BACHELOR OF SCIENCE PROGRAM IN STATISTICS
BACHELOR OF SCIENCE (STATISTICS)
B.SC. (STATISTICS)
FACULTY OF SCIENCE AND TECHNOLOGY
THAMMASAT UNIVERSITY

1.	STRUCTURE AND COMPONENT		
1.1	General Education Courses	30	credits
1.2	Major Compulsory Courses	102	credits
1.3	Free Electives Courses	6	credits
	Total	**138**	**credits**

2. DETAILS OF THE CURRICULUM

2.1	**General Education Courses**			**30**	**credits**
Part I	**University Compulsory and Prescribed**			**21**	**credits**
	TU 110	Integrated Humanities	3		credits
	TU 120	Integrated Social Sciences	3		credits
	TU 130	Integrated Sciences and Technology	3		credits
	TH 161	Thai Usage	3		credits
	TU 154	Foundation of Mathematics	3		credits
	EL 171	English Course 2	3		credits
	EL 172	English Course 3	3		credits
Part II	**Department Compulsory and Prescribed**			**9**	
	BA 291	Introduction of Business	3		credits
	EC 210	Introductory Economics	3		credits
	And select 3 credits from the following courses :				
	PY 228	Psychology of Interpersonal Relations	3		credits
	TU 122	Law in Everyday Life	3		credits
	HO 201	Principle of Management	3		credits

2.2.1	Basic Courses in Science and Mathematics		12	credits
SC 113	General Biology	3		credits
SC 163	General Biology Laboratory	1		credits
SC 123	Fundamental Chemistry	3		credits
SC 173	Fundamental Chemistry Laboratory	1		credits
SC 135	General Physics	3		credits
SC 185	General Physics Laboratory	1		credits

2.2.2	Compulsory Courses in Statistics		30	credits
ST 211	Statistics 1	3		credits
ST 212	Statistics 2	3		credits
ST 321	Introduction to Probability Theory	3		credits
ST 322	Mathematical Statistics 1	3		credits
ST 332	Applied Regression Analysis	3		credits
ST 351	Introduction to Sampling Technique	3		credits
ST 422	Mathematical Statistics 2	3		credits
ST 431	Introduction to Experimental Designs	3		credits
ST 451	Research Methodology	3		credits
ST 494	Special Project 1	1		credit
ST 495	Special Project 2	2		credits

*** Students are required to earn at least a C grade in the following 6 courses : ST 211, ST 212, ST 321, ST 322, ST 351 and ST 422**

2.2.3	Compulsory Courses from other Department		27	credits
MA 211	Calculus 1	3		credits
MA 212	Calculus 2	3		credits
MA 213	Calculus 3	3		credits
MA 332	Linear Algebra	3		credits
MA 351	Numerical Methods	3		credits
CS 103	Introduction to Computer Programming	3		credits
CS 112	Introduction to Object-Oriented Programming	3		credits
EG 221 or EL 295	Reading for Information / Academic English 1	3		credits
EG 241 or EL 395	Listening-Speaking 1 / Academic English 2	3		credits

2.2.4	**Specialized Elective Courses** **Select at least 15 credits of the 300 or 400 level** **(Student are required to select at least 6 credits of 400 level)**		**15**	**credits**
	Elective Course of 300 level			
	ST 336	Statistical Quality Control	3 credits	
	ST 337	Introduction to Nonparametric Statistics	3 credits	
	ST 339	Demography 1	3 credits	
	ST 346	Mathematics of Finance	3 credits	
	ST 347	Mathematics of Life Insurance 1	3 credits	
	ST 348	Mathematics of Investment	3 credits	
	ST 349	Casualty Actuarial Mathematics	3 credits	
	ST 366	Operations Research	3 credits	
	ST376	Data Analysis and computing with Statistical Packages	3 credits	
	ST 386	Introduction to Biostatistics	3 credits	
	Elective Course of 400 level (Minimum 6 credits)			
	ST 428	Special Topics in Actuarial Science	3 credits	
	ST 436	Introduction to Statistics Decision Analysis	3 credits	
	ST 438	Time Series and Forecasting	3 credits	
	ST 439	Demography 2	3 credits	
	ST 446	Introduction to Risk Theory	3 credits	
	ST 447	Mathematics of Life Insurance 2	3 credits	
	ST 449	Seminar in Actuarial Science	3 credits	
	ST 467	Introduction to Stochastic Processes	3 credits	
	ST 486	Applied Multivariate Analysis	3 credits	
	ST 497	Special Topics in Statistics	3 credits	
****Elective Courses non-credits for major**				
	ST 216	Statistics for Social Science 1		
	ST 217	Statistics for Social Science 2		
	ST 218	Psychological Statistics 1		

