

Graduate Certificate in Post-Secondary Mathematics Education

2 Graduate Certificate Create 2021-22

I. General Catalog Information

The faculty member originating this proposal is to complete sections I,II, and III.

TURN ON help text before starting this proposal by clicking  in the top right corner of the heading.

You will need to turn on help text again after any actions that refresh the page including after saving proposals, importing information, or running impact reports.

FILL IN ONLY fields required marked with an *. You will not be able to launch the proposal without completing the required fields.

Department*

Mathematical Sciences

Degree Type*

Graduate and Advanced Graduate Certificate

Program Type*

Certificate

Certificate Name* Graduate Certificate in Post-Secondary Mathematics Education

Total Required Credits* 18

Term of First Enrollment*

Fall 2021

Graduate Coordinator for Proposed Certificate*

Jichun Li

Certificate Type*

- Graduate (minimum bachelor's degree required for admission)
 Graduate Advanced (minimum master's degree required for admission)

How will this academic program be delivered when the program begins?

- 100% face-to-face courses
 Hybrid (some online courses, some face-to-face courses)

(mark all that apply)* 100% online courses

Typical Time to Degree* 1-2 years

Admission Term Deadlines:

Deadlines for each semester must be on or before: Fall - August 1st, Spring - December 1st, Summer - May 1st

Admission Terms* Fall
 Spring
 Summer

Application Deadlines* August 1, December 1, May 1

Provide the proposed CIP code 27.9999

II. Certificate Information

Required Additional Documents

Please attach required documents by navigating to the Proposal Toolbox and clicking  in the top right corner.

- a. Certificate Financial Aid Reporting Form – Available on the [Graduate Curriculum](#) page
- b. Three Year Academic Assessment Plan – Available from [UNLV Office of Academic Assessment](#)
- c. Two (2) letters of support

- i. Chair/Director of the academic unit that will offer the certificate
- ii. Academic Dean

Each letter must verify that the proposed certificate has received faculty approval through the appropriate governance procedures, as well as the existence of necessary resources to support the Certificate as presented in the proposal.

- d. Five Representative Course Syllabi (for certificates with fewer than 5 courses, provide all course syllabi)

Documents Required for Submission to be Complete Certificate Financial Aid Reporting Form – Available on the Graduate Curriculum page
 Three Year Academic Assessment Plan – Available from UNLV Office of Academic Assessment
 Two (2) letters of support
 Five Representative Course Syllabi (for certificates with fewer than 5 courses)

Five Representative Course Syllabi (for certificates with fewer than 5 courses, provide all course syllabi)

Executive summary describing the proposed certificate program*

The certificate will be an 18 credit hour program that is intended to prepare current instructors of remedial or secondary-level mathematics to be eligible to teach co-requisite/gateway mathematics courses in Nevada.

Explanation of how the proposed certificate is related to existing undergraduate and/or graduate programs, and how this certificate will provide knowledge and skills not already available to current or potential UNLV students.*

The certificate is composed solely of existing graduate-level courses in mathematics, statistics, and education. The certificate satisfies a need that is not currently available with existing programs. The choice of courses to be taken in the certificate can provide a stackable option for a master's or Ph.D. degree.

A statement describing the profile of potential certificate students and market demand for the certificate program, including, related occupations, job placement opportunities and market trend data when available.*

To boost the completion rates, colleges and universities are dropping remedial math courses and offering co-req math courses instead. In the coming years, there will be a market demand for people who can teach college level mathematics instead of remedial mathematics. The proposed certificate program is designed accordingly.

Description of the academic unit's capability for offering this certificate; including administration of the program, faculty resources and expertise, and other required resources.*

The courses are all currently being offered. No additional resources should be needed.

Description of the administration of the certificate, including:

Number of students anticipated to be enrolled and strategies for recruitment:*

Estimated 10 students per semester recruited from local high school teachers and from instructors currently teaching preparatory classes (MATH 95, 96) within the NSHE system.

Submission of new courses (if necessary for certificate program) to the Graduate Course Review Committee.*

No new courses are required.

A detailed budget for the establishment and administration of proposed certificate program, including acknowledgement of what additional resources (if any) are required in order to offer proposed certificate.*

Existing budget will be used for instruction of the certificate courses. Some assistance with online course development and management might be needed.

Description of any accreditation requirements, off-campus partnerships or other details involving campus-wide and/or external partnerships or affiliations.*

None required. The proposed certificate courses are in line with peer institution offerings.

