

Master of Science in Computer Science

2 Graduate Program Change 2020-21

I. General Information

The faculty member originating this proposal is to complete sections I and II.

TURN ON help text before starting this proposal by clicking  in the top right corner of the heading. You will need to turn on help text again after any actions that refresh the page including after saving proposals, importing information, or running impact reports.

IMPORT curriculum data from the Catalog by clicking  in the top left corner.

Do not make any changes to any information until the proposal has been launched in Step 4.

Department*

Computer Science

Degree/ Certificate Name* Master of Science in Computer Science

Plan Code* CSCMSCS

Degree Type*

Master of Science

Program Type*

Master's

II. Program Changes

FILL IN ONLY fields required marked with an * after importing data. You will not be able to launch the proposal without completing required fields. **Do not make proposed changes** to the information that was imported until after the proposal has been launched in Step 4. Changes will only be tracked after the proposal is launched

Are you changing admission requirements?* Yes No

Are you changing course requirements? Yes No

Are you changing degree completion requirements? Yes No

Are you changing the primary instructional mode? Yes No

Are you changing program learning objectives? Yes No

If yes, describe changes to learning objectives:

Provide a Brief Summary of Proposed Changes

We are adding a series of sub-plans (eight of them) as part of Exam Track Specialization Options. (see schema view below)

Provide a rationale for each proposed change

We are adding new track to meet the demand of incoming students having interest in cross-disciplinary areas. This track is expected to speed up graduation time. The CS Department can accommodate higher student enrollment.

Do not make any changes to any information until the proposal has been launched in Step 4.

Follow these steps to change the program curriculum:

1. Click on  "View Curriculum Schema." Edit existing cores or click 'Add Core' and name your core (please use a comparable degree program in the current graduate catalog as a template). Edit or add any descriptive text (do not add courses until Step 2). Descriptive text is generally used in the following cores: Plan Description, Plan Admission Requirements, Plan Requirements, Plan Graduation Requirements.
2. There are two options for adding courses (see Step 3 to remove courses): "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculog Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.
3. Click on  "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 2. Select the courses you wish to add. For removing courses click on the  and proceed.

After you have launched proposal, update prospective curriculum here*

Plan Description

Our master's program gives you the opportunity to study different areas, including: Design and analysis of algorithms Operating and distributed systems Computer architecture and networking Computational geometry and robotics Computer graphics and image processing Programming languages and compiler construction Artificial intelligence and expert systems Database design, document analysis, and retrieval Software engineering For more information about your program including your graduate program handbook and learning outcomes please visit the Degree Directory.

Plan Admission Requirements

Application deadlines Applications available on the UNLV Graduate College website. Applicants must submit the following to the Graduate College: An application and official transcripts of all college level work with a minimum GPA of 3.00. Two letters of recommendation concerning the student's potential for succeeding in the graduate program. A set of official transcripts. The results of the Graduate Record Examination current to within five years should be sent directly to the department. The preferred minimum score requirement is 297. The GRE requirement is waived for students participating in the Integrated BS-MS track. In addition, applicants must have completed courses and their prerequisites equivalent to our undergraduate Programming Languages (CS 326), Operating Systems (CS 370), Discrete Mathematics II (MATH 351), and Statistical Methods I (STAT 411) with an average grade of B or better. The Computer Science Admission Committee may elect to admit an outstanding applicant who has not satisfied all of the background requirements on a conditional basis. The student must complete these requirements before full admission to the program is granted. Students who have not completed all the following courses (or equivalent courses) as part of their bachelor's degree may be required to complete them as a condition of their admission. If taken as part of their master's degree program, these courses may count toward the 30 credits required. CS 656 Automata and Formal Languages CS 677 Analysis of Algorithms CS 660 Compiler Construction Additional information about the Integrated BS-MS degree program: Up to nine credit hours of approved graduate-level course work can be taken as technical electives for the grade of B or better during the senior year and those credit hours will be waived for the graduate degree. The GRE requirement is waived for students participating in the Integrated BS-MS track. The following conditions must be met to enroll in the Integrated BS-MS program: A minimum of two semesters of full-time enrollment in B.S. of Computer Science program is required. Applications are normally submitted with two semesters remaining in the senior year. A minimum of 90 credit hours of course work applicable to the B.S. of Computer Science degree with a cumulative GPA of 3.3 or higher must be completed before beginning the joint degree program. Students have to choose the thesis option in the MS degree. Students interested in this program and who also meet the credentials listed above should request a letter of nomination from a

the credentials listed above should request a letter of nomination from a Computer Science faculty member. Submit this letter along with a short resume (no more than two pages) directly to the Department of Computer Science (computerscience.gradcoord@unlv.edu) as well as an application through the Grad Rebel Gateway. All domestic and international applicants must review and follow the Graduate College Admission and Registration Requirements. Students are accepted into a degree program as described in the Graduate Catalog. The faculty and corresponding sub-disciplines and sub-plans within the described programs are subject to change at any time.

