



UNIVERSITY OF CENTRAL FLORIDA

# Graduate Program Handbook - 2023/24

## Master of Science in Computer Vision

---

Reference this handbook to learn about the unique policies, requirements, procedures, resources, and norms for graduate students in the **Master of Science in Computer Vision**.

---



Last updated: June 2023

# Letter of Welcome

Welcome to the Program that offers the Master of Science in Computer Vision at the University of Central Florida. We hope that you will find MSCV to be everything that you expect it to be: inviting, appealing, stimulating, inspiring, challenging and rewarding. We hope that via the courses and the projects that you undertake you are able to build lifelong professional relationships with faculty, staff and fellow-students. We hope that your bold decision to enter the MSCV Program will lead to career success that continues for many years after your graduation.

# Table of Contents

<b>Letter of Welcome .....</b>	<b>i</b>
<b>Navigating Policy and Resources at the University of Central Florida .....</b>	<b>4</b>
<i>How to Use This Handbook .....</i>	<i>5</i>
<i>Who to Contact for Questions.....</i>	<i>5</i>
<i>Graduate School Services.....</i>	<i>6</i>
<b>Introduction/Overview Section .....</b>	<b>7</b>
<i>Complete Name of Degree.....</i>	<i>7</i>
<i>College .....</i>	<i>7</i>
<i>Department.....</i>	<i>7</i>
<i>Program Type.....</i>	<i>7</i>
<i>Program Website.....</i>	<i>7</i>
<i>Year of Program Inception .....</i>	<i>7</i>
<i>Program Overview Narrative .....</i>	<i>7</i>
<i>Student Learning Outcomes/Competencies.....</i>	<i>8</i>
<i>Get Involved .....</i>	<i>8</i>
<b>Curriculum Section.....</b>	<b>9</b>
<i>Admission Requirements.....</i>	<i>9</i>
<i>Degree Requirements.....</i>	<i>9</i>
<i>Time Limits to Degree Completion .....</i>	<i>11</i>
<i>Transfer Credits.....</i>	<i>11</i>
<b>Program and Institutional Policies .....</b>	<b>12</b>
<i>Absences .....</i>	<i>12</i>
<i>Academic Standards/Conduct/Integrity .....</i>	<i>12</i>
<i>Communication.....</i>	<i>12</i>

<i>Continuous Enrollment</i> .....	13
<i>Diversity Statement</i> .....	13
<i>Enrollment in Independent Study Hours</i> .....	14
<i>Golden Rule</i> .....	14
<i>Harassment</i> .....	15
<i>International Students</i> .....	15
<i>Other Relevant Program/Institutional Policies</i> .....	16
<b>Additional Program Details</b> .....	<b>17</b>
<i>Graduation</i> .....	17
<i>Forms</i> .....	17
<i>Useful Links/Resources</i> .....	18

# Navigating Policy and Resources at the University of Central Florida

This handbook is one of many sources to consult as you become familiar with the policies, procedures, requirements, resources, and norms of graduate education at the University of Central Florida.

**ACADEMIC CATALOGS**

These online catalogs can help you quickly locate and save details about our undergraduate and graduate programs. Whether you are a prospective student or already enrolled, you can easily see what the University of Central Florida has to offer!

- Current Undergraduate Offerings - VISIT CATALOG
- Latest Graduate Programs - VISIT CATALOG
- Prior Years' Catalogs - VISIT ARCHIVES

**THE GOLDEN RULE STUDENT HANDBOOK**

**STUDENT LIFE**  
ORLANDO, FL | 73°F

**Student Handbook**

**GRADUATE STUDENT HANDBOOK**  
**Understanding Your Graduate Experience**

- [Student Handbook Intro](#)
- [Financial Matters](#)
- [Role of the College of Graduate Studies](#)

**UCF Regulations**

**Pathways to Success**  
Personal and Professional Development Opportunities

HOME NOTICE ARCHIVES SUBSCRIBE TO NOTIFICATIONS UCF POLICIES

**Chapter 5: Students**

## How to Use This Handbook

This handbook will provide you with important details about many aspects of the MSCV degree, and is a place to find out how to learn more.

## Who to Contact for Questions

Many of your questions about how to meet expectations and thrive as a graduate student will be answered by the various sources of policies, procedures, requirements, resources, and norms listed in this document. Several key positions in this department and on campus are ready to answer your remaining questions:

### **Graduate Program Staff**

Each graduate program will have at least one department staff person typically called a Graduate Student Services Coordinator who serves as a point person for program policy and procedures. Graduate Coordinators are well versed in most elements of graduate education that extend beyond academic instruction in your program and will likely be your first stop for questions related to anything in this handbook.

