

The University Scholars Program in CS

1 General Regulation

The regulations can be found on page 22 of the University Bulletin. Here are only the most important facts.

Applicant to the program must meet the following requirements:

1. Must have senior standing (completed ≥ 90 credit hours) and have completed all University Studies requirements.
2. Should apply at the end of the junior year.
3. Must have GPA of at least 3.2 and 3.5 (the latter in CS courses).
4. Follow the current applications for the Graduate School, e.g., have taken GRE.

Few other things:

(i): The current undergraduate advisor will also serve as the graduate advisor until MS project/thesis advisor is chosen.

(ii): In special cases, we could petition for postponing the fulfillment of some requirements. E.g., for an applicant without GRE taken, we could petition for the provisional admission.

(iii): Once admitted to USP, a student enjoys the privileges of graduate students, e.g., can be a TA or RA.

(iii): To apply, each student has to have a jointly planned program of study both for BS and MS. To help you in future preparation of the study program, a sample is provided at the end of this document.

2 USP from CS Perspective

recall that the undergraduate curriculum in CS requires 128 hours of course work. The Master's program under Plan A requires 24 graduate credit hours, and under Plan B 30 credit hours.

Students in USP could have up to 12 graduate credit hours counted towards both BS and MS. That is, under Plan A, they would be required to complete at least 140 credit hours,

at least 24 hours of which will be from graduate level courses. Moreover, at least 12 hours will be from 600-level courses with the same restrictions that are enforced in the Master's program. Under Plan B, they would be required to complete at least 146 credit hours, at least 30 hours of which will be from graduate level courses. Moreover, at least 15 hours will be from the 600-level courses with the same restrictions that are enforced in the Master's program.

In addition to course requirements, the USP students would have to satisfy other graduate program requirements pertaining to all MS students.

To illustrate how this might work, let's suppose that a student took the following undergraduate courses in his/her first three years.

First Year			
<u>Semester I</u>	Hours	<u>Semester II</u>	Hours
CS 100 The Computer Science Profession	1	CS 215 Introduction to Program Design	
CS 115 Introduction to Computer Programming	3	Abstraction and Problem Solving	4
ENG 101 Writing I	3	ENG 102 Writing II	3
MA 113 Calculus I	4	MA 114 Calculus II	4
University Studies 1	3	University Studies 2	3
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Second Year			
<u>Semester I</u>	Hours	<u>Semester II</u>	Hours
CS 216 Introduction to Software Engineering	3	CS 270 Discrete Mathematics	4
EE 280 Design of Logic Circuits	3	CS/EE 380 Microcomputer Organization	3
MA 213 Calculus III	4	PHY 232 General University Physics	4
PHY 231 General University Physics	4	PHY 242 General University Physics Lab.	1
PHY 241 General University Physics Lab.	1	STA 281 Probability and Statistics Using	
University Studies 3	3	Interactive Computer Techniques	3
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Third Year

<u>Semester I</u>	Hours	<u>Semester II</u>	Hours
CS 315 Algorithm Design and Analysis	3	CS 375 Logic and Theory of Computing	3
CS/MA 321 Introduction to Numerical Methods	3	CS 470G Introduction to Operating Systems (CS Elective)	3
University Studies 5	3	CS 471G Networking and Operating Systems (Technical Elective)	3
Natural Science Elective	3	University Studies 7	3
University Studies 6	3	Natural Science Elective	3
Free Elective	3	CS 405G Introduction to Database Systems (Free Elective)	3
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Then the study plan can be as follows.

University Scholars under Plan A

Fourth Year			
<u>Semester I</u>	Hours	<u>Semester II</u>	Hours
CS 450G Fundamentals of Programming Languages (CS Elective)	3	CS 441G Compilers for Algorithmic Languages (CS Elective)	3
CS 499 Senior Design Project	3	CS 505 Advanced Concepts in Database (Technical Elective)	3
CS 515 Algorithm Design (Technical Elective)	3	CS 570 Modern Operating Systems (Free Elective)	3
CS 537 Numerical Analysis (Free Elective)	3	CS 575 Theoretical Aspects of Computing	3
CS 395 Independent Work in CS	1		
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Fifth Year

<u>Semester I</u>	Hours	<u>Semester II</u>	Hours
CS 541 Advanced Compiler Design I	3	CS 650 Problem Seminar	3
CS 645 Computer Networks	3	CS 690 Operating Systems Theory	3
CS 655 Design of Programming Languages	3	CS 748 Master's Thesis Research	-
CS 748 Master's Thesis Research	-		
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Note:

Total number of credit hours (excluding CS748 Master's Thesis Research) = 140

Courses that count for both MS and BS are CS 515, CS 537, CS 505, and CS 570 for a total of 12 credit hours. These courses also fulfill the graduate core courses requirement.

Courses that count for MS:

CS 645, CS 650, CS 655, CS 690, CS 515, CS 537, CS 505, and CS 570 which total to 24 credit hours.

University Scholars enrolled under Plan B.

Fourth Year			
<u>Semester I</u>	Hours	<u>Semester II</u>	Hours
CS 450G Fundamentals of Programming Languages (CS Elective)	3	CS 441G Compilers for Algorithmic Languages (CS Elective)	3
CS 499 Senior Design Project	3	CS 505 Advanced Concepts in Database (Technical Elective)	3
CS 515 Algorithm Design (Technical Elective)	3	CS 570 Modern Operating Systems (Free Elective)	3
CS 537 Numerical Analysis (Free Elective)	3	CS 575 Theoretical Aspects of Computing	3
CS 395 Independent Work in CS	1		
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Fifth Year			
<u>Semester I</u>	Hours	<u>Semester II</u>	Hours
CS 541 Advanced Compiler Design I	3	CS 650 Problem Seminar	3
CS 645 Computer Networks	3	CS 690 Operating Systems Theory	3
CS 655 Design of Programming Languages	3	CS 610 Master's Project	3
CS 612 Independent Work in CS	3		
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Note:

Total number of credit hours (including CS610 Master's Project) = 146

Courses that count for both MS and BS are CS 515, CS 537, CS 505 and CS 570 for a total of 12 credit hours. These courses also fulfill the graduate core courses requirement.

Courses that count for MS:

CS 645, CS 650, CS 655, CS 690, CS 610, CS 612, CS 515, CS 537, CS 505 and CS 570 which total to 30 credit hours