KENYATTA UNIVERSITY
DEPARTMENT OF MATHEMATICS & ACTUARIAL SCIENCE

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BSc. (Actuarial Science)

2nd Year Units	
1st Semester Units	**2nd Semester Units**
SAC 201 : Principles of Law	SAC 203 : Actuarial Mathematics I
SAC 202 : Models in Actuarial Mathematics	SAC 204 : Risk Management
SAC 205 : Financial Mathematics	SAC 206 : Computational Actuarial Science
SMA 200 : Calculus II	SMA 201 : Calculus III
SMA 203 : Linear Algebra II	SST 205 : Probability and Statistics II
SST 204 : Probability and Statistics I	SST 201 : Operations Research I

3rd Year Units	
1st Semester Units	**2nd Semester Units**
Core	**Core**
SAC 300 : Stochastic Differential Equations	SAC 302 : Financial Mathematics
SAC 301 : Actuarial Mathematics II	SAC 305 : Investment and Asset Management I
SAC 304 : Pension Mathematics	SAC 306 : Life Assurance
SAC 308 : General Insurance	SAC 307 : Financial Economics
SAC 310 : Economic Time Series modelling	SAC 311 : Financial Time Series Analysis
SST 305 : Theory of Estimation	SST 306 : Tests of Hypothesis I
	SAC 312 : Industrial Attachment (One Unit)
Electives	
SMA 330 : Numerical Analysis I	**Electives**
SST 308 : Designs and Analysis of Sample Surveys I	SST 307 : Applied Statistical Methods
	SST 304 : Multivariate Statistical Methods I

4th Year Units	
1st Semester Units	**2nd Semester Units**
Core	**Core**
SST 409 : Stochastic Processes	SAC 405 : Loss Distributions and Credibility Theory
SAC 402 : Principles of Financial Management	SAC 410 : Probability Modeling
SAC 406 : Computational Finance	SAC 401 : Survival Models
SAC 407 : Project in Actuarial Science (Two	SAC 404 : Investments and Asset Management II

units) SAC 409 : Risk Theory **Electives** SST 410 : Operations Research II SST 412 : Designs and Analysis of Experiments SAC 400 : Mathematics of Demography and Graduation	**Electives** SST 414 : Multivariate Statistical Methods II SST 415 : Tests of Hypothesis II SAC 408 : Theory of Business and Decisions

BSc. (Mathematics and Computer Science)

2nd Year Units	
1st Semester Units	**2nd Semester Units**
SMA 200: Calculus II SMA 202: Linear Algebra I SMA 230: Vector Analysis SST 204: Probability and Statistics I SCO 202: Event Driven Programming SCO 204: Data Structures and Algorithms SCO205: Foundations of Artificial Intelligence	SMA 201: Calculus III SMA 203: Linear Algebra II SMA 204: Algebraic Structures SST 205: Probability and Statistics II SCO 203: Software Testing and Quality Assurance SCO 206: Database Systems SCO 207: Web development Technologies
3rd Year Units	
1st Semester Units	**2nd Semester Units**
Applied Mathematics Option SMA 300: Real Analysis I SMA 335: Ordinary Differential Equations I SCO 300: Computer Networks (SMA 491) SMA 330: Numerical Analysis I SMA 333: Fluid Mechanics I SMA 390: Scientific Programming SCO 303: Simulation and Modeling (SMA496) SMA 399: Industrial/Institutional attachment (equivalent to one unit) **Pure Mathematics Option** SMA 300: Real Analysis I SMA 335: Ordinary Differential Equations I SCO 300: Computer Networks (SMA 491)	**Applied Mathematics Option** SCO 305: Computer Graphics SMA 305: Complex Analysis I SMA 332: Methods of Applied Mathematics I SMA 334: Fluid Mechanics II SMA 336: Ordinary Differential Equations II SMA 337: Dynamics I (Former SMA 231) SMA 391: Object Oriented Programming SMA 393: Theory of Computation SCO 307: Human Computer Interface SMA 399: Industrial/Institutional attachment (equivalent to one unit) **Pure Mathematics Option** SCO 305: Computer Graphics SMA 301: Real Analysis II

