VALENCIA COLLEGE AND UNIVERSITY OF CENTRAL FLORIDA
ASSOCIATE IN SCIENCE (A.S.) IN STEM, LASER AND PHOTONICS AT VALENCIA COLLEGE TO BACHELOR OF SCIENCE (B.S.) IN PHOTONIC SCIENCE AND ENGINEERING AT UCF

The Associate in Science (A.S.) STEM, with specialization in Laser and Photonics to the Bachelor of Science Photonic Science and Engineering (B.S.P.S.E) articulation agreement ("Agreement") is made by and between The District Board of Trustees of Valencia College and the University of Central Florida Board of Trustees ("UCF"). Collectively, both Valencia College and UCF shall be referred to as the "Parties".

PURPOSE

The purpose of this Agreement is to create a seamless transfer pathway between Valencia College's A.S. in Laser and Photonics Science and the UCF's Bachelor of Science in Photonic Science and Engineering (B.S.P.S.E.) program. The Agreement entitles Valencia College students who earn an A.S. in STEM with specialization in Laser and Photonics to earn credits that will be transferable toward a Bachelor of Science in Photonic Science and Engineering baccalaureate degree at UCF. Valencia students who select and opt into this articulation agreement will complete appropriate B.S. in Photonic Science and Engineering Common Program Prerequisites, the articulated courses included in Appendix A, fulfil A.A. requirements while earning an Associate in STEM (A.S. STEM), Laser and Photonics at Valencia College. Valencia students who successfully complete this articulated A.S. STEM pathway, Laser and Photonics, will be accepted into the B.S. Photonic Science and Engineering program after being admitted to the University of Central Florida.

A. To participate in this articulation agreement, Valencia students must:
    1. Officially select the A.S. STEM with specialization in Laser and Photonics by consulting with a Valencia advisor,
    2. Seek advisement from a qualified advisor for A.S. in STEM Engineering or Laser and Photonics each semester before registering for classes,
    3. Select A.S. STEM with specialization in Laser and Photonics by the completion of the first year of the A.S., STEM curriculum, and,
    4. Graduate from Valencia College with the A.S. STEM degree with common program prerequisites and articulated courses below completed; or,
B. General Education Requirements Met (GERM Stamp): Upon completion of the A.S. STEM with specialization in Laser and Photonics curriculum students will have their diploma endorsed with a GERM Stamp. Valencia students who also earn this degree are encouraged to apply for and earn an AA diploma from Valencia College.
C. Acceptance of A.S. STEM – Laser and Photonics related courses included in Appendix A taken at Valencia. Valencia may develop and teach the Laser and Photonics articulated courses equivalent to these seven courses. Such courses will be accepted in transfer by the UCF College of Engineering and Computer Science and Optics and Photonics as being equivalent to the indicated UCF courses provided that they satisfy the following characteristics:
    1. ABET course control documents prepared and supplied by the UCF College of Engineering and Computer Science and College of Optics and Photonics must be used for defining these courses.
    2. The current UCF College of Engineering and Computer Science and College of Optics and Photonics syllabus for each of these courses must be used to describe the contents of that course as it is to be taught each semester.

3. Qualified Valencia faculty (master's degree and 18 hours within engineering) may teach these courses provided they meet SACSCOC or other department of education approved accreditor requirements for faculty.

NOTE: Prerequisites for all engineering courses must be satisfied prior to enrollment in those courses.

BACHELOR OF SCIENCE IN PHOTONIC SCIENCE AND ENGINEERING, UCF

Students declaring a major in an engineering discipline must be in good academic standing and must have a "C" (2.0) or better in each of the following courses or their equivalents: MAC 2311C, MAC 2312, MAC 23I3, PHY 2048C (or PHY2048 and PHY2048L), PHY 2049C (or PHY2049 and PHY2049L), and CHM 2045C or CHS 1440. Students who complete the requirements stipulated in this Agreement will have the same priority as native UCF students for all scheduled classes required for completing the Bachelor of Science (B.S.) in Photonic Science and Engineering major.