	ST 319	Psychological Statistics 2		
	ST 326	Applied Probability		
	ST 327	Applied Mathematical Statistics 1		
	ST 328	Applied Mathematical Statistics 2		
	ST 338	Experimental Designs for Science		
	ST 457	Research Methodology in Social Sciences		
	MA 216	Calculus for Social Science 1		
	MA 217	Calculus for Social Science 1		
	MA236	Linear Algebra and Elementary Differential Equations		
	IM 201	Introduction to Quantitative Analysis		
	IM 202	Business Statistics		
2.2.5	**Minor or Electives Courses ,of not lest than**		**18**	**credits**
	Students may choose one of two forms			
	2.2.5.1	**Minor Course** Student may choose to take a minor course from the other faculties.		
	2.2.5.2	**Electives Courses** Student may choose to take any courses that offer in the university and not more than 4 majors, not less than 18 credits (not included major course)		
2.3	**Free Elective Courses at least**		**6**	**credits**
	Student may choose to take any courses that offered in the University at least 6 credits including any of the foreign language offered in the University General Education Courses			
	Student can not choose to take the following courses to be free Elective courses			
	1. All basic Science and Mathematics courses (include courses that are not defined to be general Education courses part II)			
	2. General Education courses both part I and II that use all “TU” and TH 162 Thai Language 2.			

3. THE MINOR IN STATISTICS

There are 2 minors in Statistics

3.1 STATISTICS AS A MINOR

The minimum requirement is an accumulation of 18 credits in statistics, and the following conditions are to be fulfilled

3.1.1 Having taken 12 credits from the following courses

ST 211	Statistics 1	or
ST 216	Statistics for Social Science 1	or
ST 218	Psychological Statistics 1	
ST 212	Statistics 2	or
ST 217	Statistics for Social Science 2	or
ST 319	Psychological Statistics 2	
ST 321	Introduction to Probability Theory	or
ST 326	Applied Probability	
ST 322	Mathematical Statistics 1	or
ST 327	Applied Mathematical Statistics 1	

3.1.2 Not less than 6 credits of the elective courses in the Department including the following courses:

AM 319	Mathematical Programming	3	credits
CS 103	Introduction to Computer Programming	3	credits
CS 112	Introduction to Object-Oriented Programming	3	credits
IS 201	Principle of Information Systems	3	credits
IS 361	END - USER Application Development Language	3	credits
IS 312	Management Information Systems	3	credits

3.1.3 Having maintained a grade point average of 2.00 or higher from all minor courses.

3.2 ACTUARIAL SCIENCE AS A MINOR

The minimum requirement is an accumulation of 18 credits in statistics, and the following conditions are to be fulfilled:

3.2.1 Having taken 15 credits from the following courses:

ST 246	General Principles of Insurance	3	credits
ST 346	Mathematics of Finance	3	credits
ST 347	Mathematics of Life Insurance 1	3	credits
ST 348	Mathematics of Investment	3	credits
ST 349	Casualty Actuarial Mathematics	3	credits

3.2.2 Not less than 3 credits of the elective courses in the Department including the following courses:

AM 319	Mathematical Programming	3	credits
ST 366	Operations Research	3	credits
ST 446	Introduction to Risk Theory	3	credits
ST 447	Mathematics of Life Insurance 2	3	credits
ST 449	Seminar in Actuarial Science	3	credits
ST 457	Research Methodology in Social Sciences	3	credits
ST 467	Introduction to Stochastic Processes	3	credits

3.2.3 Having maintained a grade point average of 2.00 or higher from all minor courses.

4. Associate Degree in Statistics

Students with an accumulation of not less than 102 credits in pursuit of courses in the university are entitled to an Associate Degree in Statistics under the following conditions:

4.1 Having maintained a grade point average not less than 2.00.

4.2 Having been registered as a full-time student for at least five semesters.

4.3 Having fulfilled the University General Education Courses and Basic Science and Mathematics Courses of 42 credits.

4.4 Having taken not less than 27 credits of the courses in the Department and the following courses:

ST 211	Statistics 1	3	credits
ST 212	Statistics 2	3	credits
ST 321	Introduction to Probability Theory	3	credits
ST 322	Mathematical Statistics 1	3	credits
ST 351	Introduction to Sampling Technique	3	credits
ST 431	Introduction to Experimental Designs	3	credits
ST 326	Applied Probability	3	credits

4.5 Having taken 15 credits of courses in the Department of Mathematics, 6 credits in Computer Science, 6 credits in English from the following courses:

MA 211	Calculus 1	3	credits
MA 212	Calculus 2	3	credits
MA 213	Calculus 3	3	credits
MA 332	Linear Algebra	3	credits
MA 351	Numerical Methods	3	credits
CS 103	Introduction to Computer Programming	3	credits
CS 112	Introduction to Object-Oriented Programming	3	credits
EG 221 or EL 295	Reading for Information Academic English 1	3	credits
EG 241 or EL 395	Listening-Speaking 1 Academic English 2	3	credits

4.6 Having taken not less than 6 credits Free Elective courses

5.	Statistics Courses		
NO.	CODE	COURSE NAME	CREDITS
1	ST 211	Statistics 1	3
2	ST 212	Statistics 2	3
3	ST 216	Statistics for Social Science 1	3
4	ST 217	Statistics for Social Science 2	3
5	ST 218	Psychological Statistics 1	3
6	ST 246	General Principles of Insurance	3
7	ST 319	Psychological Statistics 2	3
8	ST 321	Introduction to Probability Theory	3
9	ST 322	Mathematical Statistics 1	3
10	ST 326	Applied Probability	3
11	ST 327	Applied Mathematical Statistics 1	3
12	ST 328	Applied Mathematical Statistics 2	3
13	ST 332	Applied Regression Analysis	3
14	ST 336	Statistical Quality Control	3
15	ST 337	Introduction to Nonparametric Statistics	3
16	ST 338	Experimental Designs for Science	3
17	ST 339	Demography 1	3
18	ST 346	Mathematics of Finance	3
19	ST 347	Mathematics of Life Insurance 1	3
20	ST 348	Mathematics of Investment	3
21	ST 349	Casualty Actuarial Mathematics	3
22	ST 351	Introduction to Sampling Technique	3
23	ST 366	Operations Research	3
24	ST 376	Data Analysis and Computing with Statistical Packages	3
25	ST 386	Introduction to Biostatistics	3
26	ST 422	Mathematical Statistics 2	3
27	ST 428	Special Topics in Actuarial Science	3
28	ST 431	Introduction to Experimental Designs	3
29	ST 436	Introduction to Statistical Decision Analysis	3
30	ST 438	Time Series and Forecasting	3
31	ST 439	Demography 2	3
32	ST 446	Introduction to Risk Theory	3
33	ST 447	Mathematics of Life Insurance 2	3
34	ST 449	Seminar in Actuarial Science	3
35	ST 451	Research Methodology	3
36	ST 457	Research Methodology in Social Sciences	3
37	ST 467	Introduction to Stochastic Processes	3
38	ST 486	Applied Multivariate Analysis	3
39	ST 494	Special Project 1	1
40	ST 495	Special Project 2	2
41	ST 497	Special Project in Statistics	3

6. Study Plan

First Year

First Semester		Credit	Second Semester		credits
TU 154	Foundation of Mathematics	3	MA 212	Calculus 2	3
SC 135	General Physics	3	SC 113	General Biology	3
SC 185	General Physics Laboratory	1	SC 163	General Biology Laboratory	1
TH 161	Thai Usage	3	SC 123	Fundamental Chemistry	3
MA 211	Calculus 1	3	SC 173	Fundamental Chemistry Laboratory	1
English Language		3	ST 211	Statistics 1	3
General Education Course Part II		3	TU 130	Integrated Sciences and Technology	3
Total		19	Total		20

Second Year

First Semester		Credit	Second Semester		credits
MA 213	Calculus 3	3	MA 332	Linear Algebra	3
ST 212	Statistics 2	3	CS 112	Introduction to Object-Oriented Programming	3
EG 221 or EL 295	Reading for Information Academic English 1	3	EG 241 Or EL 395	Listening-Speaking 1 Academic English 2	3
EC 210	Introductory Economics	3	BA 291	Introduction of Business	3
CS 103	Introduction to Computer Programming	3	TU 120	Integrated Social Sciences	3
Free Elective Course		3	TU 110	Integrated Humanities	3
Total		18	Total		18