Diana Poulalion  
Coordinator, Graduate Student Services  
[diana.poulalion@ucf.edu](mailto:diana.poulalion@ucf.edu)  
407-823-3027  
HEC 439B

### **MSCV Program Director, and CRCV Director**

Dr. Niels Da Vitoria Lobo,  
Program Director, Master of Science in Computer Vision  
[nlobo@ucf.edu](mailto:nlobo@ucf.edu)  
407-823-2873  
HEC 252

Dr. Mubarak Shah  
Trustee Chair and Director, Center for Research in Computer Vision  
[mubarak.shah@ucf.edu](mailto:mubarak.shah@ucf.edu)  
407-823-5077  
HEC 245D

## Graduate School Services

### **GRADUATE STUDIES AT UCF**

Graduate programs and their students at UCF are supported at the university-level by the College of Graduate Studies which operates under the leadership of the Dean of Graduate Studies. It works collegially with the Faculty Senate, various committees of the Senate, the deans of the other colleges, and other campus entities that serve graduate students. In essence, the College of Graduate Studies works as a convening authority within the university, providing leadership among campus stakeholders to establish a vision and act on major issues affecting graduate education at UCF. For general graduate inquiries and graduate student services from the Graduate School, please review the [College of Graduate Studies](#) website as an additional resource.

### **COLLEGE OF ENGINEERING AND COMPUTER SCIENCE**

The College of Engineering and Computer Science has an Associate Dean for Graduate Studies with a staff dedicated to helping students at every stage from admission through graduation. Keep in mind your primary contacts as a MScV graduate student lie within the faculty and staff of the department. The day-to-day operations are overseen by the Program Director and the Coordinator, Graduate Student Services. The long-term goals and procedures are established by the Graduate Program Committee, with approval from the department faculty. However, from an individual graduate student's perspective, the most important person in his or her academic life is the faculty advisor/Program Director, a person who will guide students by helping in the selection of courses.



## Introduction/Overview Section

### Complete Name of Degree

Master of Science in Computer Vision

### College

College of Engineering and Computer Science

### Department/Unit

Center for Research in Computer Vision

### Program Type

Master

### Program Website

[Master of Science in Computer Vision – Center for Research in Computer Vision \(ucf.edu\)](https://www.ucf.edu/center-for-research-in-computer-vision/)

### Year of Program Inception

Fall 2021

### Program Overview Narrative

The Master of Science in Computer Vision (MSCV) Program aims to provide technical skills and domain knowledge to those future professionals who seek to acquire expertise in Computer Vision and its related areas. This involves proficiency in acquiring, processing, analyzing, and understanding images, videos, 3D data, and other types of high-dimensional data of the real world. The program consists of a total of 30 credit hours. The fast-growing interests and investments in Artificial Intelligence (AI) in the United States and around the world have to be powered by a well-prepared

workforce. This program contributes to meeting the need created by the United States' shortage of AI personnel.

## Student Learning Outcomes/Competencies

- Provides the MSCV student with:
  - Technical skills to develop Computer Vision Systems
  - Domain knowledge
  - Latest machine learning techniques
  - Practical Employment skills
- Equip the MSCV student with the tools to:
  - Examine the world and solve problems.
  - Use modern technology to benefit society

## Get Involved

As a graduate student at UCF, you have a multitude of opportunities to become involved on campus and in your academic discipline. This involvement often enhances your academic, professional, and personal growth through developing advanced leadership, communication, and collaboration skills. It also provides opportunity for professional networking.

# Curriculum Section

## Admission Requirements

There are 3 entry pathways into the MSCV Program. All 3 require the applicant to meet the requirement for admission to Graduate Studies, which is a 3.0 GPA in an undergraduate degree from an accredited institution or equivalent as evaluated by an agency designated by the College of Graduate Studies.

The first pathway into MSCV is finishing an undergraduate degree with at least a 3.0 GPA in any of Computer Science, Computer Engineering, Mathematics or closely related majors.

The second pathway into MSCV is to have an undergraduate degree in any field (with at least a 3.0 GPA). Applicants without a strong undergraduate background in Computer Science must demonstrate an understanding of the material covered in the following undergraduate courses, by either taking these four courses or by being tested on the material:

**EEL 4768C** Computer Architecture; **COP 4020** Programming Languages; **COP 4600** Operating Systems; and **COT 4210** Discrete Computational Structures

For students lacking the computer science background, the third pathway into MSCV is to have an undergraduate degree (with at least a 3.0 GPA), and show competence in all of the following areas (by taking courses or being tested on the material): 1. Calculus One, Two (maybe also Three) 2. Matrix Algebra 3. Statistics for Engineers 4. Computer Programming with Data Structures 5. Undergraduate-level Robot Vision (Computer Vision) (for example, the CAP4453 course at UCF).

