Computer Science Ph.D. Course Requirement Waiver Request

ICS Graduate Advising:

My student Pavel S Frolikov already holds an MS degree in Computer Science from University of California, Davis.
I am requesting a waiver of the Computer Science MS course requirements portion of the UCI CS PhD degree requirements because his/her existing MS degree is comparable to our own Computer Science MS degree. A course-by-course mapping of his/her prior graduate course work to our own course requirements is detailed below. The mapping includes the required four CS core courses as well as seven elective courses drawn from CS, Informatics, and/or Statistics (excluding "S" seminar courses and courses numbered 290, 298, 299, and no more than two of 295).

UCI CS Courses (with at least four core)	Completed Equivalent Courses
Core: Data Structures and Algorithms (CS 260, 261 or 263)	
Core: Architecture/Embedded Systems (CS 244 or 250A)	ECS 201A: Computer Architecture
Core: System Software (CS 230, 241 or 243)	
Core: Artificial Intelligence (CS 271 or 273A)	ECS 271: Machine Learning & Discovery
Core: Networks/Multimedia (CS 203, 212 or 232)	ECS 252: Computer Networks
Core: Database Systems (CS 222 or 223)	ECS 265: Distributed Database Systems
Core: Scientific and Visual Computing (CS 206 or 211A)	
Elective: COMPSCI 203 (CS / Informatics / Statistics _____)	ECS 235A: Computer & Information Security
Elective: COMPSCI 205 (CS / Informatics / Statistics _____)	ECS 235B: Foundations of Computer & Information Security
Elective: COMPSCI 295 - Security (CS / Informatics / Statistics _____)	ECS 289M: Network Security and Privacy

Elective: COMPSCI 241 ECS 240: Programming languages
(CS / Informatics / Statistics _____)

Elective: COMPSCI 238 ECS 251: Operating Systems
(CS / Informatics / Statistics _____)

Elective: COMPSCI 201. Foundations of Cryptographic Protocols (Taken at UCI)
(CS / Informatics / Statistics _____)

Elective: COMPSCI 202. Applied Cryptography (Taken at UCI)
(CS / Informatics / Statistics _____)

Official transcripts and descriptions of all equivalent courses are attached. As will be evident, these courses are indeed comparable, and he/she has received grades of B or better in all of them.

Since this student has demonstrated competence in the relevant areas of Computer Science through taking and passing the equivalent courses indicated above, I am requesting that he/she be waived from the taught component of our graduate program once he/she has passed the following additional UCI courses with a grade of B or better: COMPSCI 244. Introduction to Embedded and Ubiquitous Systems and three-quarters of CS 200S

I recognize that this waiver will eliminate any option that the student might have to obtain a UCI Computer Science MS degree, and that it thereby also eliminates an MS-based "exit strategy" in the event that he/she does not successfully complete our PhD program. I have discussed this with the student and we are both comfortable requesting this waiver.

Student: Pavel S Frolikov 03/01/2024
(signature) (printed name) (date)

Faculty Member: Gene Tsudik 03/02/2024
(signature) (printed name) (date)

PAVEL S FROLIKOV ID 914-694-162

Name: Student:

GRADUATE ACADEMIC RECORD

DEGREE AWARDED: 24-MAR-23
MASTER OF SCIENCE
CANDIDATE: 14-FEB-23
MAJOR(S): COMPUTER SCIENCE

ADMITTED: FALL QUARTER 2021

INSTITUTION CREDIT:

FALL QUARTER 2021

CURRENT COLLEGE(S): GRADUATE STUDIES
CURRENT MAJOR(S): COMPUTER SCIENCE

COURSE	NUMBER	TITLE	GRADE	UNITS	GRD PTS
ECS	235A	COMPUTER & INFO SECURITY	A	4.00	16.00
ECS	299	RESEARCH	S	7.00	.00
ECS	390	TEACH COMP SCI	S	1.00	.00

