UNIVERSITY OF BALTIMORE

DOCUMENT N: COURSE AND PROGRAM DEVELOPMENT COVER SHEET

See Course and Program Development Policy and Procedures for Instructions

SCHOOL: LAW ❑	MSB ❑	YGCLA X❑	**Contact Name**: Peggy Potthast	**Phone**: x5342
DEPARTMENT / DIVISION: CLA Dean's Office				
SHORT DESCRIPTION OF PROPOSAL (state name of action item 1-20 and course name, code & number / program affected):				
MATH 115 Introductory Statistics				
PROPOSED SEMESTER OF IMPLEMENTATION:	Fall X❑	Spring ❑	Year: 2007	

Box 1: TYPE OF ACTION	ADD(NEW) X ❑	DEACTIVATE ❑	MODIFY ❑	OTHER ❑
Box 2: LEVEL OF ACTION	Non-Credit ❑	Undergraduate X ❑	Graduate ❑	OTHER ❑

	Box 3: ACTION ITEM (check appropriate boxes)	DOCUMENTS REQUIRED (see box 4 below)	IMPACT REVIEWS (see box 5 on back)	APPROVAL SEQUENCE (see box 6 on back)
	1. Experimental Course [1]	NOP	a, c, e	AC
	2. Course Title	NO		ABCD
	3. Course Credits	NO		ABCD
	4. Course Number	NO		ABCD
	5. Course Level	NO		ABCD
	6. Pre & Co-Requisite	NO		ABCD
	7. Course Description	NOP		ABCD
x	8. New Course	NOP		ABCDEF
	9. Deactivate a Course	NO		ABCDEF
	10. Program Requirements	NO	b, c, d, e	ABCDEF
	11a. UG Specialization (24 credits or less)	NO	a, b, c, d, e	ABCDEF
	11b. Masters Specialization (12 credits or less)	NO	a, b, c, d, e	ABCDEF
	11c. Doctoral Specialization (18 credits or less)	NO	a, b, e	ABCDEF
	12. Closed Site Program	NOT	e	ABCDHIK
	13. Program Suspension [9]	NO,5	a, e	ABCDEGIK
	14a. Certificate Program (ug/g) exclusively within existing degree program	NO	a, c, e	ABCDEFHIK
	14b. Certificate Program (ug/g) where degree programs do not exist or where courses are selected across degree programs (12 or more credits)	NOQR, 6	a, c, e	ABCDEFHJL
	15. Off-Campus Delivery of Existing Program	NO, 4	a, b, c, e	ABCDHIL
	16a. UG Concentration (exceeds 24 credit hours)	NO, 5	a, c, d, e	ABCDEFGHJL
	16b. Masters Concentration (exceeds 12 credit hours)	NO, 5	a, c, d, e	ABCDEFGHJL
	16c. Doctoral Concentration (exceeds 18 credit hours)	NO, 5	a, c, d, e	ABCDEFGHJL
	17. Program Title Change	NO, 5	a, c, d, e	ABCDEFGHJL
	18. Program Termination	NO, 10	d, e	ABCDEFGHIK
	19. New Degree Program	NOQR, 3,8	a, c, d, e	ABCDEFGHJL
	20. Other	Varies	Varies	Varies

Box 4: DOCUMENTATION (check boxes of documents included)					
x	N. This Cover Sheet		Q. Full 5-page MHEC Proposal		T. Other
x	O. Summary Proposal		R. Financial Tables (MHEC)		
x	P. Course Definition Document		S. Contract		

1. Approval of experimental course automatically lapses after two offerings unless permanently approved as a new course.
2. Codes: a) Library Services (Langsdale or Law) b) Office of Technology Services c) University Relations d) Admissions
3. Letter of Intent is required by USM at least 30 days before a full proposal can be submitted. Letter of Intent requires only the approval of the dean and the provost and is forwarded to USM by the Office of the Provost.
4. One-page letter to include: Program title & degree/certificate to be awarded; resources requirements; need and demand; similar programs; method of instruction; and oversight and student services (MHEC requirement)
5. One-page letter with description and rational (MHEC requirement)
6. One or two-page document that describes: centrality to mission; market demand; curriculum design; adequacy of faculty resources; and assurance program will be supported with existing resources. (MHEC requirement)
7. Learning objectives, assessment strategies; fit with UB strategic plan
8. Joint Degree Program or Primary Degree Programs require submission of MOU w/ program proposal. (MHEC requirement)
9. Temporary suspension of program to examine future direction; time not to exceed two years. No new students admitted during suspension, but currently enrolled students must be given opportunity to satisfy degree requirements.

