College of Science, Bachelor of Science
Major: Statistics
Check sheet for students graduating in calendar year **2021**

Instructions: Complete I. Core Requirements, II. Restricted Electives, and IV. CLE

I. Core REQUIREMENTS in STAT, MATH, CS, and ENGL (56 credits)

Statistics: Complete ALL of the following courses (36 credits)

STAT 3005	Statistical Methods (Pre: MATH 1225, Co: MATH 1226)	(3)( )
STAT 3006	Statistical Methods (Pre: 3005)	(3)( )
STAT 3104	Probability and Distributions (Pre: (MATH 12261 or 2015 or 1026 or 1526), (STAT 3005 or 3615))	(3)( )
STAT/CMDA/CS 3654	Introductory Data Analytics and Visualization (Pre: 3006, 3104 or 4105, MATH 2204)	(3)( )
STAT 4004	Methods Statistical Computing (Pre: 4105, 4214)	(3)( )
STAT 4024	Communication in Statistics (Pre: 3006, 4204)	(3)( )
STAT 4105	Theoretical Statistics (Pre: MATH 2204)	(3)( )
STAT 4106	Theoretical Statistics (Pre: 4105 with C- or better, MATH 2204)	(3)( )
STAT 4204	Experimental Designs (Pre: 3006)	(3)( )
STAT 4214	Methods of Regression Analysis (Pre: 3006)	(3)( )
STAT 4444	Applied Bayesian Analysis	(3)( )
STAT 4584	Advanced Calculus for Statistics (Pre: MATH 1114 or 2114, 2204)	(3)( )
Or MATH 3224	Advanced Calculus (Pre: MATH 2204, 3034[5])	

Mathematics: Complete ALL of the following courses (14 credits)

MATH 1225[1]	Calculus	(4)( )
MATH 1226[1]	Calculus (Pre: MATH 1225)	(4)( )
MATH 2204	Multivariable Calculus (Pre: MATH 1226)	(3)( )
MATH 2114	Introduction to Linear Algebra (Pre: MATH 1226)	(3)( )

Computer Science: Complete ONE of the following courses (3 credits)

CS 1064[2]	Introduction to Programming in Python	(3)( )
CS 1114	Introduction to Software Design	

English: Complete the following course (3 credits)

ENGL 3764	Technical Writing (Pre: Junior Standing)	(3)( )

II. RESTRICTED ELECTIVES (9 credits)
Complete THREE courses from the following list. At least ONE of the three must be STAT.

STAT 3094	SAS Programming (Pre: 3005)	(3)( )
STAT 3504	Nonparametric Statistics (Pre: 3006)	(3)( )
STAT 4364	Introduction to Statistical Genomics (Pre: 3006, MATH 1226, CS 10X4, 1114)	(3)( )
STAT 4504	Applied Multivariate Analysis (Pre: 3006)	(3)( )
STAT 4514	Contingency Table Analysis (Pre: 3006)	(3)( )
STAT 4524	Sample Survey Methods (Pre: 3006)	(3)( )
STAT 4534	Applied Time Series (Pre: 3006)	(3)( )
STAT/CMDA/CS 4654	Intermediate Data Analytics and Machine Learning (Pre: STAT/CMDA/CS 3654)	
STAT 4664	Computational Intensive Stochastic Modeling (Pre: CMDA 2006 or equivalent[6])	(3)( )
STAT 4804[3]	Elementary Econometrics (Pre: 3005, AAEC 1006)	(3)( )
STAT 4964[4]	Field Study[4]	(3)( )
Or STAT 4994[4]	Undergraduate Research[4]	(3)( )
BIT 3424[5,7]	Introduction to Business Analytics Modeling (Pre: BIT 2406, CS 1054 or 1114 or 1124 or 1705)	(3)( )
BIT 3434[5,7]	Advanced Modeling for Business Analytics (Pre:BIT 3424)	(3)( )
BIT 4544[5,7]	Advanced Methods in Business Analytics (Pre: BIT 3444 or ACIS 2504)	(3)( )
CS 4234[5]	Parallel Computation (Pre: CS 3214)	(3)( )
ECE 4424	Machine Learning (Pre: CS 2114, STAT 3104)	(3)( )
MATH 3054[5]	Programming for Math Problem Solving (Co: MATH 2214)	(3)( )
MATH 4454[5]	Applied Mathematical Modeling	(3)( )
MATH 4225[5]	Elementary Real Analysis (Pre: MATH 3224)	(3)( )
ISE 4404[5]	Statistical Quality Control (Pre: 4105, 4706, ISE 3414)	(3)( )
GEOG 4314[5]	Spatial Analysis in Geographic Information Systems (Pre: GEOG 4084, 2084)	(3)( )
GEOG 4354[5]	Introduction to Remote Sensing	(3)( )