Plan Requirements

See Subplan Requirements below. Subplan 1: Thesis Track Subplan 2: Project Track Subplan 3: Integrated BS-MS Track Subplan 4: Exam Track - Foundations and Theory Subplan 5: Exam Track - Cyber Security Subplan 6: Exam Track - AI and Machine Learning Subplan 7: Exam Track - Software Engineering Subplan 8: Exam Track - Data Science and Big Data Subplan 9: Exam Track - Database and Information Retrieval Subplan 10: Exam Track - Graphics and Augmented Reality Subplan 11: Exam Track - Programming Language and Systems

Subplan 1 Requirements: Thesis Track

Total Credits Required: 30

Course Requirements

Computer Science Courses – Credits: 24

Complete 24 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 3 credits outside of CS. Outside credits must be related to the student's research area and be approved by the department graduate committee.

Thesis – Credits: 6

CS 791 Thesis

3 – 6

Degree Requirements

The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. Students must complete 12 credits of 700-level CS courses (excluding thesis). Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690, CS 790, CS 791, CS 792, CS 799, or equivalent courses in another department. In consultation with his/her advisor, a student will organize a thesis committee of at least three departmental members. In addition, a fourth member from outside the department, known as the Graduate College Representative, must be appointed. An additional committee member may be added at the student and department's discretion. Please see Graduate College policy for committee appointment guidelines. The student must submit a thesis approved by their advisor and thesis committee and conforming to the specifications of the Graduate College and pass a final oral examination covering the thesis and relevant course work.

Graduation Requirements

The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. The student must submit and successfully defend his/her thesis by the posted deadline. The defense must be advertised and is open to the public. After the thesis defense, the student must electronically submit a properly formatted pdf copy of their thesis to the Graduate College for format check. Once the thesis format has been approved by the Graduate College, the student will submit the approved electronic version to ProQuest. Deadlines for thesis defenses, format check submissions, and the final ProQuest submission can be found [here](#).

Subplan 2 Requirements: Project Track

Total Credits Required: 30

Course Requirements

Computer Science Courses – Credits: 27

Complete 27 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 3 credits outside of CS. Outside credits must be related to the student's research area and be approved by the department graduate committee.

Project – Credits: 3

CS 790 Master's Project

1 – 3

Degree Requirements

The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. Students must complete 15 credits of 700-level CS courses (excluding the project). Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690, CS 790, CS 791, CS 792, CS 799, or equivalent courses in another department. In consultation with his/her advisor, a student will organize a project committee of at least three departmental members. In addition, a fourth member from outside the department, known as the Graduate College Representative, must be appointed. An additional committee member may be added at the student and department's discretion. Please see Graduate College policy for committee appointment guidelines. The student must complete a computer science project and a report approved by his/her advisor and his/her project committee and pass a final oral examination over the project and relevant course work.

Graduation Requirements

The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. The student must successfully complete a master's project. The student must submit and successfully defend his/her project by the posted deadline. The defense must be advertised and is open to the public.

Subplan 3 Requirements: Integrated BS-MS Track

Total Credits Required: 30

Course Requirements

Required Courses - Credits: 9

Complete the following nine credits or other courses approved by the Graduate Coordinator.

CS 656 Automata and Formal Languages	3
CS 660 Compiler Construction	3
CS 677 Analysis of Algorithms	3

Computer Science Courses – Credits: 15-21

Complete 15-21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 3 credits outside of CS. Outside credits must be related to the student's research area and be approved by the department graduate committee.

Thesis – Credits: 6

CS 791 Thesis	3 – 6
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Degree Requirements

The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. Students must complete 12 credits of 700-level CS courses (excluding thesis). Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690, CS 790, CS 791, CS 792, CS 799, or equivalent courses in another department. In consultation with his/her advisor, a student will organize a thesis committee of at least three departmental members. In addition, a fourth member from outside the department, known as the Graduate College Representative, must be

the department, known as the Graduate College representative, must be appointed. An additional committee member may be added at the student and department's discretion. Please see Graduate College policy for committee appointment guidelines. The student must submit a thesis approved by their advisor and thesis committee and conforming to the specifications of the Graduate College and pass a final oral examination covering the thesis and relevant course work. Students may be released from up to 9 credits of classes towards completion of the M.S. degree as long as the average G.P.A for these classes taken as part of the undergraduate program is a 3.0 or above.

Graduation Requirements

The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. The student must submit and successfully defend his/her thesis by the posted deadline. The defense must be advertised and is open to the public. After the thesis defense, the student must electronically submit a properly formatted pdf copy of their thesis to the Graduate College for format check. Once the thesis format has been approved by the Graduate College, the student will submit the approved electronic version to ProQuest. Deadlines for thesis defenses, format check submissions, and the final ProQuest submission can be found here.