## Degree Requirements

This program requires 30 semester hours of credit at the 5000 and 6000 level. At least half of these credits must be at the 6000 level. Students must maintain a 3.0 GPA or better in all coursework taken from admission into the program. No course can be listed on the POS with a grade below a C (2.0) and at most two C grades are allowed provided that the student's GPA does not fall below a B (3.0); a GPA below 3.0 would not allow a student to graduate.

Non-Thesis Program – This masters option requires 30 credit hours of formal coursework which can include at most 6 hours of Independent Study credit, as well as a Portfolio submission.

## **MSCV COURSEWORK REQUIREMENTS**

This MS degree will be 30 credit hours at the graduate level. Students must take 6 required courses and remaining 4 courses from the electives list to get to the program total of 10 classes. No thesis is required, but the independent study course will provide an independent learning experience.

### Required:

1. CAP 5415 – Computer Vision
2. CAP 5610 – Machine Learning
3. CAP 6411 – Computer Vision Systems
4. CAP 6412 – Advanced Computer Vision
5. CAP 6419 – 3D Computer Vision
6. CAP 6908 – Independent Study ONE (taken in Computer Vision, with someone from CRCV or very closely related)

### Electives (Choose any four):

1. CAP 5516 Medical Image Computing
2. STA 6107 Statistical Computing 2
3. CAP 6908 Independent Study TWO (taken in Computer Vision, with someone from CRCV or very closely related)
4. CAP 5115 Virtual Reality Engineering
5. CAP 6671 Intelligent Systems: Robots, Agents, and Humans
6. CAP 6614 Current Topics in Machine Learning
7. CAP 5619 Artificial Intelligence for FinTech
8. CAP 6121 3D User Interfaces for Games and Virtual Reality
9. CAP 6640 Computer Understanding of Natural Language
10. STA 6238 Logistic Regression
11. STA 5703 Data Mining Methodology 1
12. EEL 5820 Image Processing
13. MAP 6197 Mathematical Introduction to Deep Learning
14. One from {COT 5405, CDA 5106, or other CS graduate class}
15. CAP 5636 Advanced Artificial Intelligence
16. EEL 5825 Machine Learning and Pattern Recognition
17. STA 5104 Advanced Computer Processing of Statistical Data
18. STA 5703 Data Mining Methodology I
19. STA 6106 Statistical Computing I
20. EEL 5669 Introduction to Robotics and Autonomous Vehicles

**Firm RULE: At least half of the 10 program classes must be at 6000-level.**

An MS student must have his/her Program of Study Approved by the Program Director, before the completion of 9 credit hours into the program. If an approved Program of Study is not on file by your 9th credit hour, then you will be put on registration hold by the College of Graduate Studies and you will not be able to register for future courses.

## Time Limits to Degree Completion

The 7year rule applies to all classes in the student's Program of Study.

## Transfer Credit

### **TRANSFER OF CREDITS**

MS students, with the approval of the Program Director, can transfer up to 9 credit hours of B grades (3.0) or better, in graduate coursework. No Independent Study or Thesis credits from another program at UCF or from a regionally accredited institution can transfer. This must appear on the initial POS submitted by the student within their first 9 credit hours in the graduate program. Transfer credits must be requested in your first term at UCF or a petition will be required. If you have earned graduate credit in a UCF undergraduate degree, you can transfer up to 9 credit hours provided all grades are a "B" or better grade. If you have been accepted to the Accelerated BS to MS program, you are allowed to transfer up to 12 credits with a "B" or better grade. These credits are however subject to the 7year rule even though they are earned in an undergraduate degree. This transfer work would require the graduate Program Director's approval on a Program of Study.

In no case can courses with a grade below a B (3.0) be transferred, nor can undergraduate credit be used on a Program of Study. Students need to keep in mind that transfer work does not contribute towards their GPA in a graduate program.

Additionally, this is the Transfer of Credit Policy in the graduate catalog: [Transfer Credit](#)

# Program and Institutional Policies

## Absences

Programs can provide information here related to how they view and handle absences for students in their program.

Policy catalog Language related to Absences that can be included in this section:

Students who anticipate that they may not be able to enroll continuously due to external circumstances should apply for [Special Leave of Absence](#). Specifically, students who are taking courses should apply for a Special Leave of Absence when they cannot enroll in more than two consecutive semesters. Students who are in thesis/dissertation hours should apply for a Special Leave of Absence when they cannot enroll in every semester (including summer).