DOCUMENT N: COURSE AND PROGRAM DEVELOPMENT COVER SHEET (Page 2 of 2)

SCHOOL: LAW ❑ MSB ❑ YGCLA X❑
SHORT DESCRIPTION OF PROPOSAL (state name of action item 1-20 and course name, code & number / program affected):
New course – MATH 115 Introductory Statistics

10. Provide:
    a. evidence that the action is consistent with UB mission and can be implemented within the existing program resources of the institution.
    b. proposed date after which no new students will be admitted into the program;
    c. accommodation of currently enrolled students in the realization of their degree objectives;
    d. treatment of all tenured and non-tenured faculty and other staff in the affected program;
    e. reallocation of funds from the budget of the affected program; and
    f. existence at other state public institutions of programs to which to redirect students who might have enrolled in the program proposed for abolition.
11. University Council *review* (for a recommendation to the President or back to the Provost) shall be limited to curricular or academic policy issues that may potentially affect the University's mission and strategic planning, or have a significant impact on the generation or allocation of its financial resources.

Box 5: IMPACT REVIEW	SIGNATURES (see procedures for authorized signers)	DATE
a. Library ❑ No impact ❑ Impact statement attached	Director or designee:	
b. OTS ❑ No impact ❑ Impact statement attached	CIO or designee:	
c. University Relations ❑ No impact ❑ Impact statement attached	Director or designee:	
d. Admissions ❑ No impact ❑ Impact statement attached	Director or designee:	
e. Records ❑ No impact ❑ Impact statement attached	Registrar or designee:	

Box 6: APPROVAL SEQUENCE	APPROVAL SIGNATURES	DATE
A. Department / Division	Chair: Margaret J. Potthast	10/18/06
B. Final faculty review body within each School	Chair: Thomas E. Carney	10/24/06
C. College Dean	Dean: [signature]	10/29/06
D. Provost and Senior Vice President for Academic Affairs	Provost: [signature]	11/3/06
E. Curriculum Review Committee (UFS subcommittee)	Chair: [signature]	11/7/06
F. University Faculty Senate (UFS option)	Chair:	
G. University Council (see # 11 above)	Chair:	
H. President	President:	
I. Board of Regents – notification only		
J. Board of Regents – approval		
K. MHEC – notification only		
L. MHEC – approval		
M. Middle States Association notification	Required only if the mission of the University is changed by the action	

UNIVERSITY OF BALTIMORE

DOCUMENT O: SUMMARY PROPOSAL

See Course and Program Development Policy and Procedures for Instructions

SCHOOL: LAW ☐ MSB ☐ YGCLA X☐	**Contact Name**: Peggy Potthast	**Phone**: x5342
DEPARTMENT / DIVISION: CLA Dean's Office		
SHORT DESCRIPTION OF PROPOSAL (state action item 1-23 and course name & number or program affected):		
NEW course – MATH 115 Introductory Statistics		
PROPOSED SEMESTER OF IMPLEMENTATION: Fall X☐ Spring ☐	Year: 2007	

O-1: Briefly describe what is being requested:

We are requesting to add a new course, MATH 115 Introductory Statistics, to the curriculum to meet general education needs in mathematics. This is a completely new course and if MATH 115 is approved, APST 308 will be deleted from the curriculum.

For new courses or changes in existing courses (needed by Registrar)		
OLD Title:	Course # / HEGIS Code:	Credits:
NEW Title: Introductory Statistics	Course # / HEGIS Code:	Credits:

O-2: Set forth the rationale for the proposal:

We want to bring the mathematics courses into line with general education mathematics in the State of Maryland as required by MHEC. Using the MATH hegis code makes it clear that this course fulfills a general education mathematics requirement. Discussions with CLA programs who had APST 308 as a requirement in their curricula has resulted in this decision. Several programs (Criminal Justice and Community Studies and Civic Engagement) will require students to take this course as the MATH general education and may also make it a program requirement at the lower level.

University of Baltimore

Document P: Required Format for Course Definition Document

Issued by: Wim Wiewel, Provost and Senior Vice President for Academic Affairs

Effective Date: September 14, 2006

Reviewed by: University Faculty Senate

Include in your course definition items one through 15 using as much space as needed.

