Assessing the Physics Major – Goals and Objectives

There are several facets to earning a degree in Physics. The faculty of the Physics & Astronomy Department agree that content, skills, and research experience are among the most important learning outcomes for students who leave UW with a Physics degree.

1. **Content** – Physics majors should be broadly trained in several fundamental areas, including: classical mechanics, quantum mechanical phenomena, electromagnetism, thermodynamics and statistical mechanics, relatively, optics, and computational and analytical techniques.

2. **Skills** – Physical scientists strive for understanding of the natural world through the interplay of theory and experiment. Thus critical thinking, problem solving, and the modeling of scientific data are vital skills for a Physics major to develop. However, it is equally important for scientists to be able to effectively communicate their work to the greater public. The ability to write clearly and concisely, and a facility for public speaking, are also important skills for our Physics majors to develop.

3. **Research Experience** – Our understanding of the natural world is advanced through research; research lies at the heart of the field of physics. Hence we expect our Physics majors to participate in either an on-campus research program or in an off-campus internship. Such experiences map directly into our Physics curriculum via PHYS 4970.
Assessing the Physics Plus Major - Goals and Objectives

There are several facets to earning a degree in Physics Plus. The faculty of the Physics & Astronomy Department agree that content, skills, and research experience are among the most important learning outcomes for students who leave UW with a Physics Plus degree.

1. **Content** - Physics Plus majors should be broadly trained in several fundamental areas, including: classical mechanics, quantum mechanical phenomena, electromagnetism, thermodynamics and statistical mechanics, relatively, optics, and computational and analytical techniques. Physics Plus majors should also obtain a deep understanding of an additional area of expertise (e.g., meteorology).

2. **Skills** - Physical scientists strive for understanding of the natural world through the interplay of theory and experiment. Thus critical thinking, problem solving, and the modeling of scientific data are vital skills for a Physics Plus major to develop. However, it is equally important for scientists to be able to effectively communicate their work to the greater public. The ability to write clearly and concisely, and a facility for public speaking, are also important skills for our Physics Plus majors to develop.

3. **Research Experience** - Our understanding of the natural world is advanced through research; research lies at the heart of the field of physics. Hence we expect our Physics Plus majors to participate in either an on-campus research program or in an off-campus internship. Such experiences map directly into our Physics Plus curriculum via PHYS 4970.
Assessing the Astrophysics Major – Goals and Objectives

There are several facets to earning a degree in Astrophysics. The faculty of the Physics & Astronomy Department agree that content, skills, and research experience are among the most important learning outcomes for students who leave UW with an Astrophysics degree.

1. **Content** – Astrophysics majors should be broadly trained in several fundamental areas, including: astrophysics, classical mechanics, quantum mechanical phenomena, electromagnetism, thermodynamics and statistical mechanics, relatively, optics, and computational and analytical techniques.

2. **Skills** – Physical scientists strive for understanding of the natural world through the interplay of theory and experiment. Thus critical thinking, problem solving, and the modeling of scientific data are vital skills for an Astrophysics major to develop. However, it is equally important for scientists to be able to effectively communicate their work to the greater public. The ability to write clearly and concisely, and a facility for public speaking, are also important skills for our Astrophysics majors to develop.

3. **Research Experience** – Our understanding of the natural world is advanced through research; research lies at the heart of the field of astrophysics. Hence we expect our astrophysics majors to participate in either an on-campus research program or in an off-campus internship. Such experiences map directly into our Astrophysics curriculum via PHYS 4970.