UCF B.S. REQUIREMENTS

To earn a UCF Engineering B.S. through the Engineering Articulated Program (EAP), the student must meet all the graduation requirements listed in the UCF Undergraduate Catalog for the catalog year in which the student declares the major at UCF. Generally, this catalog will include the following:

UCF Graduation Requirements

A. Students must complete 128 credits of designated coursework to earn the B.S.P.S.E. degree. A minimum 2.25 GPA is required for courses listed in section D below.
B. General Education Program Requirement (Completed as part of the A.S. STEM, Laser and Photonics Specialization degree and A.A. degree at Valencia College), satisfies 27 credits.
C. Common Program Prerequisites (Completed as part of the A.S. STEM, Laser and Photonics Specialization degree at Valencia College), satisfies 27 credits. This section includes MAC 2311C, MAC 2312, MAC 2313, MAP 2302, PHY 2048C, PHY 2049C and a chemistry course required for the BSPSE major.
D. Program Requirements:
    a. Core Requirements: Basic Level satisfies 9 credits. This section includes PHY 3103, STA 3032 and a designated programming course.
    b. Core Requirements: Advanced Level satisfies 47 credits. This section includes all 3000 and 4000 level electrical and photonics courses.
    c. Restricted Electives satisfies 12 credits. This section includes EGS 1006C, EGN 1007C and other approved restricted electives.
    d. Capstone Requirements satisfies 6 credits. This section includes OSE 4951 and OSE 4952 and are completed in the last two major semesters of study.
E. College/School Exit Requirements (Refer to discipline specific requirements in the UCF Undergraduate Catalog)
F. University Minimum Exit Requirements
    a. 2.0 UCF GPA
    b. 60 semester hours earned after CLEP awarded
    c. 42 semester hours of upper-division credit completed
    d. 30 of the last 39 hours of coursework must be completed in residency at UCF
    e. A maximum of 45 hours of extension, correspondence, CLEP, Credit by Exam, and Armed Forces credits permitted

f. Complete the General Education Program, the Gordon Rule, the CLAS and nine hours of summer credit (if applicable)

AGREEMENT PROVISIONS

Admission to the UCF

Students who complete this Associate in Science (A.S.) STEM – Laser and Photonics and complete an A.A. degree at Valencia as described herein will be guaranteed admission to UCF consistent with the University Admission Policies. Grade forgiveness will be consistent with the UCF Undergraduate Catalog applicable to the student.

Admission to the College of Engineering and Computer Science/College of Optics and Photonics at UCF

Upon admission to UCF, students who have completed their Associate in STEM - Engineering at Valencia College and maintained a 2.0 GPA will be accepted into the upper-division in the UCF College of Engineering and Computer Science or College of Optics and Photonics as either an engineering major (if grades of C(2.0) or better have been earned in MAC 2311C, MAC 2312, PHY 2048C, and CHM 2045C (or equivalent courses), or otherwise as an engineering pending major.

Foreign Language Requirements

Students must demonstrate competency of a foreign language or American Sign Language equivalent to the second high school level or higher (e.g., Spanish 2) or the second elementary course at the college level (e.g., SPN 1211-Beginning Spanish II). Students admitted to UCF without completing this requirement must satisfy it prior to graduation from the university.

Immunization

Students who matriculate at a state university are required to provide proof of immunization against Rubeola (measles) and Rubella (German measles) prior to enrollment.

Resources

Resources for implementation of the Agreement may come from either party, depending upon budgetary availability. No party hereto is obligated hereby to expend any resources whatsoever in connection with this Agreement. No implementation of any portion of the Agreement, or commencement of any specific projects, may be initiated prior to the written assurance of such budgetary availability to the other party hereto. To the extent any external funding is required by the university to implement this Agreement and funding for such purposes is not appropriated to the university by the Legislature of the State of Florida or is not otherwise available to the university, the university shall henceforth have no further financial obligations hereunder. In the event the university does not have sufficient legislative appropriations to carry out any obligations under this Agreement, it shall immediately notify Valencia College of such fact and of such portions of this Agreement that may be deemed terminated due to failure of appropriations.

Modifications or Updates

Any amendments to this agreement shall not be valid unless made in writing and signed by both parties. This agreement is subject to change by legislative action, the Department of Education, the Florida Board of Governors, the University of Central Florida or its Board of Trustees, Valencia College or its

Board of Trustees, or external accrediting agencies. This agreement will be reviewed by both parties on a yearly basis to ensure the timeliness of this document.

Notifications

Notices with respect to rights and obligations of each Party hereto shall be provided as follows:

University of Central Florida

Michael Johnson, Provost and Executive Vice President, Academic Affairs
David Hagan, Dean, College of Optics and Photonics
Timothy Letzring, Senior Vice Provost, Academic Affairs
Manoj Chopra, Associate Dean, Academic Affairs, College of Engineering and Computer Sciences
Patrick L. LiKamWa, Associate Dean, College of Optics and Photonics
Harrison Oonge, Executive Director for Academic Planning and Strategic Initiatives, UCF Connect

Valencia College

Yolanda Brown, Provost, Workforce Education
Molly McIntire**,** Assistant Vice President, Career and Workforce Education
Lara Sharp, Dean, School of Engineering, Technology & Advanced Manufacturing
Cheryl Robinson, Director, Curriculum and Articulation

TERM

This agreement shall take effect on Month, Date, or the date of the last signature below, whichever is later and shall remain in effect for a five-year term. Upon the end of the five-year term, the agreement shall be eligible for renewal for additional five years following a review by the Parties. Either party may terminate or suspend this Agreement at any time for convenience upon sixty (60) days' written notice; provided, however, that the Parties shall discuss and reasonably attempt to resolve issues that led to notice of termination or suspension during the sixty (60) day period.

