



**University of Hawai'i at Mānoa**  
**Colleges of Arts & Sciences Program Sheet 2015-2016**  
**Bachelor of Science (BS) in Astrophysics**  
**Admissions: Open Process: Declaration**  
**Min. Total Credits: 124 (112 in core & major + 12 in electives)**

UHM General Education Core Requirements
<b>Foundations</b>
<input type="checkbox"/> FW ENG 100, 100A, 190, or ESL 100
<input type="checkbox"/> FS MATH 241
<input type="checkbox"/> FG (A / B / C)
<input type="checkbox"/> FG (A / B / C)
<b>Diversification</b>
<input type="checkbox"/> DA / DH / DL
<input type="checkbox"/> DA / DH / DL
<input type="checkbox"/> DB
<input type="checkbox"/> DP CHEM 161 or 171, or PHYS 170
<input type="checkbox"/> DY CHEM 161L or 171L, or PHYS 170L
<input type="checkbox"/> DS
<input type="checkbox"/> DS
<i>* See degree, college and major requirements for courses that can also fulfill these.</i>
UHM Graduation Requirements
<b>Focus</b>
<input type="checkbox"/> H
<input type="checkbox"/> E (300+) PHYS 485
<input type="checkbox"/> O (300+) ASTR 301
<input type="checkbox"/> W PHYS 274L
<input type="checkbox"/> W MATH 311
<input type="checkbox"/> W ASTR 300L
<input type="checkbox"/> W (300+) ASTR 494
<input type="checkbox"/> W (300+)
<b>Hawaiian / Second Language</b>
<input type="checkbox"/> 101
<input type="checkbox"/> 102
<input type="checkbox"/> 201
<input type="checkbox"/> 202
<b>Credit Minimums</b>
• 120 total applicable
• 30 in residence at UHM
• 45 upper division (300+ level) courses
<b>Grade Point Average</b>
• 2.0 cumulative or higher ( <i>Note: Other GPAs may be required.</i> )
• Good academic standing

Degree Requirements
<b>Bachelor of Science Requirements</b>
<input type="checkbox"/> Calculus I
<input type="checkbox"/> Calculus II
<input type="checkbox"/> Chemistry I with lab
<input type="checkbox"/> Chemistry II with lab
<input type="checkbox"/> Physics I with lab
<input type="checkbox"/> Physics II with lab
<i>Refer to major requirements for the specific courses that satisfy these requirements.</i>
College Requirements
<b>Credit Maximums</b>
• 8 KRS activity
• 9 Directed Reading / Research
• 12 Practicum / Internship

*This program sheet was prepared to provide information and does not constitute a contract. See back for major requirements.  
 Meet regularly with your major advisor. Advising is mandatory every semester for Astrophysics majors.*

## Major Requirements for BS in Astrophysics

Admission: Open

Application: NA

Min. major credits: 63 in Physics and Astronomy courses (88 with related requirements)

Min. C grade (not C-) in all courses

### Requirements

#### Astrophysics Related Requirements (25-26 credits)

CHEM 161\*<sup>DP</sup> /  161L\*<sup>DY</sup>

CHEM 162\*<sup>DP</sup> /  162L\*<sup>DY</sup> or 171/171L or 181A/181L

MATH 241\*<sup>FS</sup>

MATH 242

MATH 243

MATH 244

MATH 311 or 307

*MATH 251A\*<sup>FS</sup>, 252A and 253A may be substituted for MATH 241-244.*

*MATH 215\*<sup>FS</sup> and 216 may be substituted for 241 and 242 with approval from physics advisor.*

#### Astrophysics Core Courses (53 credits; see catalog for prerequisites)

PHYS 170\*<sup>DP</sup> /  170L\*<sup>DY</sup>

PHYS 272\*<sup>DP</sup> /  272L\*<sup>DY</sup>

PHYS 274\*<sup>DP</sup> /  274L\*<sup>DY</sup>

PHYS 310

PHYS 311

PHYS 350

PHYS 450

PHYS 480

PHYS 485

ASTR 241<sup>DP</sup>

ASTR 242<sup>DP</sup>

ASTR 300 /  300L

ASTR 301

ASTR 423

ASTR 494 (6 credits, distributed across two semesters)

#### Additional Courses (9 credits; see catalog for prerequisites)

**1 course** from Group 1: ASTR 320, 427, 430

\_\_\_\_\_  \_\_\_\_\_

**2 courses** from Group 2: PHYS 400, 460, 481, 490

\_\_\_\_\_  \_\_\_\_\_

### Notes

College of Natural Sciences Advising: Bilger 102; (808) 956-6451

Department of Physics and Astronomy: Watanabe 416; (808) 956-7087; [undergrad@ifa.hawaii.edu](mailto:undergrad@ifa.hawaii.edu)