To qualify for a Special Leave of Absence, the student must demonstrate good cause (e.g., illness, family issues, financial difficulties, personal circumstances, recent maternity/paternity, employment issues). The specific reason for the Leave of Absence request must be indicated by the student on the [Leave of Absence Form](#). Due to current U.S. government regulations, international students must be enrolled every fall and spring semester. For students in this category, a Special Leave of Absence is only available for documented medical reasons.

## Academic Standards/Conduct/Integrity

All student conduct should be guided by the [Golden Rule](#).

## Communication

### **Student Responsibility for University Communication**

UCF uses email as the official means of notifying students of important university business and academic information concerning registration, deadlines, financial assistance, scholarships, student accounts (including tuition and fees), academic progress and problems, and many other critical items for satisfactory completion of a UCF degree program. The university sends all business-related and academic messages to a student's Knights Email address to ensure that there is one repository for

that information. Every student must register for, and maintain a Knights Email account at <https://extranet.cst.ucf.edu/kmailselfsvc> and check it regularly to avoid missing important and critical information from the university. Any difficulty with establishing an account or with accessing an established account must be resolved through the [UCF Computer Services Service Desk](#) so that a student receives all important messages. Additionally, each student must have an up-to-date emergency e-mail address and cell phone number by which to be reached in case of a crisis on campus. This emergency contact information will be used only for emergency purposes. Also, both permanent and local mailing addresses must be on the record, so that any physical documents that must be mailed can be delivered.

It is critical that students maintain and regularly check their Knights Email account for official announcements and notifications. Communications sent to the Knights Email address on record will be deemed adequate notice for all university communication, include issues related to academics, finances, registration, parking, and all other matters. The University does not accept responsibility if official communication fails to reach a student who has not registered for, or maintained and checked on a regular basis, their Knights Email account. Please ensure that this information is current and that any changes in contact information are made online through the myUCF portal at <https://my.ucf.edu/>.

## Continuous Enrollment

All graduate students are required to enroll in at least one class over the span of the Academic year. Failure to enroll in 3 consecutive terms results in dismissal from the program. UCF's policy from the graduate catalog around continuous enrollment is provided in this section. [Continuous Enrollment](#) and [Continuous Enrollment and Active Students](#).

## Diversity Statement

The University of Central Florida considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. UCF expects every member of the university community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Dimensions of diversity can include sex, race, age, national origin, ethnicity, gender identity and expression, intellectual and physical ability, sexual orientation, income, faith and non-faith perspectives, socio-economic class, political ideology, education, primary language, family status, military experience, cognitive style, and communication style. The

individual intersection of these experiences and characteristics must be valued in our community.

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at <https://letsbeclear.ucf.edu> and <http://cares.sdes.ucf.edu/>.

If there are aspects of the design, instruction, and/or experiences within this course that result in barriers to your inclusion or accurate assessment of achievement, please notify the instructor as soon as possible and/or contact [Student Accessibility Services](#).

For more information on diversity and inclusion, Title IX, accessibility, or UCF's complaint processes contact:

- Title IX – OIE <http://oie.ucf.edu/> & [askanadvocate@ucf.edu](mailto:askanadvocate@ucf.edu)
- Disability Accommodation – Student Accessibility Services – <http://sas.sdes.ucf.edu/> & [sas@ucf.edu](mailto:sas@ucf.edu)
- Diversity and Inclusion Training and Events – [www.diversity.ucf.edu](http://www.diversity.ucf.edu)
- Student Bias Grievances – Just Knights response team – <http://jkrt.sdes.ucf.edu/>
- UCF Compliance and Ethics Office – <http://compliance.ucf.edu/> & [complianceandethics@ucf.edu](mailto:complianceandethics@ucf.edu)
- Ombuds Office – <http://www.ombuds.ucf.edu>

## Enrollment in Independent Study Hours

MSCV has specific policies around when and how students can begin taking Independent Study hour classes. One Independent Study (of 3 hours) is required for the Program. Consult the Program Director for details about this.

## Golden Rule

The Golden Rule is the university's policy regarding non-academic discipline of students and limited academic grievance procedures for graduate (grade appeals in individual courses, not including thesis and dissertation courses) and undergraduate students. Information concerning The Golden Rule can be found at [www.goldenrule.sdes.ucf.edu/](http://www.goldenrule.sdes.ucf.edu/). Section 11, Student Academic Behavior, addresses appeals of graduate program actions or decisions.



## Harassment

The University of Central Florida values diversity in the campus community. Accordingly, discrimination on the basis of race, sex, national origin, religion, age, disability, marital status, parental status, veterans status, sexual orientation, or genetic information is prohibited.

