

Study Guide

Early Childhood Education: Focusing on Science and Education for Sustainability

First cycle, 12 credits, Full time studies Course code: UB313F

Spring semester, 2025

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Welcome!

Welcome to the course, “Early Childhood Education Focusing on Science and Education for Sustainability”. In this Study Guide you will find information about the course, including schedule, literature lists, grading criteria, information about course assessment along with other practical details.

All courses at the Department of Child and Youth Studies have their own course website, where you will find all the information you need regarding the course; as e.g. the course syllabus, schedule, course literature and Study Guide. You can find the course web site here: www.buv.su.se/UB313F

The course starts January 20th 13-16 in lecture room 129, first floor at the Department of Child and Youth Studies.

The address for the Department of Child and Youth Studies is: Frescati Backe, Svante Arrhenius väg 21 A (entrance 21A).

The students that you will meet in the course are exchange students from partner universities of Stockholm University, students from the programme in Early Childhood Education at the department of Child and Youth Studies and students who have applied for the course as a freestanding single subject course.

The course is running for 8 weeks.

Literature and reference systems

The course literature is listed on the course website, and at the end of this Study Guide. At the end of this Study Guide you will find our recommendation on what to read before the lectures.

The reference system used in the course follows the Harvard system.

Information and guide in English: Please follow the manual for the Harvard reference system. A more brief description is available at: [Harvard - writing a reference list \(umu.se\)](http://Harvard-writing-a-reference-list(umu.se)) while a more detailed (and helpful) guide to the Harvard reference guide can also be found here [Harvard Referencing Style Guide \(ucd.ie\)](http://Harvard Referencing Style Guide(ucd.ie))

As you use references in your written exams, it is important that you, except from the authors name(s) and year always also add the page number. In all written examinations in the requirement is that the reference handling must be essentially correct in order to achieve a passing grade.

Information and guide in Swedish language:

I denna kurs används Harvardsystemet för referenshantering. Följ Borås-guidens hänvisningar. I guiden (3.1.1.) står att praxis när det gäller sidor i texthänvisningen varierar inom olika ämnesområden. Både citat och referat ska anges med sidhänvisning. I alla skriftliga examinationer är kravet att referenshanteringen ska vara i huvudsak korrekt för att uppnå godkänt betyg. [Klicka här för att hämta Borås-guiden.](#)

Academic Writing Service

The Academic Writing Service provides writing support to all students who write their course work, e.g., essays, reports, research papers, theses etc. in English. All services are free of charge for students at Stockholm University

You are welcome to contact the [Academic writing service.](#)

Additional information

Other important information about being a student at Stockholm University can be found at the following web site: www.su.se/newstudent

New students are very welcome to attend the welcome activities You can find more information here:

[Welcome Activities](#)

Evaluation

Students are invited to participate in discussions about the course and are free to bring up suggestions for changes during the course. An on-line evaluation form will be distributed to all students at the end of the course.

Course content

This course consists of two course modules; MO01: *Early Childhood Educational Perspective on Science and Education for Sustainability*, 8 credits, and MO02: *Subject Learning and Teaching in Science and Education for Sustainability*, 4 credits. The course provides an introduction to the learning environments and explorative approaches to science and education for sustainable development from the perspective of early childhood education.

The course covers scientific exploration in preschools using project-based work, aesthetic forms of expression and outdoor teaching activities. The course also covers the significance of materials for children's scientific explorations and meaning-making as well as pedagogical documentation as a tool for highlighting children's thoughts and ideas about scientific phenomena and sustainable development.

Intended Learning Outcomes

In order to pass the course module *Early Childhood Educational Perspective on Science and Education for Sustainability*, 8 credits, students are expected to be able to:

- plan, carry out, document and evaluate projects with focus on science and education for sustainable development in preschool
- use pedagogical documentation to evaluate and develop the teaching on science and sustainable development in preschool
- use aesthetic forms of expressions, play and digital tools to communicate science and sustainability in educational contexts

In order to pass the course module *Subject Learning and Teaching in Science and Education for Sustainability*, 4 credits, students are expected to be able to:

- give an account of a specialised subject content in science and education for sustainability from an early childhood education perspective
- use relevant theories and terminologies to identify and analyse children's exploration of science and sustainability in everyday life

Schedule

There is an **up-dated** schedule on the course web site:

www.buv.su.se/UB313F

Attendance

All seminars, workshops and study visits are mandatory. In case of absence, contact the course leader for instructions on make-up assignments.