APPROVALS

The University of Central Florida Board of Trustees

Michael Johnson

Signed: Thursday, June 12, 2025

Michael Johnson Date
Provost & Executive Vice President,
Academic Affairs

The District Board of Trustees of Valencia College, Florida

Oscar Cristancho Mercado

Signed: Wednesday, June 25, 2025

Yolanda Brown Date
Vice-President,
Workforce, Career and
Continuing Education

Appendix A: Valencia Laser and Photonics Specialization

Valencia Laser and Photonics Specialization

This specialization academically prepares students by providing the Engineering, Physics, Mathematics and Optics foundation courses required to success in a baccalaureate photonics program. Upon graduating from this specialization, Valencia students are eligible to enter Bachelor of Science in Photonic Science and Engineering at The College of Optics and Photonics (CREOL - UCF) with junior standing, through the Direct Connect articulation agreement, and seek a career in industry.

Students declaring a major in an engineering discipline must be in good academic standing and must have a "C" (2.0) or better in each of the following prefix courses or their equivalents: MAC 2311C, MAC 2312, PHY 2048C, CHM 2045C or CHS 1440C.

Course Equivalencies

Valencia Course	Credits	UCF Course Equivalency	Credits
ETS 1211C Introduction to Photonics Engineering Design	1	OSE 2050 Introduction to Photonics Engineering Design	1
ETS 2210C Principles of Photonics	3	UCF 3000 Restricted Elective	3
ETS 2215 Geometric Optics	3	OSE 3200 Geometric Optics	3
ETS 2215L Optics Lab	1	OSE 3200L Geometric Optics	1
ETS 2212 Foundations of Photonics	3	OSE 3052 Foundations of Photonics	3
ETS 2212L Foundations of Photonics Lab	1	OSE 3052 Foundations of Photonics Lab	1
EGS 2004C Electrical Networks	3	EEL 3004C Linear Circuits I	3
MAC 2313 Calculus with Analytical Geometry III	4	MAC 2313 Calculus with Analytic Geometry III	4
MAP 2302 Differential Equations	3	MAP 2302 Ordinary Differential Equations I	3
PHY 2049C General Physics with Calculus II	4	PHY 2049 and PHY 2049L General Physics Using Calculus II	4
TOTALS	**26**		**26**

Prerequisites/Corequisites

ETS 1211C Introduction to Photonics Engineering Design	None
ETS 2210C Principles of Photonics	PR: MTB 1329 or MAC 1105 or higher
ETS 2215 Geometric Optics	PR: A grade of "C" (2.0 GPA) or better in PHY 2048C (or in both PHY 2048 and PHY 2048L)
ETS 2215L Geometric Optics Lab	CR: ETS 2215/OSE 3200
ETS 2212 Foundations of Photonics	PR: A grade of "C" (2.0 GPA) or better in MAC 2313 and PHY 2049C (or both PHY 2049 and PHY 2049L).
ETS 2212L Foundations of Photonics Lab	CR: ETS 2212/OSE 3052
EGS 2004C Electrical Networks	PR: A grade of "C" (2.0 GPA) or better in MAC 2313 and PHY 2049C (or both PHY 2049 and PHY 2049L). PR or CR: MAP 2302 Differential Equations
MAC 2313 Calculus with Analytical Geometry III	PR: A grade of "C" (2.0 GPA) or better MAC 2312 Calculus II

MAP 2302 Differential Equations	PR: A grade of "C" (2.0 GPA) or better MAC 2313 Calculus III
PHY 2049C General Physics with Calculus II	PR: A grade of "C" (2.0 GPA) or better PHY 2048C General Physics with Calculus II (or both PHY 2049 and PHY 2048L)

Appendix B: Valencia AS-STEM Photonic Science and Engineering Major Courses Flowchart

Valencia AS-STEM Photonics Science and Engineering 2024-2025

Major Courses Flowchart*

www.creol.ucf.edu
undergrad@creol.ucf.edu

Core Courses (40):