Sexual harassment, a form of sex discrimination, is defined as unwelcome sexual advances, requests for sexual favors, or verbal or physical conduct of a sexual nature including any of these three situations.

1. Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or enrollment.
2. Submission to or rejection of such conduct by an individual is used as the basis for employment or enrollment decisions affecting such individual.
3. Such conduct has the purpose or effect of substantially interfering with an individual's work performance or enrollment, or creating an intimidating, hostile, or offensive working or academic environment.

Sexual harassment is strictly prohibited. Occurrences will be dealt with in accordance with the guidelines above and university rules. Employees, students, or applicants for employment or admission may obtain further information on this policy, including grievance procedures, from the OIE Coordinator. The Director of the Office of Institutional Equity Programs is the campus Equity Coordinator responsible for concerns in all areas of discrimination. The office is located on the main campus, in Barbara Ying CMMS Building 81, Suite 101. The phone number is (407) 823-1336. Policies and guidelines are available online at <http://www.eeo.ucf.edu>.

## International Students

This section describe provides information to international students.

### **UCF GLOBAL**

UCF Global helps international students, assisting with admission to the university, obtaining immigration documents, and adapting to a new academic environment and culture. It is necessary that all international students keep UCF Global informed of any potential changes in status. This office provides the guidance needed to understand and abide by regulations for international students.

## Other Relevant Program/Institutional Policies

### **GENERAL POLICIES**

- Satisfactory academic performance means that you must maintain a GPA of 3.0 in your graduate POS, with no more than 2 courses with a grade of “C”, as well as an overall GPA of at least 3.0 in all graduate coursework taken since entering the program.
- The department will accept no more than 9 hours of transfer credits for master’s students (not more than 12 credit hours of transfer for Accelerated BS to MS students in the MSCV Program) These include courses taken at UCF in non-degree seeking status where a maximum of 9 credits with a “B” grade or higher can be transferred.
- . The student maintains a full course load when they are either an international student or the student is under contract and works diligently to complete all requirements in a timely manner.
- . The student is responsible for knowing and meeting all university deadlines, rules, and regulations – see the section titled Student Responsibilities in the Graduate Catalog.
- All graduate students are expected to abide by UCF’s Golden Rule. See UCF Golden Rule.
- Students have available an Academic Grievance Procedure. See UCF Grievance Policies.
- Students may withdraw from a class meeting all conditions stated in the Graduate Catalog. However, this may result in the loss of a tuition waiver, and, for international students, this may place them in jeopardy of being considered out of status. See UCF Graduate Admission Policies.

## Additional Program Details

### Graduation

Graduation is the culmination of a challenging and arduous journey in the pursuit of a higher degree. To get to this pinnacle, it takes dedication, sacrifice, and hard work (and meeting all the required processes and deadlines of UCF). To eliminate or reduce the potential for any unnecessary delays or complications with graduation, each student must be aware of and comply with all degree requirements and deadlines and must submit all necessary forms on time. University requirements for courses, numbers of hours, etc. are in the Graduate Catalog as noted earlier in the Handbook. The student is responsible for keeping up with his or her course records and knowing where they are in the program. In the last semester (the semester in which the student plans to graduate), several additional steps must be taken, as explained below.

- i. File the intent to graduate online in MyUCF early in the semester.
- ii. Coordinate with the MSCV Coordinator, Graduate Student Services and the MSCV Program Director to ensure that your GPS report is “clean” and shows all sections of the report “satisfied” so that you can be pre-certified for graduation by the College.
- iii. Submission of the Portfolio which is a report from the independent study course signed by the professor and submitted to the Coordinator, Graduate Student Services by the deadline provided in your final semester.

### Forms

During your study at UCF, graduate students will be required to complete forms to progress through their degree program. A complete listing of forms can be found at either at the Computer Vision website, our Engineering College (CECS) website or the College of Graduate Studies website as listed below:

Computer Vision:

[Master of Science in Computer Vision – Center for Research in Computer Vision \(ucf.edu\)](http://ucf.edu)

CECS:

[Forms & Resources – CECS Academic Affairs \(ucf.edu\)](http://ucf.edu)

College of Graduate Studies:

[College of Graduate Studies \(ucf.edu\)](http://ucf.edu)

## Useful Links/Resources

The following are a few useful links:

- [Bookstore](#)
- [Campus Map](#)
- [Graduate Catalog](#)
- [Library](#)
- [Parking Services](#)
- [Shuttles](#)
- [Recreation Center](#)
- [Housing](#)
- [Counseling Center](#)
- [Writing Center](#)
- [Academic Calendar](#)