Examination

MOM1: Early Childhood Educational Perspective on Science and Education for Sustainability (8 cr)

Individual paper focusing on science and/or sustainability teaching

A written paper discussing science and/or sustainability teaching and learning focusing on children's possibilities to explore the environment. The written report is graded according to a criterion referenced seven-point scale: A-F

Oral group presentation

An oral group presentation of Swedish, ordinary and wild trees, flowers, birds, mammals or bugs. The students in the study group plan and present collaboratively, using creative methods such as ICT, film, slide show, drama etc. The oral group presentation is graded according to the scale Fail/Pass (G/U)

MOM2: Subject learning and teaching in Science and Education for Sustainability (4 cr)

Individual reflection on seminars

A written reflection on three seminars in the course with focus on sustainable development issues in preschool. The written reflection is graded according to the scale Fail/Pass (G/U)

Examination dates

- MOM1: The oral group report is presented at the seminar on the **4th of March**.
 - MOM1: Individual paper focusing on science and/or sustainable development – uploaded on ATHENA under examinations not later than the **11th of March, 17 pm**.
 - MOM2: Individual reflection on seminars – uploaded on ATHENA under examinations not later than **11th of March, 17 pm**.
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Instructions and assessment criteria

Examination instructions

MOM1: Early Childhood Educational Perspectives on Science and Education for Sustainability (8 cr)

Individual paper focusing on science and/or sustainable development

Your task in MOM1 is to plan and discuss an intended science and/or sustainable development project in a group of preschool children. The project should be explorative and involve practical/laboratory and aesthetic forms of expression.

The project planning is reported in a paper focusing on children's exploration of science and sustainable development. In the paper children's science learning is discussed, with the help of central theories and concepts, and related to governing documents and literature covered in the course.

Instructions for writing the individual paper

The individual paper should be approximately 2000-2500 words long, written in Times New Roman 12 p. The title page following should include information about:

Title of the project
Course (UB313F)
Spring 2025, MOM1
Name

The following parts must be found in the paper:

Introduction – A short introduction on the subject you have chosen to focus on in your project. Why do you want to explore this subject together with the children? Connect your choice of subject to the curriculum.

Scientific/Sustainable development content - Describe the science and/or sustainable development content covered in the project and what knowledge you as a teacher, need to be able to develop the project with the children. To include relevant subject content search for, and use, additional literature such as textbooks, children's fact books/ reference books for children etc. Remember to include the reference books in the literature list.

Description of the project – Describe and motivate, using the course literature, the working methods you would like to adopt. How could this be related to something you noticed in your park/playground visit? Which didactic considerations concerning planning of the project and choosing methods do you need to take into account when planning the project? What goal/goals in the curriculum are you working towards? How do you intend to use pedagogical documentation?

Discussion: Discuss the intended learning outcomes using central concepts in the course and in relation to the course literature. If possible, relate this to an observation from your park/playground visit.

It is important that you refer to the course literature in this task. Use Harvard as reference system and add a list of references at the end of your work.

The paper (approximately 2 500 words) should be uploaded on ATHENA (via the content comparison database *Urkund*) in the folder **MOM1: Individual paper focusing on science and/or sustainable development** under Examinations not later than **the 11th of March, 17 pm**.

Oral group presentation

An oral presentation that is prepared and planned individually and collectively in the study groups. The study group focuses on *ordinary, wild, swedish*

- Trees
- Flowers
- Birds
- Mammals
- Bugs

Each person in the study group makes careful research on three of the above-named categories each, depending on the chosen focus of the study group. This research focuses distinct features, life cycles and life conditions. The study group then puts together what the individual members have found out and chooses *one* of these to present in class. The presentation should focus on a potential project work

in a preschool around that specific tree/flower/bird/mammal/bug. Each study group gets 15 minutes at their disposal for doing the presentation. The presentation should be both imaginative and pedagogical when presenting facts in order to work as an introduction for colleagues in preparation of a future project work. Be prepared to present your tree/flower/bird/mammal/bug in front of the class using creative/aesthetic methods – remember to bring any material you need.

MOM2: Subject learning and teaching in Science and Education for Sustainability (4 cr)

Individual reflection on seminars (+ discussion seminar in the study group)

During the course you will participate in different seminars with various themes – exploring science with aesthetical methods, outdoor teaching, ecology etc....*Choose three of the seminars* and reflect on the content and potential learning outcomes in the seminars *focusing especially on sustainable development* in relation to preschool and children's learning.