Subplan 4 Requirements: Exam Track - Foundations and Theory

Total Credits Required: 30

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 677 Analysis of Algorithms	3
CS 789 Topics in Advanced Computer Science	3 - 24
CS 758 Computational Geometry	3
CS 656 Automata and Formal Languages	3
CS 715 Advanced Analysis of Algorithms	3

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department, and one from outside). The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. 2. The student must pass a final comprehensive oral examination.

Subplan 5 Requirements: Exam Track - Cyber Security

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 643 Information Assurance	3
CS 645 Internet Security	3
CS 648 Computer Security	3
CS 649 Computer and Network Forensics	3
CS 789 Topics in Advanced Computer Science	3 - 24
CS 665 Computer Networks I	3

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department, and one from outside). The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then

apply for graduation up to two semesters prior to completing his/her degree

requirements. 2. The student must pass a final comprehensive oral examination.

Subplan 6 Requirements: Exam Track - AI and Machine Learning

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 682 Artificial Intelligence	3
CS 781 Automated Deduction	3
CS 782 Expert System Construction	3
CS 783 Genetic Algorithms and Neural Networks	3
CS 789 Topics in Advanced Computer Science	3 - 24

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department, and one from outside). The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the

two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. 2. The student must pass a final comprehensive oral examination.

Subplan 7 Requirements: Exam Track - Software Engineering

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 620 Human-Computer Interaction	3
CS 672 Software Product Design and Development I	3
CS 682 Artificial Intelligence	3
CS 772 Software Architecture	3
CS 789 Topics in Advanced Computer Science	3 - 24

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department, and one from outside). The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. 2. The student must pass a final comprehensive oral examination.

Subplan 8 Requirements: Exam Track - Data Science and Big Data

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 657 Database Management Systems

2

CS 657 Database Management Systems	3
CS 658 Introduction to Data Mining	3
CS 769 Advanced Data Base Management	3
CS 783 Genetic Algorithms and Neural Networks	3
CS 672 Software Product Design and Development I	3
CS 682 Artificial Intelligence	3

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department, and one from outside). The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. 2. The student must pass a final comprehensive oral examination.

Subplan 9 Requirements: Exam Track - Database and Information Retrieval

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 657 Database Management Systems	3
CS 658 Introduction to Data Mining	3
CS 682 Artificial Intelligence	3
CS 769 Advanced Data Base Management	3

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department, and one from outside). The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. 2. The student must pass a final comprehensive oral examination.

Subplan 10 Requirements: Exam Track - Graphics and Augmented Reality

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 669 Introduction to Digital Image Processing	3
CS 680 Computer Graphics	3
CS 682 Artificial Intelligence	3
CS 689 Advanced Computer Science Topics	3

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department. and one from outside). The chair will assign a few

from the department, and one from outside. The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. 2. The student must pass a final comprehensive oral examination.

Subplan 11 Requirements: Exam Track - Programming Language and Systems

Course Requirements

Required Courses - Credits: 9

Complete a total of 9 credits from the following courses.

CS 656 Automata and Formal Languages	3
CS 771 Concurrent Computation	3
CS 789 Topics in Advanced Computer Science	3 - 24

Computer Science Courses - Credits:21

Complete 21 credits of 600- or 700- level Computer Science (CS) courses. Students may complete up to 6 credits outside of CS. Outside credits must be related to computer applications and approved by CS graduate committee.

Degree Requirements

1. The student must pass at least 30 credits of 600- and 700-level courses with grades of C or better. 2. Students must complete 18 credits of 700-level CS courses. 3. (Comprehensive Oral Exam on a Specialized Area) Students must choose one of the specialized areas covered by CS 600/700-level courses and approved by graduate affairs committee. They take 3 courses in the chosen specialized area. Students will form a committee (one chair, 2 other members from the department, and one from outside). The chair will assign a few papers/reading materials to the students, and the committee will give an oral exam to the students on the selected specialized area. Students will have only two attempts to pass the comprehensive oral exam. 4. Courses in which the student earns a grade lower than C cannot be included in his or her program, and the student's total grade point average (GPA) must be 3.00 or higher while in the program. A student whose GPA falls below 3.00 will be placed on academic probation. That student must have an overall GPA of at least 3.00 by the end of two subsequent semesters; otherwise the student will be separated from the graduate program. A student on probation will not be allowed to register for CS 690 or equivalent courses in another department. 5. Exam Track must be declared and approved before completing 19 credit hours of CS coursework.

Graduation Requirements

1. The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing his/her degree requirements. 2. The student must pass a final comprehensive oral examination.

