	B.Sc. (Hons.), M.S.
Miss Somsuke Terepigittra	Ed.D. (Higher Education & Curriculum and Instruction)

Mr. Suthat Yoksan	B.Sc. (Hons.), A.R. C.S., M.Sc., D.I.C., M.S., Ph.D.
Mrs. Sunan Senakant	B.Sc.
Mrs. Sunan Senakant	B.Sc. (Chula), M.A.T. (Physics)
Mrs. Sumalee Leungsakul	B.Sc. (Biology), M.Sc., (Microbiology)
Mr. Surapon Vatanavigkit	B.Ed. (Hons.), M.A.T., M.A.
Mrs. Suwanna Klaikrasae	B.Ed. (Hons.), M.Ed.
Mrs. Suntaree Piriyakit	B.A. (Chemistry), M.S.
Miss Suchati Ratanakul	B.A., Dip. in Ed., M.A., Prof. Dip., Ed.E.
Miss. Sureeya Khawangsobha	B.Sc. (Hons.), M.Sc. (Physics), Cert. in Nuclear Physics.
Mrs. Sumondha Brohmbun	B.A., M.S.
Miss Sermsin Siriwatana	B.Ed., M.Sc.
Mr. Srirot Pavanarit	B.Sc. Agr., Cert. in Biology, Cert in Curriculum Development
Mr. Tongchua Theraphat	B.Sc., M.Sc., Dip. in Ed., Cert. in Bio. Curriculum
Miss. urupee Pancha	M.Ed.
Mrs. Vanida Trachoo	B.Sc., M.S. in Ed.
Miss Waraporn Suravadi	B.Sc. (Hons.), B.Ed., M.A.T. (Bio.), Dip. in Marine Biology (Norway)
Mrs. Wimon Chitwattanagorn	B.Ed., M.Ed., M.Sc. (Nuclear Physics)
Miss Weerawan Chulakasem	M.Sc. (Zoology-Chula.)

Faculty of Social Sciences

Prasarnmit Campus

Mr.Anan Chiamcharoen	Cert. in Police Admin., Cert in Public Admin., B.A., M.A., M.P.A., Ph.D.
Mr.Chalat Chongsubphant	M.A. (Government)
Mrs.Duangphun Hansa	B.S. M.A.
Mr.Jitta Moudsong	Dip. in Ed., B.Ed. (Thai)
Mr.Kavee worakawin	B.Ed., M.Ed.
Mrs.Kittima Sungkasem	Doctor of Arts (Economics) (D.A. Economics)
Khunwarungupa Sanitwong Na Ayutya	B.A. (Hons.)
Mr.Meechai Worasayan	B.Ed., Graduate Diploma in Geography, M.Ed., Cert. in ERTS
Mrs.Nandha Jotikabukkana	B.A. (Hons.) (History)
Mr.Narong Puangpis	B.Ed., M.Ed. (History)
Mrs.Nibha Naewboonnian	Dip. in Accountancy, Professional Diploma in Ed., B. Ed. (Business)
Mr.Nibondh Sasidhorn	B.A. (Public Administration)., B.L., M.A. (International Relations)., M.A. (Public Admin) Ph.D. (Political Science)
MissNuathip Lua-amrung	B.A., M.A.T.
Mrs.Panitda Tesniyom	M.A. (Economic Development)
Mrs.Prachumporn Khongton	B.A., Dip. in Ed., M.A.
Mr.Prasat Laksila	D. of Econ.
Mrs.Pratuang Maharagkaga	B.A. (Hons.) Dip. in Ed., M.S. in Ed.
Mr.Phitsanes Jessadachatr	B.A. in Economics (Hons.), M.A. in in Economics
Mr.Samutara Siriburi	B.Ed., M.S. (Geography)
Miss Sakorn Chuaypvasith	B.A., B.Ed. (Hons.), M.S. in Ed.
Mr.Sukhom Siriburintra	B.Ed., Dip in Ed., M.A. in Sociohgy.
Mr.Tahwon Koedietpong	B.Ed., M.Ed., M.A.
Mr.Thanom Arnamwat	B.Ed., M.Ed. (History)
Miss Sawat Senanarong	B.A., Dip. in Ed., M.A. (Geography) M.A.T.
Mr.Wutdichai Moolsilpa	B.Ed., M.Ed. (Histoty)

Faculty of Physical Education

Prasaunmit Campus

Mr. Samruan Ratanacharn	Dip. in Ed., B.Ed., M.S. in Ed.
Mr. Boonpong Wanapirom	B.Sc. (Public Health), M.P.H. (Enviromental Sciences)
Mr. Kongsakdi Charernruksa	B.Ed.,
Mr. Pichai Keolamphu	Dip. in Public Health, B.Sc. (Health Education), M.P.H. (Health Education), Cert. Specializing in Public Health Cert. Achievement in Village Health and Sanitation
Mr. Somkid Boonruang	B.Ed., M.Ed. (Guidance), M.Ed. (Physical Education)

Educational and Psychological Test Bureau

Mr. Somboon Chitapong	Ed.D. (Curriculum Research & Development)
Miss Arunsri Kumut	M.Ed.
Mrs. Aungkana Saiyosa	B.Ed. (Chemistry), M.Ed. (Measurement)
Mr. Boontham Inchan	B.Ed., M.A. (History)
Miss Boosagon Petwiwut	M.Ed.
Miss Juntima Promachatikul	M.Ed.
Mr. Chirdsak Kowasin	B.Ed., M.Ed.
Mr. Chote Petchurn	B.Ed., M.Ed. (Measurement), Ed.D.
Mrs. Jiraporn Boonsong	M.Ed.
Mrs. Laddawan Wongphanich	M.Ed. (Ed. Research)
Mr. Paisal Wangphahich	M.Ed. (Measurement)
Miss Puangrat Thaweratana	M.Ed.
Mr. Samreung Boonruangrutana	Ph.D.
Mr. Somson Wongyounoi	M.Ed.
Miss Sunon Solkosoom	M.Ed. (Ed. MEasrement)
Miss Thonghor Wipawin	M.Ed.
Mr. Chanwit Tiamboonprasert	B.Ed. (Math.), M.Ed. (Ed. Measurement)
Mr. Pitr Thongehant	B.Ed. M.Ed.

Institute of Research in Behavioral Sciences

Mrs. Chancha Suvannathat	B.A. (Hons.), M.A. in Ed., Ed.D.
Mrs. Ashara Sucaromana	M.A. (Psychology) Hons., M.Ed. (Research)
Mrs. Boonkob Visamitanandana	Dip. in Ed., B.A., M.Ed. (Developmental Psychology)
Mrs. Duangduan Bhanthumnavin	B.A., M.A., Ph.D. (Soc.Psy.)
Miss Kanchana Lindratanasirikul	B.Ed., M.Ed.
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