

## Mechanical Engineering – Physics BS 5-year Bachelor’s Dual Degree Program

The Cullen College of Engineering and the College of Natural Sciences and Mathematics (NSM) are offering a modified Mechanical Engineering, BSME – Physics, BS dual-degree program. Mechanical Engineering (MECE) majors are eligible for this program, which requires one additional year (30 credit hours) of coursework needed to earn the Physics (PHYS) BS degree. To join, MECE majors must meet NSM change-of-major requirements at the time the dual-degree is declared.

The dual-degree program may be completed in one of two ways:

- Students may complete coursework for the Mechanical Engineering degree simultaneously with the Physics BS degree. **Completion of the dual-degree in this manner requires both degrees to be completed within 6 years.**
- Students may complete the Mechanical Engineering degree first, and then begin the Physics BS degree program within one year of completing the Mechanical Engineering degree. The Physics BS degree requirements must then be completed within 3 years of starting the program.

The 30 credit hours (c.h.) of coursework required to earn the Physics BS degree are listed below:

MATH 3364 Introduction to Complex Analysis (3 c.h.)  
PHYS 3315 Modern Physics (3 c.h.)  
PHYS 3316 Quantum Mechanics (3 c.h.)  
PHYS 3214 Advanced Laboratory II (2 c.h.)  
PHYS 4321 Intermediate Electromagnetic Theory I (3 c.h.)  
PHYS 4322 Intermediate Electromagnetic Theory II (3 c.h.)

One (1) of the following options:

PHYS 4421 Electrical Devices and Their Applications (4 c.h.) or  
PHYS 3312 Modern Optics (3 c.h.) and PHYS 3112 Modern Optics Laboratory (1 c.h.)

Three (3) Physics Electives at the 3000-level or higher (9 c.h.)

Note: The Special Requirement of 6 credit hours of Life and Physical Sciences courses and any additional free elective credit hours for the Physics BS degree are waived for this program. Requirements for the 1 c.h. introductory laboratory classes, PHYS 2125 and PHYS 2126, are also waived.

Earning the Physics BS degree is possible as the program will allow the following course substitutions:

<b>Course Completed in Mechanical Engineering Degree</b>	<b>Course Substituted in Physics BS Degree</b>
MATH 3321 Engineering Math	MATH 2318 Linear Algebra
MATH 3321 Engineering Math	MATH 3331 Differential Equations
MECE 3360 Experimental Methods	PHYS 3110 Advanced Lab Analysis
MECE 3360 Experimental Methods	PHYS 3313 Advanced Laboratory
MECE 3336 Mechanics II	PHYS 3309 Intermediate Mechanics
MECE 4343 Thermal Design	PHYS 3327 Thermal Physics

Inquiries about the program, including how to get started and interest in applying to a Physics graduate program can be directed to the program coordinator and student advisor, Prof. Daniel Cherdack, at [ddcherdack@uh.edu](mailto:ddcherdack@uh.edu).