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## RECORD OF WORK DONE

[ \* \* \* \* \* ]  
[ AT THE GRADUATE LEVEL ]  
[ \* \* \* \* \* ]

## \* \* \* \* \* ACADEMIC PROGRAM \* \* \* \* \*

School: ARTS & SCIENCES  
Division: GRADUATE ARTS & SCIENCES  
Degree Program: MASTER OF ARTS  
Graduate Group: APPLIED MATH & COMPUTATNL SCI.

## \* \* \* \* \* UNIVERSITY OF PENNSYLVANIA COURSE WORK \* \* \* \* \*

## Fall 2018 GRADUATE ARTS &amp; SCIENCES

AMCS	602	ALGEBRAIC TECHNIQUES I: Algebraic Techniques for Applied Math and Computational Science I	1.00	CU	A
STAT	970	MATHEMATICAL STATISTICS	1.00	CU	A+
		Term Statistics:	2.00	CU	GPA 4.00
		Cumulative:	2.00	CU	GPA 4.00

## Spring 2019 GRADUATE ARTS &amp; SCIENCES

AMCS	999	IND STUDY & RESEARCH	1.00	CU	A
ENM	531	DATA-DRIVEN MODELING	1.00	CU	A
STAT	991	SEM IN ADV APPL OF STAT: Optimization Methods in Machine Learning	1.00	CU	A
		Term Statistics:	3.00	CU	GPA 4.00
		Cumulative:	5.00	CU	GPA 4.00

## Fall 2019 GRADUATE ARTS &amp; SCIENCES

ESE	500	LINEAR SYSTEMS THEORY	1.00	CU	A
ESE	680	SPECIAL TOPCS IN ESE	1.00	CU	A
MATH	648	PROBABILITY THEORY	1.00	CU	A
		Term Statistics:	3.00	CU	GPA 4.00
		Cumulative:	8.00	CU	GPA 4.00

## Spring 2020 GRADUATE ARTS &amp; SCIENCES

AMCS	990	MASTERS REG TUITION			
		Term Statistics:	0.00	CU	
		Cumulative:	8.00	CU	GPA 4.00

## \* \* \* \* \* COMMENTS \* \* \* \* \*

Passed Doctoral Qualifications Evaluation: 08-15-18

## \* \* \* \* \* NO OFFICIAL ENTRIES BEYOND THIS POINT \* \* \* \* \*

# TRANSCRIPT INTERPRETATION

## GENERAL INFORMATION

The official signature of the Registrar is white and appears on the front of this document in the upper right. Reject document as official if signature is distorted.

## Course Numbering System

1-399	Undergraduate courses
400-499	Mixed courses primarily for Undergraduate students
500-599	Mixed courses primarily for Graduate students
600-989	Graduate courses
990-999	Graduate individual study (thesis/dissertation) courses

## Course Units, Semester Hours and Credit Hours

Credit information appears to the right of the course information on the transcript.

Effective Spring 2014, a course unit should be converted to Semester Hours at a ratio of 1:4. Previous to Spring 2014 a course unit should be converted to Semester Hours at a ratio of 1:3.

A course unit (CU) generally represents one course that meets for 3 hours per week of class time, 4 hours of laboratory, or 5 hours of class time in beginning language courses, in a course that lasts for one term (semester).

A semester hour (SH) is defined as one hour per week of class time per term, or equivalent in other course-related activities.

Courses for which no credit is awarded appear with parentheses around their credit value, for example (1.00).

Penn Equivalent Credit is added to the credit total under the last term appearing on the transcript. It includes internal and external transfer credit, advanced placement credit, and credit by examination.

An H or GH preceding the course number indicates an honors course.

Free-form text included in current transcripts is concluded by §.

At the end of the transcript message NO OFFICIAL ENTRIES BEYOND THIS POINT appears.

## Key to Grades

### Term and Cumulative Averages

Not all schools use grade-point averages on the transcript. When averages appear, they are calculated according to this scale (except for the School of Dental Medicine):

A* 5.0	B+ 3.3	C+ 2.3	D+ 1.3
A+ 4.0	B 3.0	C 2.0	D 1.0
A 4.0	B- 2.7	C- 1.7	D- 0.7
A- 3.7			F 0.00

### Key to Wharton Graduate Grades, Effective Summer 2006

A+ 4.00	B+ 3.33	C+ 2.33	D+ 1.33
A 4.00	B 3.00	C 2.00	D 1.00
A- 3.67	B- 2.67	C- 1.67	D- 0.67
			F 0.00

## INTERPRETING GRADES

The various schools and divisions of the University use different grading systems. The first section of the transcript, ACADEMIC PROGRAM, includes school division, and degree information. Find the table that corresponds to that information below. Exceptions will be noted in the appropriate table. For all schools NR = no grades reported for course and GR = no grade reported for student.