- How can the content/ideas from the seminar be used/developed in a preschool context? Your reflection/suggestions shall especially focus on education for sustainable development (ESD).
- How can the activities in the seminar be “translated” to a preschool context? Also in this reflection your focus should be on sustainable development and ESD in preschool.

The reflection should be based on the main thoughts/content in the seminars and relate to relevant course literature and the curriculum.

The individual reflection on seminars should be uploaded on ATHENA under examinations not later than **11th of March, 17 pm.**

Instructions for writing the individual reflection

The individual reflection on three different seminars from the course should be approximately 1200-1400 words long, written in Times New Roman 12 p. The title page following should include information about:

Course (UB313F)

Spring 2025, MOM2, Individual Reflection

Name

The following parts must be found in the individual reflection:

Introduction – Which three seminars have you chosen to write about/reflect upon? Why?

The seminars one by one – The reflection on each chosen seminar should include a short resume of the content of the seminar/lecture. Discuss how you would like to use the ideas and knowledge from the seminar in a preschool context, especially focusing on education for sustainable development (ESD). The reflection should relate to relevant course literature.

Conclusion – Close the paper with a short reflection on how you would like to work with sustainability and ESD in preschool.

References – A list with the literature you have referred to in your reflection.

Plagiarism and regulations for disciplinary matters

As a student you have to be conscientious about clearly accounting for the material used in the texts that are submitted for examination. To use other people's expressions or ideas without stating where they are from is plagiarism. To translate and/or change some words in someone else's text and present it as one's own is obviously also a form of plagiarism. The teachers in the course may use the web-based tool Urkund to check your text for plagiarism.

Plagiarism is considered to be cheating and if discovered in an exam or paper, the exam or paper will immediately be failed and disciplinary measures may be taken. Any student who is caught cheating or disrupting academic activities can be suspended from lectures and exams for a period of up to six

months. The Vice-Chancellor or the Disciplinary Council decides whether the student is to be subject to any disciplinary measures.

Plagiarism, cheating and self-plagiarism. You can find more extensive information here:

[Swedish language](#)

[English language](#)

Assessment criteria

MOM1:

Individual paper focusing on science and/or technology/sustainable development

E. Adequate. The planning of the intended project is described with help of central concepts in the course and the curriculum. The scientific/technological/sustainable development content in the intended project is described using relevant literature individually chosen by the student. Didactic considerations in the project are discussed using the course literature. The text is written in accordance with the instructions and with use of a reference system.

D. Satisfactory. The planning of the intended project is **thoroughly** described with help of central concepts in the course and the curriculum. The scientific/technological/sustainable development content in the intended project is **thoroughly described** using relevant literature individually chosen by the student. Didactic considerations in the project are discussed using the course literature. The text is written in accordance with the instructions and with **satisfactory** use of a reference system.

C. Good. The planning of the intended project is **well motivated** and thoroughly described with help of central concepts in the course and the curriculum. The scientific/technological/sustainable development content in the intended project is thoroughly described using relevant literature individually chosen by the student. Didactic considerations in the project **are well motivated and** discussed using the course literature. The text is written in accordance with the instructions and with satisfactory use of a reference system

B. Very Good. The planning of the intended project is well motivated and thoroughly described with help of central concepts in the course and the curriculum. The scientific/technological/sustainable development content in the intended project is thoroughly described using relevant literature individually chosen by the student. Didactic considerations in the project are well motivated and **thoroughly discussed in relation to central concepts in the course and to the course literature.** The text is written in accordance with the instructions and with satisfactory use of a reference system.

A. Excellent. The planning of the intended project is well motivated and thoroughly described with help of central concepts in the course and the curriculum. The scientific/technological/sustainable development content in the intended project is thoroughly described using relevant literature individually chosen by the student. Didactic considerations in the project are well motivated **and critically** and thoroughly discussed **in depth** in relation to central concepts in the course and to the course literature. The text is written in accordance with the instructions and **with correct and consequent** use of a reference system.

Fx. Insufficient. The paper has one or several shortcomings, but the shortcomings are regarded possible to be attended to within two weeks. Shortcomings include: the area of knowledge, references

to course literature, the paper does not show adequate command of the English language, and/or does not have a satisfactory reference system.

F. Fail. As Fx, but the shortcomings are regarded too extensive to be attended to. The student must hand in a new text.

Oral group presentation

G. Pass. The oral group report – the animal presentation – is planned and presented according to the instructions by all members in the study group collaboratively. The presentation is adapted to suit preschool children and include creative/aesthetic forms of expression.