Third Year

First Semester		Credit	Second Semester		credits
ST 321	Introduction to Probability Theory	3	MA 351	Introduction to Sampling Technique	3
ST 332	Mathematical Statistics 1	3	ST 322	Mathematical Statistics 1	3
ST 351	Applied Regression Analysis	3	Minor or Elective Course		6
Minor or Elective Course		6	Elective Courses in Statistics level 300		3
Elective Courses in Statistics level 300		3	Free Elective Course		3
Total		18	Total		18

Fourth Year

First Semester		Credit	Second Semester		credits
ST 451	Research Methodology	3	ST 431	Introduction to Experimental Designs	3
ST 422	Mathematical Statistics 2	3	ST 495	Special Project 2	2
ST 494	Special Project 1	1	Minor or Elective Course		3
Minor or Elective Course		3	Elective Courses in Statistics		3
Elective Courses in Statistics level 400		6			
Total		16	Total		11

7. COURSE DESCRIPTIONS

ST 211	Statistics 1	3 credits
Prerequisite	: -	

Descriptive statistics; elementary probability; random variables and probability distribution ; expectation value ; elementary sampling and sampling distribution; estimation and hypotheses testing for one and two populations ; use of statistical packages.

ST 212	Statistics 2	3 credits
Prerequisite	: Statistics 1	

One–way analysis of variance ; simple linear regression and correlation analysis; classical time series analysis; elementary quality control ;chi – square test ; nonparametric test ; use of statistical packages.

ST 216	Statistics for Social Science 1	3 credits
Prerequisite	: -	

Introduction to descriptive statistics; index numbers; unconditional and conditional probability; random variables and probability distribution; unconditional and conditional expectations; elementary sampling and sampling distribution; estimation and hypotheses testing for one population; statistical package results interpretation.

ST 217	Statistics for Social Science 2	3 credits
Prerequisite	: ST 216	

Estimation and hypotheses testing for two populations; one – way and two – way analysis of variance; curve fitting; simple and multiple linear regression and correlation analysis; classical time series analysis; chi – square test; statistical package results interpretation.

ST 218	Psychological Statistics 1	3 credits
Prerequisite	: -	

Nature and scope of statistics; scale of measurements; data presentations ; measures of central tendency and dispersion; skewness and kurtosis; probability; random variables and probability distribution; normal distribution; elementary sampling and sampling distribution; estimation and hypotheses testing for one and two populations ; chi–square test; statistical package results interpretation.

ST 246	General Principles of Insurance	3 credits
Prerequisite	: -	

Basic principles of insurance; types of insurance; insurance policy contracts and provisions; risk management and insurance; casualty insurance and life insurance; reinsurance; social insurance; introduction to actuarial science.

ST 319	Psychological Statistics 2	3 credits
Prerequisite	: ST 211 or ST 216 or ST218	

Statistical techniques in psychological research; correlational technique; experimental designs between and / or within subjects variations ; factorial design ; single subject design ; simple and multiple linear regression and correlation analysis ; other coefficients of correlation; analysis of covariance; use of statistical packages.

ST 321	Introduction to Probability Theory	3 credits
Prerequisite	: ST 211 and MA 213	

Probability space; conditional probability ; independent events ; univariate and multivariate distributions of discrete and continuous random variables; distribution function and transformation techniques of random variables; conditional distribution of discrete and continuous random variables; unconditional and conditional expectations; Chebyshev's inequality .

ST 321	Mathematical Statistics 1	3 credits
Prerequisite	: ST 321	

Distributions functions of random variables; transformation techniques for more than one random variables; moment – generating function ; order statistics; limiting distribution; central limit theorem ;point estimation and properties of estimates; completeness; Crame'r – Rao inequality; Rao – Blackwell theorem; Bayes estimation.

ST 326	Applied Probability	3 credits
Prerequisite	: 1. MA 111 or MA 211 or MA216 And 2. ST 211 or ST 216 or TU155	

Probability space ; conditional probability ;independent events; univariate and multivariate distributions of random variables; unconditional and conditional expectations; covariance; Chebyshev 's inequality.

