

Goal	E	C	A
Stellar evolution	The student can identify and label the main evolutionary stages of different stars and using physical reasoning give some explanation for the evolution of the Sun. The student is also able to solve basic problems and reflect on the answers.	The student can describe the main evolutionary stages of different stars, and using physical reasoning explain the processes driving the evolution in the different stars. The student can also give a rough explanation for the differences between different stars, solve problems of known type and discuss the implications of the answers to some extent.	The student can give deep and well-founded descriptions and explanations of the main evolutionary stages of different stars, and using physical reasoning explain in detail the processes driving the evolution in the different stars and the physical reasons for the differences between them. The student is also able to solve previously untested problems, discuss deeply the implications of the answers and suggest new exercises.
Structure formation	The student can list the different types of galaxies, and identify their structure and components. The student is also able to describe the evidence for the expansion of the universe, and give a rough overview of the theories for structure formation on large and small scales. The student is also able to solve basic problems and reflect on the answers.	The student can describe the different types of galaxies, their structure and components and briefly discuss their formation. The student can discuss the observations of dark matter in the Milky Way, and review the evidence for the expansion of the universe. The student is also able to solve problems of known type and discuss the implications of the answers to some extent.	The student can describe in detail the different types of galaxies, their structure and components and discuss their formation and the reasons for the differences between them. The student can review different observations of dark matter and analyse their implications, and discuss the evidence for the expansion of the universe. The student is also able to solve previously untested problems, discuss deeply the implications of the answers and suggest new exercises.
Extrasolar planets	The student can describe at least one method for detection of extrasolar planets, briefly discuss the requirements for life on other planets, and solve basic problems and reflect on the answers.	The student can describe several methods for detection of extrasolar planets and discuss their use and differences. The student is also able to give a somewhat detailed discussion of the requirements of life on other planets and reflect on our ability to observe this, as well as to solve problems of known type and discuss the implications of the answers to some extent.	The student can describe several methods for detection of extrasolar planets and suggest the correct method to use for a particular observation. The student is also able to discuss the requirements for life on other planets and suggest observations for detecting signs of life, as well as to solve previously untested problems, discuss deeply the implications of the answers and suggest new exercises.

Goal	E	C	A
Physical processes	<p>The student can describe the various forces acting on an object, and discuss how these affect the motion and evolution of planets, stars, nebulae and galaxies.</p> <p>The student can describe how radiation is formed in stars and nebulae, how this radiation is transported to us and how it can be modified along the way, as well as how this affects the radiation which is received at the Earth.</p> <p>The student is also able to solve basic problems and reflect on the answers.</p>	<p>The student can explain briefly how the interplay between the forces acting on objects drives the motion and evolution of planetary and stellar systems, stars and nebulae.</p> <p>The student can explain how radiation is formed in stars and nebulae, how this radiation is transported to us and how it can be modified along the way, and use observed radiation to draw some conclusions concerning the properties of the emitting object.</p> <p>The student is also able to solve problems of known type and discuss the implications of the answers to some extent.</p>	<p>The student can explain in detail how the interplay between the forces acting on objects drives the motion and evolution of planetary and stellar systems, stars and nebulae.</p> <p>The student can give detailed explanations of how radiation is formed in stars and nebulae, how this radiation is transported to us and how it can be modified along the way. The student is also able to use this understanding to analyse observed radiation in order to draw conclusions concerning the properties of the emitting object.</p> <p>The student is also able to solve previously untested problems, discuss deeply the implications of the answers and suggest new exercises.</p>
Observations	<p>The student can describe different kinds of telescopes and explain briefly the reasons for using a particular type of telescope in a given situation. The student is also able to describe the celestial coordinate system and how this can be used for determining positions of objects in the sky at a given time and location, and to solve basic problems and reflect on the answers.</p>	<p>The student can describe different kinds of telescopes, explain in some detail the reasons for using a particular type of telescope in a given situation and choose the correct observing method in simple situations. The student is also able to describe the celestial coordinate system and to use this for determining positions of objects in the sky at a given time and location, as well as to solve problems of known type and discuss the implications of the answers to some extent.</p>	<p>The student can describe different kinds of telescopes, determine which telescope is best to use in a given situation, explain the reasons why, and suggest improved methods. The student is also able to describe the celestial coordinate system in detail and to use this for determining positions of objects in the sky at a given time and location, as well as to solve previously untested problems, discuss deeply the implications of the answers and suggest new exercises.</p>
Teaching	<p>The student is active in the group work, takes part in the group presentation and can motivate the choice of material and method of presentation. The student also gives constructive feedback on the presentations of other groups.</p>	-	-

For passing the course with grade E all requirements for level E must be fulfilled

For grade D all requirements for level E must be fulfilled as well as most requirements for level C

For grade C all requirements for levels E and C must be fulfilled

For grade B all requirements for levels E and C must be fulfilled, as well as most requirements for level A

For grade A all requirements for levels E, C and A must be fulfilled

Note: The requirements for a particular level are considered to be fulfilled when at least 80 % of the available points or credits at that level are obtained. For the intermediate grades 80% of the credits for the levels below and at least 50 % of the credits for the level above must be obtained.