F. Fail. The oral group report is not planned or presented in accordance with the instructions.

MOM2:

Individual reflection on seminars

G. Pass. The individual reflection on three seminars in the course is written in accordance with the instructions and relate to relevant course literature.

F. Fail. The individual reflection is not written in accordance with the instructions.

Grade for the whole course

To get a grade for the whole course, all examinations must be finished with at least the grades G or E. The grade for the whole course is based on the grade of the individual paper focusing on science and education for sustainability (MOM1).

Re-examination and Fail

A student who has received a grade of E or higher may not take a re-examination for a higher grade. In addition, a registered passing grade may not be altered to Fail.

A student who receives the grade Fx once has the possibility of complementing the exam within two weeks after receiving the grade. If improvements are not done in the time allotted, the student is required to retake the examination. A student who has received the grade of F, Fx or U twice on a given examination and by the same examiner may apply and be granted a new examiner. The application should be addressed to the director of studies.

The next opportunity for re-examination will take place on the 22nd of April 2025. The digital folder where re-examinations should be handed in opens on the 15th of April. Students who want to re-take the examination should contact the course administrator before the 8th of April 2025.

Course Literature

Valid as of the spring semester 2024.

Course within the Section for Early Childhood Education. Decided by the departmental board 231024.

*Titles marked with * can be found electronically, either at su.se/stockholm-university-library or open on the internet.*

*Titles marked with ** are available as PDF-files at the courses site on Athena.*

Course literature

- * Areljung, S. (2020). Capturing the world with verbs: Preschool science education beyond nouns and objects. *Contemporary Issues in Early Childhood Education*. 21(1), pp. 70-82. doi:10.1177/1463949118805438 (13p.)
- * Caiman, C. & Lundegård, I. (2013). Pre-school children's agency in learning for sustainable development. *Environmental Education Research*, 20(4), pp. 437-459. doi:10.1080/13504622.2013.812722 (22 p.)
- * Flee, M., Gomes, J. & March, S. (2014). Science learning affordances in preschool environments. *Australasian Journal of Early Childhood*, 39(1), pp. 38-48. doi:10.1177/18369391140390010 (11 p.)
- * Günther-Hanssen, A., Danielsson, A. T., & Andersson, K. (2020). How does gendering matter in preschool science: Emergent science, 'neutral' environments and gendering processes in preschool. *Gender and Education*, 32(5), pp. 608-625. doi:10.1080/09540253.2019.1632809 (30 p.)
- * de Freitas, E., & Palmer, A. (2016). How scientific concepts come to matter in early childhood curriculum: Rethinking the concept of force. *Cultural Studies of Science Education*, 11(4), 1201- 1222. doi:10.1007/s11422-014-9652-6 (20 p.)
- Harris Helm, J. & Katz, L. (2011). *Young Investigators: The Project Approach in the Early Years*. Teachers College Press. (148 p.)
- Johnston, J. (2007). *Early Explorations in Science - Exploring Primary Science & Technology Education*. Open University Press. (208 p.)
- * Magntorn, O. & Helldén, G. (2007). Reading nature from a 'bottom-up' perspective. *Journal of Biological Education*, 41(2), pp. 68-75. doi:10.1080/00219266.2007.9656065 (7 p.)
- * Rooney, T. (2019). Weathering time: walking with young children in a changing climate, *Children's*
- * McLennan, D.M.P. (2010). Process or Product? The Argument for Aesthetic Exploration in the Early Years. *Early Childhood Education Journal* 38, 81 -85. doi:10.1007/s10643-010-0411-3 (10 p.) *Geographies*, 17(2), pp. 177-189. doi:10.1080/14733285.2018.1474172 (13 s.)
- * Sundberg, B., Areljung, S. & Ottander, C. (2019). Opportunities for Education for Sustainability through multidimensional preschool science. *NorDiNa*, 15(4), pp. 358-369. urn.kb.se/resolve?urn=urn:nbn:se:oru:diva-79732 (20 p.)
- * Taylor, A. & Pamcini-Ketchabaw, V. (2015). Learning with children, ants, and worms in the Anthropocene: towards a common world pedagogy of multispecies vulnerability. *Pedagogy, Culture & Society*, 23(4), pp. 507-529. doi:10.1080/14681366.2015.1039050 (23 p)
- * Tovey, H. (2007). *Playing Outdoors. Spaces and Places, Risk and Challenge*. Open University Press. (150 p.)

Government agency references

- * Skolverket (2018) *Curriculum for the Preschool, Lpfö 18*. (16 p.)

Additional course literature such as articles, reports etc. as assigned by the teacher (approximately 200 pages).