ST 327	Applied Mathematical Statistics 1	3 credits
Prerequisite	: 1. MA 112 or MA 217 : And 2. ST 326	

Distribution of random variables; binomial distribution; Poisson distribution ; gamma and Chi – square distribution ; bivariate normal distribution; Student's t and F distribution; transformation and distribution function techniques, moment - generating function ;limiting distribution; central limit theorem.

ST 328	Applied Mathematical Statistics 2	3 credits
Prerequisite	: ST 327	

Point and interval estimations; properties of estimators; completeness; sufficient statistic; elementary decision making ; hypotheses testing; likelihood ratio tests and chi – square test.

ST 332	Applied Regression Analysis	3 credits
Prerequisite	: ST 212 or ST 217 or ST 319	

Basic concepts of regression and correlation analysis; simple and multiple linear regression and correlation analysis; dummy variables; independent variable selection; model diagnostics; nonlinear regression ; use of statistical packages and applications of real datasets.

ST 336	Statistical Quality Control	3 credits
Prerequisite	: ST 212 or ST 217 or ST 319	

Basic ideas and statistical methodology of process control for products and services ; basic and other current control charts; acceptance sampling : single, double, multiple and sequential; sampling plan with Dodge & Romig and military standards; continuous sampling inspection; use of statistical packages.

ST 337	Introduction to Nonparametric Statistics	3 credits
Prerequisite	: ST 212 or ST 217 or ST 319	

Basic concepts of nonparametric statistics; median test for one or more populations: independent and dependent samples; association analysis; goodness of fit test; use of statistical packages.

ST 338	Experimental Designs for Science	3 credits
Prerequisite	: TU 155	

Basic concepts of experimental designs; completely randomized design; randomized complete block design, latin squares design; factorial experiments; split plot design; repeated measures design; analysis of covariance; use of statistical packages.

ST 339	Demography 1	3 credits
Prerequisite	: -	

Introduction to demography; source and error of population statistic; population data adjustment; demographic analysis; fertility and fertility rate; fertility rate adjustment; mortality and mortality rate; mortality rate adjustment; migration analysis; projection of migration; life tables and its applications; introduction to population projection.

ST 346	Mathematics of Finance	3 credits
Prerequisite	: MA 211 or MA 216 or MA 218	

Basic principles of financial problem analysis ; the measurement of interest ; compound interest; annuities-certain; yield rates; amortization schedules and sinking funds ; bonds ; stocks and other securities; applied mathematics in financial problem analysis.

ST 347	Mathematics of Life Insurance 1	3 credits
Prerequisite	: ST 246 and ST 346	

Basic principles of actuarial science; survival distributions and life tables; life insurance: life annuities, net single premium and net level premium for life insurance and life annuity contracts, gross premium, net premium reserves and modified reserves.

ST 348	Mathematics of Investment	3 credits
Prerequisite	: -	

Basic principles of investment; an implication of mathematics on securities and financial instruments investment; risk and return; securities and portfolio analysis.

ST 349	Casualty Actuarial Mathematics	3 credits
Prerequisite	: ST 211 or ST 216 or ST 218	
Basic rate making; individual risk rating ; risk classification ; loss reserving.		

ST 351	Introduction to Sampling Technique	3 credits
Prerequisite	: ST 212 or ST 217 or ST 319	
Basic concepts of sampling; simple random; stratified; systematic; one stage, two stage and multi stage cluster sampling; estimation of total and mean by ratio and regression ;estimation of proportion and ratio; determining sample size, most efficiency of selection; sampling under restrictions and non – sampling errors.		

ST 366	Operations Research	3 credits
Prerequisite	: ST 332 ,no credits for student who studied AM 319	
Linear programming model ; simplex method ; duality theory ; sensitivity analysis ; transportation and assignment problems ; network analysis; linear programming by PERT/CPM; dynamic programming; use of computer packages.		

ST 376	Data Analysis and Computing with Statistical Packages	3 credits
Prerequisite	: ST 212 , or ST 217 or ST 319	
Choosing the right data analysis technique; introduction to major statistical packages; data entry and manipulation; implementing standard analyses interpreting; real life applications; Monte Carlo simulation and programming new statistical methods.		

ST 386	Introduction to Biostatistics	3 credits
Prerequisite	: ST 212 , or ST 217 or ST 319	
Basic concepts of biostatistics; vital statistics ; standardization ; life table and application; epidemiological analysis; clinical trial; logistic regression ; survival analysis.		

