CHLDV159 : Science and Math for Young Children

General Information

Author:	• Michelle Stonis • Owens, Deborah • Biancheri, Mary Jane
Course Code (CB01) :	CHLDV159
Course Title (CB02) :	Science and Math for Young Children
Department:	CHLDV
Proposal Start:	Fall 2024
TOP Code (CB03) :	(1305.00) Child Development/Early Care and Education
CIP Code:	(19.0709) Child Care Provider/Assistant.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000618019
Curriculum Committee Approval Date:	05/22/2024
Board of Trustees Approval Date:	07/16/2024
Last Cyclical Review Date:	05/22/2024
Course Description and Course Note:	CHLDV 159 is a survey of materials in science, nature, and mathematics suitable for teaching young children (ages 0 - 6 years). Students acquire the appropriate blend of content and pedagogical skills to increase their confidence and attitudes towards science and mathematics when working with young children. Students receive training in using appropriate materials, inquiry- based experiences, and guided discovery teaching methods to promote learning. Students gain practice in translating curriculum standards and guidelines into high quality early childhood, transitional kindergarten, and kindergarten programs.
Justification:	Mandatory Revision
Academic Career:	• Credit
Mode of Delivery:	No value
Author:	• Biancheri, Mary Jane
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	• Child Development/Early Childhood Education
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)	**Course Special Class Status (CB13)**

Course is not a basic skills course.

Course is not a special class.

Grading Basis

- Grade with Pass / No-Pass Option

☐ Allow Students to Gain Credit by Exam/Challenge

Pre-Collegiate Level (CB21)

Not applicable.

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

Not Applicable

Transferability

Transferable to CSU only

Transferability Status

Approved

Units and Hours

Summary

Minimum Credit Units (CB07)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	54
Total Course Out-of-Class Hours	108
Total Student Learning Hours	162

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	3	6
Laboratory Hours	0	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	54
Laboratory	0
Studio	0
Total	54

Course Out-of-Class Hours	
Lecture	108
Laboratory	0
Studio	0
Total	108

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Advisory

CHLDV135 - Child Growth And Development

Objectives

- Analyze major developmental milestones for children from birth through adolescence in the areas of physical, psychosocial, cognitive, and language development using standard research methodologies.
- Analyze how cultural, economic, political, historical contexts affect children's development.
- Compare and contrast various theoretical frameworks that relate to the study of human development, examine and evaluate the role of play and its relationship to development at various stages.
- Apply developmental theory to the analysis of child observations, surveys, and/or interviews using investigative research methodologies.
- Differentiate characteristics of typical and atypical development at various stages.
- Analyze the importance of the early years and the interaction between maturational processes and social/environmental factors and the effects on various areas of development.
- Explore contemporary social issues that impact children's development.

Entry Standards

Entry Standards

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Methods of Instruction	Discussion
Methods of Instruction	Multimedia
Methods of Instruction	Collaborative Learning
Methods of Instruction	Demonstrations
Methods of Instruction	Guest Speakers
Methods of Instruction	Presentations

Out of Class Assignments

- Reflective essay (e.g., reflect on classroom experiences in light of their journey as an educator)
- Midterm project (e.g., offer a developmentally appropriate science experience to an early childhood class)
- Essay (e.g., describe and justify a math experience offered in a children's classroom)

Methods of Evaluation	Rationale
Exam/Quiz/Test	Midterm and final examinations
Presentation (group or individual)	Student presentation (e.g., facilitate a science experience with one's classmates)
In-Class Activity (answering journal prompt, group activity)	Group project (e.g., make play-doh and mix colors while connecting them to science standards)

Textbook Rationale

The Department of Education texts are the latest versions of what elementary and early childhood programs are using. No newer editions are available.

Textbooks

Author	Title	Publisher	Date	ISBN
Abbott, Dixie	California Preschool Learning Foundations, Volume 1	California Department of	2008	978-0-80116810

Education				
Ong, Faye	California Preschool Learning Foundations, Volume 3	California Department of Education	2012	978-8011-1727-5
Vicki Carper Bartolini	Creating a Reggio-Inspired STEM Environment for Young Children	Redleaf Press	2021	978-1-60554-698-8

Other Instructional Materials (i.e. OER, handouts)

No Value

Materials Fee

No value

Learning Outcomes and Objectives

Course Objectives

Describe a developmentally appropriate science, nature and mathematics curriculum for children between 0-6 years old.

Define materials and experiences that will give children a strong science, nature and mathematics foundation.

Explain the effectiveness of inquiry-based experiences.

Identify science and mathematics curriculum standards and translate those into high quality science and mathematics experiences for young children.

SLOs

Engage young children in science and mathematics learning experiences. Expected Outcome Performance: 70.0

ILOs Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.

Plan and implement an integrated curriculum that includes developmentally and culturally appropriate science and math experiences that engage young children in scientific inquiry and constructivist thinking. Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Reflect and act upon personal responsibility as local and global citizens; respect and appreciate social and cultural diversity and recognize the complexity of the world; value and articulate the significance of environmental sustainability and social justice.

Develop appropriate curriculum learning goals from California Pre-K Science and Math Foundations to inform hands-on and discovery-based curriculum experiences.

Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.

Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

Preschool Learning Foundations: Science (8 hours)

- Science inquiry strand
- Physical science strand

Preschool Learning Foundations: Math (8 hours)

- Number sense
- Algebra
- Measurement
- Geometry
- Mathematical Reasoning

Communicating with Families about Curriculum (5 hours)

Constructivist Approaches to Science (8 hours)

- Investigations
- Science experiments
- Cooking solids and liquids
- Inquiry-based approach
- Including multiple teaching styles

Constructivist Approaches to Math (8 hours)

- Math experiments
- Measurement

Nature (6 hours)

- Investigations in nature
- Nature-based play
- Open-ended materials

Block Play (6 hours)

- Number sense (one-to-one correspondence)
- Geometry
- Fractions
- Research behind block play
- Student investigations using materials

Inclusion (5 hours)

- Meeting children where they are
- Supporting all developmental needs

Total Hours: 54

Additional Information

Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.

No

GCC Major Requirements

No Value

GCC General Education Graduation Requirements

No Value

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Resources

Did you contact your departmental library liaison?

No

If yes, who is your departmental library liason?

No Value

Did you contact the DEIA liaison?

No

Were there any DEIA changes made to this outline?

No

If yes, in what areas were these changes made:

No Value

Will any additional resources be needed for this course? (Click all that apply)

- No

If additional resources are needed, add a brief description and cost in the box provided.

No Value