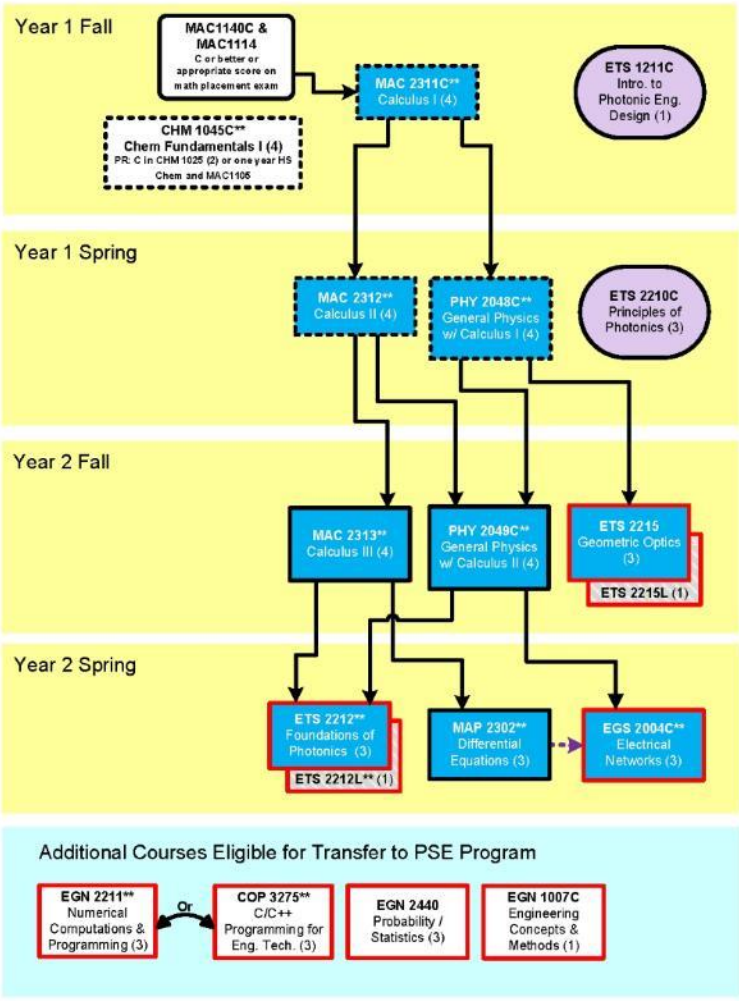
SLS 1122 New Student Experience (3)
ENC 1101 Freshman Composition I (3)
ENC 1102 Freshman Composition II (3)
SPC 1608 or **SPC 1017** Speech (3)
Social Science Core: **POS 2041** *or* **AMH 2020** (3)
Social Science Institutional (3)
Humanities Core (3)
Humanities Institutional (3)
MAC 2311 Calculus w/ Anal. Geo. I (4)
MAC 2312 Calculus w/ Anal. Geo. II (4)
CHM 1045C Chemistry w/ Qual. Anal. I (4)
PHY 2048C Physics w/ Calculus I (4)

Photonics Specialization (24)
EGS 1006C Intro. To Engineering Prof. (1)
MAP 2302 Differential Equations (3)
PHY 2049C Physics w/ Calculus II (4)
EGS 2004C Electrical Networks (3)
ETS 2215 Geometric Optics (3)
ETS 2215L Geometric Optics Lab (1)
ETS 2212 Found. of Photonics (3)
ETS 2212L Found. of Photonics Lab (1)

Restricted Electives (4):
ETS 2210C Principles of Photonics (3)
ETS 1211C Intro. to Photonics Engineering Design (1)

Additional Math Course (1/4):
MAC 2313 Calculus w/ Anal. Geo. III (4)
(1 credit used toward AS-STEM Specialization, remaining 3 credits will transfer to UCF)

Total Credits: 64



Additional Courses Eligible for Transfer to PSE Program

EGN 2211** Numerical Computations & Programming (3) — Or — **COP 3275**** C/C++ Programming for Eng. Tech. (3)
EGN 2440 Probability / Statistics (3)
EGN 1007C Engineering Concepts & Methods (1)

Good Things to Know:

- 2.25 Major GPA required for graduation
- Register for courses early so you are not closed out.
- Register for Critical Path Courses first.
- When transferring to UCF, enroll in an early orientation to ensure the best selection of courses.

***Flowchart is a suggested plan. Meet with advisor for personalized plan. Gen. Ed. courses not listed. In the event of an error, UCF Catalog takes precedence.**

KEY

PREREQUISITE: →
COREQUISITE: ⇢

CRITICAL PATH COURSES
Pre major requirements
Lab courses
Restricted Elective Options
RED BORDER: Course used for Major GPA Calc.

Lab courses are required for PSE majors.
Numbers in Parentheses represent credit hours.

** A grade of C (2.0) or better required

Scan to visit the PSE Website

Appendix C: B.S. Photonic Science and Engineering at UCF Major Courses Flowchart

