

Work plan NASE: FACE-TO-FACE

1. Didactic Course in astronomy, astrophysics and astrobiology - 4 days

1.1 Schedule

	Day 1	Day 2	Day 3	Day 4
08:00-09:30.	Accreditation/Inauguration/Pre Course Assessment	Workshop 4	Workshop 8	Workshop 10
09:30-10:30	Lecture 1	Lecture 2	Lecture 3	Lecture 4
10:30-11:00	Coffee	Coffee	Coffee	Coffee
11:00-12:30.	Workshop 1	Workshop 5	Workshop 9	Working Group 3
12:30-14:00	Lunch	Lunch	Lunch	Lunch
14:00-15:30	Workshop 2	Workshop 6	Working Group 2	Post course Assessment/closure
15:30-16:00	Coffee	Coffee	Astronomical Visit	
16:00-17:30	Workshop 3	Workshop 7	Astronomical Visit	
17:30-20:00	Dinner(free time)			
19:00-22:00	Working Group 1 Observation 1			

1.2 Themes of the lecture

- 1 - Stellar evolution
- 2 - Cosmology
- 3 - History of Astronomy
- 4 - Solar System

1.3 Topics of the workshops

- 1 - Local horizon and watches of sun
- 2 - Movement of the stars, the sun and the Moon
- 3 - Stages and eclipses
- 4 - Briefcase from the young astronomer
- 5 - Solar spectrum and sunspots
- 6 - Life of stars
- 7 - Astronomy beyond the visible
- 8 - Expansion of the Universe
- 9-Planets and exoplanets
- 10- Astrobiology

1.4 Topics for Working Groups

- 1 - Preparation observations
- 2 - Astronomy in the city or Arqueoastronomy
- 3 - Debate on the teaching of astronomy in the host country/city. Meeting with posters to show the participating teachers experience. Exhibitions of astronomy books.

Publication: 14 steps to the Universe

1.5 Evaluations

- At the beginning of the course, a written diagnostic evaluation is carried out (multiple choice). During the course evaluations are made through direct observations of the workshops, the participation and exchange of students.

- On the last day of the course, a final evaluation is made, which consists in the same test than diagnosis one (same paper, answers with different colour). After the assessment delivery, it is made the pooling the pooling becomes and the revision of the correct answers at that time.

-At the end of the course, one proceeds to the satisfaction survey delivery, which must be completed by the student and delivered to the NASE trainers to its assessment.

- Finally, one proceeds to an impact assessment (or monitoring of the learning transfer) after a few months. This task covers more of an axis of action:

a) An assessment is sent in a personalized way that inquires about the contents of the course (assimilation of concepts), the use of the contents in the classroom, how often these contents are used and whether they conform to the current curriculum.

b) Participants are provided with a template type, to report on specific activities, related to matters of NASE. In that worksheet you should indicate activity, space where it is developed, level and number of students, a brief description of what has been done and two photos. The projects generated from the course are shared in the NASE web page:

<http://sac.csic.es/astrosecundaria/es/cursos/realizados/proyectos/ListaProyectosPaises.php>

c) The students of NASE are invited to propose new activities, according to the format of "Supplementary Material", which not only helps to enrich the reservoir of didactic resources in astronomy of NASE, but also allows you to assess how NASE promotes and stimulates new proposals.

- The submitted projects are organized according to the addressee age (between 3 and 11 years and between 12 and 18) and according to the themes, and they are shared in the web page of NASE:

http://sac.csic.es/astrosecundaria/es/material_complementario/MaterialComplementario.php

2. Monographic course of Astronomy of Position

2 Days

2.1. Schedule

	Day 1	Day 2
08:00-09:30 hs.	Accreditation/Inauguration/Pre course evaluation	Workshop 3
09:30-10:30 hs.	Lecture 1	Lecture 2
10:30-11:00 hs.	Break	Break
11:00-12:30 hs.	Workshop 1	Workshop 4
12:30-13:30 hs.	Lunch	Lunch
13:30-15:00 hs.	Workshop 2	Workshop 5
15:00-16:30 hs.	Working group 2	Working group 3 / closing assessment
16:30-17:00 hs.	Break	Break
17:00-18:30 hs.	Astronomical visit	
18:30-19:30 hs.	Dinner (Free Time)	
19:30-22:00 hs.	Working group 1 Observation	

2.2 Themes of the lectures

- 1 - History of Astronomy
- 2- Solar System.