Plan Graduation Requirements

Refer to your subplan for Graduation Requirements. Subplan 1: Thesis Track
Subplan 2: Project Track Subplan 3: Integrated BS-MS Track Subplan 4: Exam Track - Foundations and Theory Subplan 5: Exam Track - Cyber Security
Subplan 6: Exam Track - AI and Machine Learning Subplan 7: Exam Track - Software Engineering Subplan 8: Exam Track - Data Science and Big Data
Subplan 9: Exam Track - Database and Information Retrieval Subplan 10: Exam Track - Graphics and Augmented Reality Subplan 11: Exam Track - Programming Language and Systems

The [Degrees Directory](#) provides current and consistent degree information. Submission of this form indicates acknowledgment and understanding that every department is responsible creating and maintaining accurate and updated program information on the UNLV Degrees Directory.

If the changes included on this form impact the program handbook attach the updated handbook before submitting this form. If you need a Word version of the most recent handbook please email GradCurriculum@unlv.edu.

Degrees Directory Program Entry* Check this box to acknowledge the above statement.

Changes will be applicable to* Current Students
 New Students
 Both Current and New Students

If applicable to current students, changes are Mandatory Optional

Effective Date*

4. LAUNCH proposal by clicking  in the top left corner.

5. After launching the proposal, make all changes and fill in all additional fields.

6. Finish the launch of your proposal by clicking the icon  located in the Proposal Toolbox on left side at top. Make your decision, comment is optional, and click on "Make decision".

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

III. Department Vote Information

Note: This section is to be filled out by the Department Chair on behalf of the committee.

(The role has been assigned to the corresponding person on this step. If incorrect, please notify GradCurriculum@unlv.edu)

1. Review the proposal. Discuss and make appropriate revisions.
2. Fill in vote information.
3. Then go to the proposal toolbox at the top right side. Click on  and select the corresponding decision for the committee. This will enable the proposal to go to the next person on the workflow.

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

Date faculty voted on proposal 11/14/19	Result of vote 14-0-1
Manner of vote in person	

IV. Unit Vote Information

Note: This section is to be filled out by the College Committee Chair on behalf of the committee.

(The role has been assigned to the corresponding person on this step. If incorrect, please notify GradCurriculum@unlv.edu)

1. Review the proposal. Discuss and make appropriate revisions.
2. Fill in vote information.
3. Then go to the proposal toolbox at the top right side. Click on  and select the corresponding decision for the committee. This will enable the proposal to go to the next person on the workflow.

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

Date faculty voted on proposal 2/14/2020	Result of vote 3/0/1
Manner of vote Online	

V. Processing Notes (Graduate College/Registrar Use Only)

**Program Alerts (E.g.
This program is no
longer accepting
applications)**

PS Processing Notes

PS Processing Date

Initials

**Acalog Processing
Notes**

**Acalog Processing
Date**

Initials

Comments for Master of Science in Computer Science

Curriculog	3/4/2020 9:54 am Reply
Graduate Curriculum has approved this proposal on Graduate Programs Committee.	
Curriculog	3/3/2020 8:22 pm Reply
Gregory Moody has approved this proposal on behalf of Graduate Programs Committee. See Graduate Programs Committee Agenda - 3 March, 2020 for more information.	
Curriculog	2/24/2020 10:43 am Reply
Mohamed Trabia has approved this proposal on School/College Associate Dean for Graduate Studies/ Dean.	
Melissa Morris	2/19/2020 9:15 am Reply
The college committee has voted to approve this proposal.	
Curriculog	2/19/2020 9:15 am Reply
Melissa Morris has approved this proposal on School/College Committee.	
Curriculog	2/6/2020 12:46 pm Reply
CS Chair has approved this proposal on Department Chair.	
Curriculog	1/31/2020 12:58 pm Reply
Computer Science Graduate Coordinator has approved this proposal on Graduate Coordinator.	
Curriculog	1/6/2020 1:24 pm Reply
Graduate Curriculum has approved this proposal on Technical Review.	
Curriculog	10/29/2019 3:23 pm Reply
System Administrator Graduate Curriculum has restarted the Technical Review step as a result of participants being added to or removed from the step.	
Curriculog	10/24/2019 2:25 pm Reply
Computer Science Graduate Coordinator has approved this proposal on Originator.	

Graduate Curriculum

10/1/2019 1:36 pm [Reply](#)

Please adjust specialization areas into individual subplans to be able to be supported by our system in applications and tracking processes.

Curriculog

10/1/2019 1:36 pm [Reply](#)

Graduate Curriculum has rejected this proposal on Technical Review.

Curriculog

9/13/2019 3:35 pm [Reply](#)

Jennifer Drennan has approved this proposal on Technical Review.

Curriculog

9/12/2019 2:12 pm [Reply](#)

Computer Science Graduate Coordinator has approved this proposal on Originator.

Curriculog

9/12/2019 2:12 pm [Reply](#)

Computer Science Graduate Coordinator has launched this proposal.