	COMPL	ATTM	PSSD	GPTS	GPA
TERM:	12.00	4.00	4.00	16.00	4.000
UC CUM:	12.00	4.00	4.00	16.00	4.000

WINTER QUARTER 2022

COURSE	NUMBER	TITLE	GRADE	UNITS	GRD PTS
ECS	201A	COMPUTER ARCHITECTURE	A	4.00	16.00
ECS	235B	COMPUTER & INFO SECURITY	A	4.00	16.00
ECS	299	RESEARCH	S	4.00	.00

	COMPL	ATTM	PSSD	GPTS	GPA
TERM:	12.00	8.00	8.00	32.00	4.000
UC CUM:	24.00	12.00	12.00	48.00	4.000

SPRING QUARTER 2022

COURSE	NUMBER	TITLE	GRADE	UNITS	GRD PTS
ECS	252	COMPUTER NETWORKS	A	4.00	16.00
ECS	271	MACHINE LEARN & DISCOVER	A	4.00	16.00
ECS	299	RESEARCH	S	4.00	.00

	COMPL	ATTM	PSSD	GPTS	GPA
TERM:	12.00	8.00	8.00	32.00	4.000
UC CUM:	36.00	20.00	20.00	80.00	4.000

FALL QUARTER 2022

COURSE	NUMBER	TITLE	GRADE	UNITS	GRD PTS
ECS	251	OPERATING SYSTEMS	A	4.00	16.00
ECS	265	DISTRIBUTED DATABASE SYS	A-	4.00	14.80
ECS	299	RESEARCH	S	4.00	.00

	COMPL	ATTM	PSSD	GPTS	GPA
TERM:	12.00	8.00	8.00	30.80	3.850
UC CUM:	48.00	28.00	28.00	110.80	3.957

WINTER QUARTER 2023

COURSE	NUMBER	TITLE	GRADE	UNITS	GRD PTS
ECS	240	PROGRAMMING LANGUAGES	A-	4.00	14.80
ECS	289M	SECURITY	A	4.00	16.00
ECS	299	RESEARCH	S	4.00	.00

	COMPL	ATTM	PSSD	GPTS	GPA
TERM:	12.00	8.00	8.00	30.80	3.850
UC CUM:	60.00	36.00	36.00	141.60	3.933

********** CONTINUED ON NEXT COLUMN **********

CONTINUED

********** TRANSCRIPT TOTALS **********

TOTAL UNITS COMPLETED: 60.00 UC GPA: 3.933
UC BALANCE POINTS: 33.6

********** MEMORANDA **********

UNIVERSITY REQUIREMENTS:

PREVIOUS DEGR:
BACHELOR OF SCIENCE 03/01/21
UNIV CALIF SANTA CRUZ

END OF RECORD

OFFICIAL UC DAVIS TRANSCRIPT COMPUTER PRODUCED ON 03/01/24

TRANSCRIPT OF:

PAVEL S FROLIKOV

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ISSUED TO:

PAVEL FROLIKOV
PSFROLIKOV@UCDAVIS.EDU

Brian R. Hodge, University Registrar

This transcript processed and delivered by Parchment

University of California, Davis

TRANSCRIPT LEGEND

UNITS OF CREDIT/ACADEMIC STANDING

Credit for academic work in the University is evaluated in quarter units, except for the School of Law and the Veterinary School of Medicine, which are on the semester system. One quarter unit represents three hours of work per week by the student, including both class attendance and preparation. Laboratory and discussion sections may or may not be given unit value. To convert quarter units to semester units, multiply by 2/3; from semester to quarter units, multiply by 3/2. Undergraduate students are considered in good academic standing if they: 1) maintain quarterly and cumulative grade point averages of 2.000 or greater; and, 2) maintain the required minimum progress standards. Graduate and professional school students with scholarship deficiencies are subject to action at the discretion of their respective deans.

