

CERTIFICATE IN PHOTONICS & LASERS TECHNICAL SPECIALIST

OPSC 120 INDUSTRY TECHNICAL INTERNSHIP

Contact hours: Four-hundred hours (400) – 5 Credit

Prepared by: **Dr. Andrés Díaz – 2014**

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Course Description: During the Industry Technical Internship, students will have a real-world full-time technical experience with a company or institution in areas where optics and photonics are enabling technologies. Students will acquire technical experience and skills in a manufacturing, industrial, or research setting. This internship will also give the students feedback on their strengths and weaknesses working in an environment that requires teamwork, respect for authority and experience, and cooperation. Students will be given an opportunity to hone their “soft skills”, and in so doing be better prepared for paying careers when they graduate. The coordination with the internship center will be done through the faculty assigned to this course. In addition, the student will have a mentor at the company where he/she performs the internship. The mentor’s input will be part of the evaluation process of the course. Requirements OPSC 102, OPSC 110.

Competences / Objectives:

At the end of the course, the student will develop and apply the skills to:

1. Allocate resources, which may include time, money, materials, and space.
2. Work in teams, learn from others, serve customers, lead, and negotiate.
3. Acquire and evaluate data, organize information, and interpret and communicate.
4. Understand social, organizational, and technological systems for the specific industry he/she is working in.
5. Select equipment and tools, and apply technology to specific tasks.
6. Access information sources related to photonics and lasers effectively and use this information ethically and legally.

Course Content:

- a. Introduction to Internship Experience
- b. Technical Internship at a Company or Research Institution
Mid-Internship Report by Mentor
Final Internship Report by Mentor
- c. Internship Evaluation
Report from Company or Research Institution (Mentor)
Written Report from Intern
Oral presentation
- d. Workshops



Grading Policy:	40%	Two (2) reports by company mentor
	20%	Written report
	20%	Oral Presentation
	20%	Attendance reports

Textbook:

Diaz, A. & Ortiz, M. C. (2014). *Manual del Internado: Certificado en Fotónica y Láseres*. PR: UMET.

References:

a. Printed Resources

Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. USA: Sage Publication.

Fulmer, R. M., & Bleak, J. L. (2008). *The leadership advantage: how the best companies are developing their talent to pave the way for future success*. New York: AMACOM/American Management Association.

Gall, M., Gall, J. & Borg, W. (2007). *Educational Research: An Introduction*. USA: Pearson.

Lee, C. (Ed.). (2015). *The Current Trends of Optics and Photonics (Topics in Applied Physics)* (p. 542). USA: Springer.

Ponce, O. (2006). *Redacción de Informes de Investigación*. Puerto Rico: Publicaciones Puertorriqueñas Inc

b. Audiovisual Resources

Canada National Research Council. [National Research Council Canada]. (2012, February 1). *Living at the speed of light*. [Video file]. Retrieved from <http://youtu.be/CoB2kbI-GHA>

OP-TEC. [OP-TEC on You Tube]. (2009, June 10). *Photonic Career Videos: Dr. Bruce Brinson*. [Video file]. Retrieved from <http://youtu.be/rFihfm-w3qU?list=ULrFihfm-w3qU>

OP-TEC. [OP-TEC on You Tube]. (2013a, January 16). *Photonic Career Videos: Colt Jesse*. [Video file]. Retrieved from <http://youtu.be/bb5hq1Usmd8>

OP-TEC. [OP-TEC on You Tube]. (2013b, January 30). *Photonic Career Videos: Robert Aguilar, Jr.* [Video file]. Retrieved from <http://youtu.be/nEt0BUBXOdo>

SPIE (Producer). (2014). *Optics: Light at Work* [DVD]. (Available from SPIE: spie.org/opticslightatwork)



Students with Special Needs (ADA):

Students receiving Vocational Rehabilitation services, who present evidence, should communicate with his/her professor at the beginning of the semester to arrange for reasonable accommodations and the necessary assistance equipment. Any student needing any special accommodations should communicate these needs to the professor during the first week of class.

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The Certificate in Photonics & Lasers Technical Specialist is part of New Horizons: Puerto Rico Lasers and Photonics Career Pathways, a project funded by the United States Department of Labor – Employment and Training Administration – Trade Adjustment Assistance Community College and Career Training Grant (TAACCCT) Round 4. TC-26472-14-60-A-72. The program materials were created by Puerto Rico Photonics Institute (PRPI)/UMET and do not necessarily reflect the official position of the U.S. Department of Labor.