2.3 Topics of the workshops

- 1 - Local horizon and sundials.
- 2 - Simulators of movement
- 3 - Earth-Moon-Sun system: phases and eclipses
- 4 - Briefcase from the young astronomer
- 5 - Planets and exoplanets.

2.4 Topics for working groups

- 1- Preparation Observations: Software and telescopes:
- 2- Astronomy in the city, Cultural Astronomy or Arqueoastronomy
- 3- Debate on the teaching of astronomy in the host country. Meeting with posters to show the participating teachers experience. Exhibitions of astronomy books.

Publication: *Geometry of shadows*

2.5 Evaluations

The evaluation of the Monograph course is equivalent to the full NASE course (see section 1.5).

3. Monographic course of Astrophysics –

2 Days

3.1. Schedule

	Day 1	Day 2
08:00-09:30 hs.	Accreditation/Inauguration/Pre course evaluation	Workshop 3
09:30-10:30 hs.	Lecture 1	Lecture 2
10:30-11:00 hs.	Break	Break
11:00-12:30 hs.	Workshop 1	Workshop 4
12:30-13:30 hs.	Lunch	Lunch
13:30-15:00 hs.	Workshop 2	Workshop 5
15:00-16:30 hs.	Working group 2	Working group 3 / closing assessment
16:30-17:00 hs.	Break	
17:00-18:30 hs.	Astronomical visit	
18:30-19:30 hs.	Dinner (Free Time)	
19:30-22:00 hs.	Working Group 1 Observation	

3.2 Themes of the Lectures

- 1 - Life of stars
- 2- Cosmology

3.3 Topics of the workshops

- 1-Solar Spectrum and sunspots
- 2-Life of stars
- 3-Astronomy outside the visible
- 4-Expansion of the Universe
- 5-Simulators of movement.

3.4 Topics for working groups

- 1-Preparation Observations: Software and telescopes:
- 2-Astronomy in the city, Cultural Astronomy or Arqueoastronomy
- 3-Debate on the teaching of astronomy in the host country Meeting with posters to show the participating teachers experience. Exhibitions of astronomy books.

Publication: Lights of the Cosmos

3.5 Evaluations

The evaluation of the monograph course is equivalent to the full NASE course (see section 1.5)

2- Monographic course of Astrobiology –

2 Days

4.1. Schedule

	Day 1	Day 2
08:00-09:30 hs.	Accreditation/Inauguration/Pre course evaluation	Workshop 3
09:30-10:30 hs.	Lecture 1	Lecture 2
10:30-11:00 hs.	Break	Break
11:00-12:30 hs.	Workshop 1	Workshop 4
12:30-13:30 hs.	Lunch	Lunch
13:30-15:00 hs.	Workshop 2	Workshop 5
15:00-16:30 hs.	Working group 2	Working group 3 Closing assessment
16:30-17:00 hs.	Break	
17:00-18:30 hs.	Astronomical visit	
18:30-19:30 hs.	Free Time	
19:30-22:00 hs.	Working group 1 Observation	

4.2 Themes of the lectures

- 1-Life of stars
- 2-SolarSystem.

4.3 Topics of the workshops

- 1-Phases and eclipses
- 2-Solar and Stellar demonstrators
- 3-Astronomy outside the visible
- 4-Planets and exoplanets.
- 5-Astrobiology

4.4 Topics for working groups

- 1-Preparation observations
- 2-Astronomy in the city or Arqueoastronomy
- 3-Debate on the teaching of astronomy in the host country/city. Meeting with posters to show the participating teachers experience. Exhibitions of astronomy books.

4.5 Evaluations

The evaluation of the monograph course is equivalent to the full NASE course (see section 1.5)