ST 422	Mathematical Statistics 2	3 credits
Prerequisite	: ST 322	

Interval estimation ; elementary decision making ; hypotheses testing; Neymann – Pearson lemma; most powerful test ; uniformly most powerful test; likelihood ratio tests; chi-square goodness-of-fit test ; sequential probability ratio test ; simple linear model.

ST 428	Special Topics in Actuarial Science	3 credits
Prerequisite	: studied all compulsory in Actuarial Science courses level 300	

Interesting topics or new issues in actuarial science which are not normally available in regular departmental courses , determined by instructor or invited lecturer.

ST 431	Introduction to Experimental Designs	3 credits
Prerequisite	: TU 155 or ST 212	

Basic principles of experimental designs; completely randomized design; randomized complete block design; Latin squares design; estimating missing values; incomplete block design; split plot; factorial; confounding; fractional factorial; analysis of covariance; choosing the most suitable design ; use of statistical packages.

ST 436	Introduction to Statistical Decision Analysis	3 credits
Prerequisite	: ST 321 or ST 326	

Concepts of problem solving process; nonprobabilistic and probabilistic criteria for decision making under uncertainty; Bayes decisions; elementary utility theory; statistical inference in decision theory; sequential decisions; business applications.

ST 438	Time Series and Forecasting	3 credits
Prerequisite	: ST 212 or ST 217	

Introduction to quantitative forecasting; properties and types of time series data; regression method to forecast time series; smoothing techniques; autoregressive integrated moving average models ; use of statistical packages and applications with real datasets.

ST 439	Demography 2	3 credits
Prerequisite	: ST 339	

Data analysis technique of marriage and fertility ; morbidity and mortality; population distribution and migration ; life table construction ; introduction to labor force analysis; population estimation and projection; advanced technique for life table construction; application of life table construction technique ; population model; estimation of population statistic from incomplete data and related new technique; use of packages.

ST 446	Introduction to Risk Theory	3 credits
Prerequisite	: ST 321 or ST 326	

Probabilistic models for insurance systems; frequency and severity distribution; individual and collective risk models; ruin theory; reinsurance and applications.

ST 447	Mathematics of Life Insurance 2	3 credits
Prerequisite	: ST 347	

Multiple life functions ; multiple decrement models for single life and applications of multiple decrement theory ; insurance models including expenses.

ST 449	Seminar in Actuarial Science	3 credits
Prerequisite	: ST 447	

Seminar and research on topics of interest in Actuarial science under supervision of instructor or invited lecturer; objective is doing academic search; report and presentation for discussions and comments.

ST 451	Research Methodology in Social Sciences	3 credits
Prerequisite	: ST 217 or ST 319	

Definition and types of research; ethics of researcher; research proposal; research designs; research procedure and analysis; research report writing and research publishing; case study using statistical packages program.

ST 457	Research Methodology	3 credits
Prerequisite	: ST 351 or ST 376	

Definition and types of research; ethics of researcher; research proposal; research designs; research procedure; data processing using statistical packages; data analysis; research report writing; field work; research presentation.

ST 467	Introduction to Stochastic Processes	3 credits
Prerequisite	: ST 321 or ST 326	

Makov chains and Makov process; Poisson process; birth and death process; queing theory; stationary process; reliability; simulation; applications for the problems solving.

ST 486	Applied Multivariate Analysis	3 credits
Prerequisite	: ST 332 or ST 338 or ST 431	

Introduction to multivariate ; estimation and hypotheses testing about mean vector and covariance matrices of multivariate distributions; principal components analysis; factor analysis ; canonical correlation ; discriminant analysis; cluster analysis ; use of statistical packages.

ST 494	Special Project 1	1 credit
Prerequisite	: 1. 4th year student And 2. ST 332 and ST 351	

Study and research on topics of interests and related to statistics under the supervision of advisor ; proposal presentation.

ST 495	Special Project 2	2 credits
Prerequisite	: ST 494	

Integrated statistical theory and analysis for problem solving ; research process on topics of interests under the supervision of advisor ; writing report and presentation.

ST 497	Special Topics in Statistics	3 credits
Prerequisite	: studied all compulsory courses level 300	

Interesting topics or new issues in statistics which are not normally available in regular departmental courses , determined by instructor or invited lecturer.