1. Date Prepared: **October 18, 2007**

2. Prepared by: Peggy Potthast

3. Department: CLA Dean's Office

4. Course Number(s), including HEGIS code(s): MATH 115

5. Course Title: Introductory Statistics

6. Credit Hours: 3

7. Catalog Description (Paragraph should reflect general aims and nature of the course):

   THIS COURSE SATISFIES THE 3-CREDIT MATHEMATICS GENERAL EDUCATION REQUIREMENT.

   Provides students with an overview of descriptive and inferential statistics. Statistics is inherently applied; the course emphasizes solutions to problems in a variety of applied settings. Measures of location and variability; probability distributions; correlation and regression; sampling and sampling distributions; hypothesis testing and estimation with confidence intervals for means and proportions are explored.

8. Prerequisites: Adequate placement test score or successful completion of MATH 095 *Intermediate Algebra*

9. Faculty qualified to teach course: Khadem, Potthast

10. Course Type / Component (clinical, continuance, discussion, field studies, independent study, laboratory, lecture, seminar, supervision, thesis research, workshop): lecture

11. Suggested approximate class size: 25-30

12. Content Outline (actual outline will follow that of selected text, but these topics should be included):

I. Types of data and appropriate frequency graphs
II. Statistical notation; parameters and statistics
III. Measures of location (mean, median, mode, percentiles); the box plot
IV. Measures of variation (range, variance, standard deviation)
V. Probability distributions; expected value, variance
VI. The normal distributions; using probability tables for the standard normal distribution
VII. Relationships between two interval/ratio variables; the scatterplot; correlation
VIII. Least-square regression; its application and interpretation; pitfalls
IX. Two-way contingency tables (cross-tabs) and marginal distributions
X. Samples and surveys; designing experiments
XI. Sampling distributions (for the mean, the proportion); bias, variability;
XII. Confidence interval estimation
XIII. Logic of hypothesis testing; significance levels; practical v. statistical significance
XIV. Testing hypotheses about the mean and the proportion; Type I and Type II error
XV. T-distributions; using the t-test for significance testing of the mean
XVI. Chi-square tests for inference in two-way tables

13. Learning Goals:

At the conclusion of this course students will:

1. recognize the scale with which data are measured and select an appropriate frequency graph based on that
2. be able to compute the measures of location and variation for small data sets and interpret their meaning in any data set
3. graph a scatterplot for a small data set; interpret a scatterplot for any data set; recognize the relationship between the size and sign of the correlation coefficient and the appearance of a scatterplot
4. graph a regression line and interpret its meaning
5. compute correlation coefficients
6. complete a two-way table for categorical data and compute and interpret associated probabilities
7. define and use terms associated with sampling and hypothesis testing
8. create a confidence interval estimate and explain its meaning
9. conduct a hypothesis test for the mean and for a proportion
    a. establish the hypothesis
    b. test the hypothesis by computing the correct statistical test
    c. make a decision and interpret it

10. do application problems using all of the above tools
11. exhibit understanding of the broad concepts of the course and not just its discrete elements

14. Assessment Strategies:

Practice is key in mathematics and statistics. Assignments and tests should reflect the learning objectives (i.e., include application problems) and not just computational skill.

Daily assignments which assist in incremental development of skills are highly appropriate; some assignments could be graded but opportunity to learn through practice is important even if they are not graded.

Frequent (weekly) quizzes are encouraged so that students do not fall behind.

Unit tests and/or take-home problem sets for grades are recommended.

A midterm is optional, but students should have more than one graded assignment or test prior to the withdrawal date.

A final examination is required.

15. Suggested Text(s) and Materials (example: textbooks, equipment, software, etc.):

A uniform text and course outline (both determined by faculty) will be used for all sections of this course taught in a given semester. Integrated use of a graphing calculator (TI-83 Plus, TI-83, TI-84) or another calculator and/or use of a spreadsheet (MSExcel) is likely.

Johnson, R.A. (2006). *Statistics: Principles and Methods.* (5th ed.) John Wiley & Sons, Inc.

McClave, J. T., and Sincich, T. (2006). *First Course in Statistics.* (9th ed.). Prentice Hall.

Mann, P.S. (2007). *Introductory Statistics.* (6th ed.) John Wiley & Sons, Inc.

Moore, D.S. (2006). *The Basic Practice of Statistics.* (4th ed.). W.H. Freeman and Company.

Sullivan, M. III (2007). *Fundamentals of Statistics.* (2nd ed.). Prentice Hall.