III. COMMENTS AND INSTRUCTIONS
Footnotes for Sections I and II.

Courses included in calculating "in-major" GPA are all courses listed in Sections I and II, plus all additional STAT, MATH, & CS courses at 3000 or 4000-level and ISE courses at 3400 and 4400.

1   MATH 1225-1226 satisfy the CLE requirement for Area 5. The sequence MATH 1225-1226 is equivalent to taking all of the following: MATH 1205, MATH 1206, and MATH 1224.

2   For transfer students from Computer Science, CS 1705 may substitute for CS 1064.

3   For Economic majors or minors, ECON 4304, Introduction to Econometric Methods, can substitute for STAT 4804.

4   A maximum of 3 credits from either 4964, Field Study (for internship or other summer experience), or STAT 4994, Undergraduate Research, may count as a Statistics elective with prior approval from the department.

5   An upper-level course that is not offered by the Department of Statistics. Be aware of *all* prerequisites.

6   CMDA 2006 is equivalent to all of the following: STAT 3006, STAT 3104, MATH 2214, (MATH 2204 or MATH 2204H or MATH 2224 or MATH 2224H or MATH 2406H).

7   Be aware that priority enrollment is given to BIT majors.

Prerequisites
Some courses in the major requirements and electives might have prerequisites not shown. Students are required to double check course prerequisites and equivalents. Please see your advisor or consult the Undergraduate Course Catalog for more information.

Progress Toward Degree *(conditions required for continuing in the major):*
(1)   Within the first two attempts, including attempts ending in course withdrawal, students must earn a C- or better in all MATH, STAT, or CS designated courses for the degree (or equivalents thereof).

(2)   Upon having attempted 90 semester credits, students must have an in-major GPA of 2.0 or better.

Graduation Requirements
Virginia Tech requires **120** credit hours to graduate. These credits must include the courses required for the major (see above section). Refer to the next page for a list or remaining course requirements. It is recommended that, upon attempting 72 credit hours, students will have completed STAT 3005, 3006, MATH 1225, 1226, 2114, 2204, and CS 1064 or 1114.

To graduate, a student must have at least a 2.0 in-major GPA and overall GPA. If 120 credit hours are reached and a student does not meet the GPA requirement, the student must take additional in-major courses to raise the in-major GPA to a 2.0.

Foreign Language Requirement
Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement

do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.

IV. CURRICULUM FOR LIBERAL EDUCATION
Consult the University Undergraduate Course Catalogue or the Curriculum for Liberal Education Guide at http://www.cle.prov.vt.edu/ for approved courses.

Area 1: Writing & Discourse (6 credits)

_____ (3) ( ) _____ (3) ( )

Area 2: Ideals, Cultural Traditions, and Value (6 credits)

_____ (3) ( ) _____ (3) ( )

Area 3: Society and Human Behavior (6 credits)

_____ (3) ( ) _____ (3) ( )

Area 4: Scientific Reasoning & Discovery (6 credits)

_____ (3) ( ) _____ (3) ( )

Area 6: Creativity & Aesthetic Experience (3 credits)

_____ (3) ( )

Area 7: Critical Issues in a Global Context (3 credits)

_____ (3) ( )

Free Electives (25 credits)

_____ (3) ( ) _____ (3) ( )

_____ (3) ( ) _____ (3) ( )

_____ (3) ( ) _____ (3) ( )

_____ (3) ( ) _____ (4) ( )