SMA 302: Group Theory SCO 307: Human Computer Interface SCO 303: Simulation and Modeling (SMA496) SMA 399: Industrial/Institutional attachment (equivalent to one unit)	SMA 303: Ring Theory SMA 304: Number Theory SMA 305: Complex Analysis I SMA 390: Scientific Programming SMA 391: Object Oriented Programming SMA 393: Theory of Computation or SMA 399: Industrial/Institutional attachment (equivalent to one unit)
Statistics Option SMA 300: Real Analysis I SMA 335: Ordinary Differential Equations I SCO 300: Computer Networks SMA 390: Scientific Computing SST 305: Theory of Estimation SST 306: Tests of Hypothesis I SCO 303: Simulation and Modeling (SMA496) SMA 399: Industrial/Institutional attachment (equivalent to one unit)	**Statistics Option** SCO 305: Computer Graphics SMA 305: Complex Analysis I SMA 391: Object Oriented Programming SMA 393: Theory of Computation SST 304: Multivariate Statistical Methods I SST 308: Design and Analysis of Sample Surveys I SCO 303: Simulation and Modeling (SMA496) SCO 307: Human Computer Interface SMA 399: Industrial/Institutional attachment (equivalent to one unit)

4th Year Units

1st Semester Units	**2nd Semester Units**
Applied Mathematics Option SCO 408: Information Systems Management SMA 430: Numerical Analysis II SMA 431: Differential Geometry SMA 432: Partial Differential Equations I SMA 436: Methods of Fluid Mechanics SMA 438: Biomathematics SMA 490: System Analysis and Design SCO 406: Computer Systems Security SCO 411: Neural Networking	**Applied Mathematics Option** SMA 433: Partial Differential Equations II SMA 434: Gas Dynamics SMA 437: Method of Applied Mathematics II SMA 439: Dynamics II (Former SMA 331) SMA 492: Commercial Programming SMA 493: Development of Software Engineering SCO 407: Human Computer Interface SCO 412: Mobile Computing and Wireless Technology SMA 499: Project (equivalent to two units)
Pure Mathematics Option SCO 408: Information Systems Management SMA 400: Topology I SMA 402: Field Theory SMA 404: Complex Analysis II SMA 406: Introductory Functional Analysis SMA 409: Algebraic Geometry	**Pure Mathematics Option** SMA 401: Topology II SMA 403: Galois Theory SMA 405: Group Theory II SMA 407: Measure and Integration SMA 492: Commercial Programming SMA 493: Development of Software Engineering

SMA 490: System Analysis and Design SCO 406: Computer Systems Security SCO 412: Mobile Computing and Wireless Technology SMA 499: Project (equivalent to two units) **Statistics Option** SCO 408: Information Systems Management SMA 468: Statistical Computing SMA 490: System Analysis and Design SST 409: Stochastic Processes SST 411: Time Series Analysis SST 412: Design and Analysis of Experiments SCO 406: Computer Systems Security SCO 411: Neural Networking	SCO 407: Multimedia Technologies SCO 411: Neural Networks **Statistics Option** SMA 492: Commercial Programming SMA 493: Development of Software Engineering SST 413: Measure and Probability SST 414: Multivariate Statistical Method II SST 415: Tests of Hypothesis II SCO 407: Multimedia Technologies SCO 412: Mobile Computing and Wireless Technology SMA 499: Project (equivalent to two units)

BSc. (Statistics and Programming)

2nd Year Units	
1st Semester Units	**2nd Semester Units**
SCS 209 : Internet Technology SMA 200 : Calculus II SST 200 : Introduction to Computer Interactive Statistics SST 201 : Operations Research I SST 204 : Probability and Statistics I SST 206 : Introduction to Data Science and Analytics	SMA 201 : Calculus III SMA 203 : Linear Algebra II SMA 204 : Algebraic Structures SST 202 : Object Oriented Programming SST 203 : Database Systems SST 205 : Probability and Statistics II

3rd Year Units	
1st Semester Units	**2nd Semester Units**
SMA 300 : Real Analysis I SMA 330 : Numerical Analysis SMA 335 : Ordinary Differential Equations I SST 301 : Programming Language for Statistics I SST 303 : Research Methodology SST 305 : Theory of Estimation	SST 300 : Econometrics I (New) SST 302 : Programming Language for Statistics II SST 304 : Multivariate Statistical Methods I SST 306 : Tests of Hypothesis I SST 307 : Applied Statistical Methods SST 308 : Design and Analysis of Sample Surveys I

4th Year Units	
1st Semester Units	**2nd Semester Units**
Core SST 409 : Stochastic Processes SST 411 : Time series Analysis	**Core** SST 400 : Demography and Vital Statistics SST 406 : Statistical Programming

SST 412 : Design and Analysis of Experiments SST 413 : Measure and Probability SST 416 : Data Science and Analytics I SST 420 : Project (two Units) **Elective** SST 401 : Decision Theory SST 404 : Econometrics II SST 408 : Design and Analysis of Sample Surveys II	SST 414 : Multivariate Methods Statistical Methods II SST 415 : Tests of Hypothesis II SST 417 : Data Science and Analytics II (New) **Elective** SST 402 : Bayesian Statistics SST 403 : Non-Parametric Estimation SST 405 : Econometrics III SST 407 : Quality Control Methods SST 410 : Operations Research II