Table 1

### Annenberg School of Communications

### Graduate Arts & Sciences

### Graduate School of Education

**School of Design**, formerly known as Graduate School of Fine Arts  
**Ph.D. programs** – All PhD programs and School of Engineering and applied sciences Graduate and executive masters programs, effective Spring, 2003 (see Table 3 for data prior to Spring 2003)

**Law Students**, when taking courses outside the Law School: otherwise see Table 5 & Table 6

A+,A,A-	Distinguished
B+,B,B-	Good (in Annenberg, B- = Unsatisfactory)
C+,C,C-	Unsatisfactory
D+,D	Poor
D-	Poor (not used for Grad. Ed. Annenberg)
F	Failure
P	Pass = A+ to D- (not used for Ph.D. Annenberg, Fine Arts-Harrisburg)
S	Satisfactory progress (not used for Law students)
U	Unsatisfactory (not used for Law students)
I	Incomplete
I*	Permanent Incomplete (Ph.D. only)
W	Withdrew (Ph.D., Annenberg, Fine Arts Harrisburg only)
AUD	Audit (not used for Law students)

Table 2

### College Arts & Sciences, undergraduate

### College of General Studies

### College of Liberal and Professional Studies

### Summer Sessions

### School of Nursing, undergraduate (effective Fall, 1994)

### Wharton Evening School (effective Fall, 1994)

### Wharton Graduate School (effective Summer, 2006)

### Wharton School, undergraduate (effective Fall, 1994)

### School of Engineering and Applied Science, undergraduate

A+	Distinguished
A,A-	Excellent
B+,B,B-	Good
C+,C,C-	Average
D+,D	Below Average
F	Failure
P	Pass = A+ to D
S	Satisfactory progress
U	Unsatisfactory
I	Incomplete
II	Extended Incomplete (College Only)
I*	Permanent Incomplete
W	Withdrew
AUD	Audit
X	Academic Violation (CGS, Nursing & Engineering)

Table 3

### School of Engineering and Applied Science –

**Undergraduates** through Fall, 1996 (see Table 1 for data effective Spring, 1997)

**Graduate Programs & Executive Management Programs** through Fall, 2002 (see Table 1 for data effective Spring, 2003)

**School of Nursing** (through Summer, 1994) except for Ph.D. programs (see Table 1)

A	Distinguished
B	Good
C	Average (in graduate programs, C = Unsatisfactory)
D	Below Average (in graduate programs, D = Poor)
F	Failure
P	Pass = A+ to D
S	Satisfactory progress
U	Unsatisfactory
I	Incomplete
W	Withdrew
AUD	Audit
X	Academic Violation (undergraduate only)

Table 4

### Dental School

A	Distinguished
B, B+	Good
C, C+	Average
E	Exempt
F	Failure
F/C	Fail then Pass – Repeated Exams
H	Honors
I	Incomplete
IW	Incomplete (Withdrew)
P	Pass

Table 5

**Law School** (through Summer, 1995) except for courses outside the Law school (see Table 1)

O	Outstanding	These grades apply to first year courses in Professional Responsibility
S	Satisfactory	
U	Unsatisfactory	
DD	Distinguished	
E	Excellent	
G	Good	
Q	Qualified	
U	Unsatisfactory, with credit	
UNC	Unsatisfactory, no credit	
F	Failure	
P	Pass	
I	Incomplete	
W	Withdrew	
CR	Credit	

Table 6

**Law School** (effective Fall, 1995) except for courses outside the Law school (see Table 1)

A+	Distinguished
A,A-	Excellent
B+,B,B-	Good
C	Average
CR	Credit
F	Failure
FNC	Failure – No Credit
H	Honors
I	Incomplete
P	Pass
S	Satisfactory Progress
W	Withdrew

Table 7

**School of Social Policy and Practice** (formerly known as School of Social Work, DSW) except DSW program (see Table 8) and Ph.D. program (see Table 1).

CR	Credit (Passed = B or better at graduate level)
F	Failure
NCR	Non-Credit course
I	Incomplete
W	Withdrew
WF	Withdrew, Failing
P	Pass

Table 8

**School of Social Policy and Practice** (formerly known as School of Social Work, DSW) (through Summer, 2002).

A	Distinguished
B	Good
C	Unsatisfactory
F	Failure
I	Incomplete
W	Withdrew (Social Work doctoral only)
WF	Withdrew Failing, (Social Work doctoral only)
AUD	Audit (Social Work doctoral only)

Table 9

**School of Social Policy and Practice** (formerly known as School of Social Work, DSW) (effective Fall, 2002).

A+	Distinguished
A,A-	Excellent
B+,B,B-	Good
C+,C,C-	Average
D	Below Average
F	Failure
CR	Credit (Passed = B or better)
NCR	Non-Credit course
I	Incomplete
W	Withdrew

Table 10

**Wharton Evening School** (through Summer, 1994)

**Wharton School**, undergraduate (through Summer, 1994)

A*	Distinguished
A	Excellent
B	Good
C	Average
D	Below Average
F	Failure
P	Pass = A+ to C (Wharton courses only, not given in Evening School)
I	Incomplete
W	Withdrew
AUD	Audit
NC	No credit (not given in Evening School)
X	Academic Violation

Table 11

**Wharton School**, Executive MBA – (through Spring, 2006)

**Wharton School**, graduate except for Ph.D. programs (see Table 1)

DS	Distinguished
HP	High Pass
P	Pass
I	Incomplete
AUD	Audit
NC	No Credit