GRADING SYSTEM

The Grading System at the University of California, Davis is as follows:

A	-	excellent
B	-	good
C	-	fair
D	-	barely passing
F	-	not passing (work so poor that it must be repeated to receive recognition)
H	-	Honors (School of Medicine, for approved courses)
I	-	incomplete (work is satisfactory but incomplete for a good cause)
IP	-	in progress
P	-	passed (grade C - or better)
NP	-	not passed
S	-	satisfactory
U	-	unsatisfactory
*	-	pass/no pass or satisfactory/unsatisfactory-student option
NG	-	no grade
Y	-	grade pending

GRADE POINTS are assigned each letter grade as follows:

4.0	=	A+	3.0	=	B	1.7	=	C-	0.0	=	F
4.0	=	A	2.7	=	B-	1.3	=	D+	0.0	=	I
3.7	=	A-	2.3	=	C+	1.0	=	D	0.0	=	NG
3.3	=	B+	2.0	=	C	0.7	=	D-	0.0	=	Y
									n/a	=	IP, P, NP, S, U

COURSE NUMBERING

1	-	99	**Lower Division Courses**
100	-	199	**Upper Division Courses**
200	-	299	**Graduate Courses**
300	-	399	**Professional Courses for Teachers and Nurse Practitioners -** Teacher-training courses offered by the School of Education and in other departments especially intended for teachers or prospective teachers. Included are courses designed to provide instruction to teaching assistants, and certification of family nurse practitioners and physician assistants.
400	-	499	**Other Professional Courses** - Professional courses in departments and schools other than the School of Education.

On top of my MS that I have received from UC Davis, I have completed CS 201, 202, and will be completing COMPSCI 244 in the Spring of 2024. I will have also taken 3 quarters of COMPSCI 200S, by the end of Spring 2024.

(CORE COURSE) ECS 201A: Advanced Computer Architecture
Description Modern research topics and methods in computer architecture. Design implications of memory latency and bandwidth limitations. Performance enhancement via within-processor and between-processor parallelism. Term project involving student-proposed extensions/modifications of work in the research literature. Not open for credit to students who have completed ECS 250A.

(CORE COURSE) ECS 271: Machine Learning & Discovery
Description Artificial intelligence techniques for knowledge acquisition by computers. Fundamental problems in machine learning and discovery. Systems that learn from examples, analogies, and solved problems. Systems that discover numerical laws and qualitative relationships. Projects centering on implementation and evaluation.

(CORE COURSE) ECS 252: Computer Networks
Description Internet protocol based computer networks applications, transport, network layer protocols. High speed LAN technologies: Ethernet, Asynchronous Transfer Mode (ATM). Delay models in data networks: analysis of multi access techniques in polling, ring, random access networks. Multimedia applications requirements and design.

(CORE COURSE) ECS 265: Distributed Database Systems
Description Concepts of distributed database systems and architectures, distributed database design, distributed query processing and optimization, transaction management and concurrency control, heterogeneous and multidatabase systems.

(COMPSCI 203) ECS 235A: Computer & Information Security
Description Modern topics in computer security, including: protection, access control, operating systems security, network security, applied cryptography, cryptographic protocols, secure programming practices, safe languages, mobile code, malware, privacy and anonymity, and case studies from real-world systems. Not open for credit to students who have taken ECS 235.

(COMPSCI 205) ECS 235B: Foundations of Computer & Information Security
Description Theoretical foundations of methods used to protect data in computer and communication systems. Access control matrix and undecidability of security; policies; Bell-LaPadula, Biba, Chinese Wall models; non-interference and non-deducibility; information flow and the confinement problem. Not open for credit to students who have taken ECS 235.

(COMPSCI 295 - Security) ECS 289M: Network Security and Privacy
Description This graduate course covers a selection of current topics in network security and privacy. The course consists of reading and discussing two research papers on a distinct topic each week and completing an original research project. The topics include (1) web tracking, (2)

botnets and DDoS, (3) malware, (4) spam, (5) reputation manipulation, (6) censorship resistance, (7) social networks, and (8) disinformation.

(COMPSCI 241) ECS 240: Programming Languages
Description Advanced topics in programming languages, including formal syntax and semantics, the relation between formal semantics and verification, an introduction to the lambda calculus. Additional topics will include language design principles, alternative programming languages, in-depth semantic theory and models of language implementation.

(COMPSCI 238) ECS 251: Operating Systems
Description Models, design, implementation, performance evaluation in operating systems. Algorithms, internal architectures for single processor OS and distributed systems. Concurrency control, recovery, security. OS kernel-level programming. Special topics embedded systems, real-time system, device driver, NPU (Network Processor Unit).