Please list the number, names and rank of faculty who will be supporting the instruction for this proposed program*

Most Mathematical Sciences instructors are capable of teaching these courses. The particular instructors assigned to teach these classes will vary from term to term. In summer and fall, 2020, the following instructors were involved.

MAT 680: Arthur Baragar
MAT 691: Malwane Ananda
MAT 655: Peter Shiue
MAT 657: Zhijian Wu
MAT 714: Satish Bhatnagar

Student Authentication – Federal guidelines require that distance education and correspondence programs utilize mechanisms that verify student identity. UNLV strives to insure that this is done with all programs, not just those delivered via distance education. Describe how this program will verify student identity. (for more information on student authentication see the UNLV [Office of Online Education](#) and [WICHE](#))

Describe how this program will verify student identity.*

Students will present appropriate credentials using their UNLV Rebel ID cards and NSHE numbers.

Learning Outcomes*

1. Demonstrate sufficient depth and rigor of mathematical sciences to instruct introductory college level courses.
2. Become proficient in the ability to formulate and solve mathematical problems encountered by college students at the gateway (100) level.
3. Understand, analyze, and write mathematical proofs.
4. Engage in activities requiring originality, critical analysis, and expertise in mathematics.
5. Communicate and instruct mathematics at the college entry level.

III. Graduate Catalog Content and Degrees Directory

Follow these steps to build the new certificate curriculum:

1. Click on  "View Curriculum Schema." Click 'Add Core' and name your core (please use a comparable degree program in the current graduate catalog as a template). Add any descriptive text (do not add courses until Step 2). Descriptive text is generally used in the following cores: Plan Description, Plan Admission Requirements, Plan Requirements, Plan Certificate Completion Requirements.
2. There are two options for adding courses: "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculum Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.
3. Click on  "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 2. Select the courses you wish to add. For removing courses click on the  and proceed.

Plan Description

The certificate will be an 18 credit hour program that is intended to prepare current instructors of remedial or secondary-level mathematics to be eligible to teach co-requisite introductory mathematics courses in higher education institutions in Nevada or other states with similar programs. For more information about the program, please visit the Degree Directory.

Plan Admission Requirements

Application deadlines Applications available on the UNLV Graduate College website. Students must have a Bachelor's degree related to mathematics to apply for this certificate. Qualified students must apply for admission to the Graduate College via the online application portal. All minimum Graduate College requirements **MUST** be met. Students are accepted into a certificate program as described in the Graduate Catalog. The faculty and corresponding sub-disciplines and sub-plans within the described programs are subject to change at any time.

Plan Requirements

Total Credits: 18

Course Requirements

Core Courses - Credits: 12

Complete 12 credits by choosing 4 courses from the following list:

CIG 621 Diagnostic Assessment School Mathematics	3
CIS 628 Technology Application in Secondary Mathematics Education	3
MAT 655 Elementary Theory of Numbers I	3
MAT 711 Survey of Mathematical Problems I	3
MAT 714 History of Mathematics	3
STA 691 Statistics for Scientists I	3

Elective Courses - Credits: 6

Complete 6 credits by choosing 2 courses from the following list:

MAT 680 College Geometry	3
MAT 651 Foundations of Mathematics I	3
MAT 657 Introduction to Real Analysis I	3
CIG 620 Principles of Learning Mathematics	3
MAT 789 Topics in Advanced Mathematics	3

Certificate Requirements

Students must earn an overall GPA of 3.0 or higher in all courses for the certificate.

Plan Certificate Completion Requirements

Certificate will be awarded upon the student's successful completion of all certificate requirements. The student must submit all required forms to the Graduate College as well as apply for graduation by the appropriate deadline. A maximum of 15 credits may be eligible for transfer into a Master or Doctoral level program.

The [Degrees Directory](#) provides current and consistent degree information. Submission of this form indicates acknowledgment and understanding that every department is responsible for creating and maintaining accurate and updated program information on the UNLV Degrees Directory.

**Degrees Directory
Program Entry***

Check this box to acknowledge the above statement.

**Sample program of
study***

Summer: STA 691 (summer II), MAT 680 (summer III)

Fall: MAT 655, MAT 711, MAT 651, MAT 657

Spring: MAT 714, MAT 793, STA 691

Summer: STA 691 (summer II), MAT 793 (Summer II or III), MAT 680 (summer III)

3. LAUNCH proposal by clicking  in the top left corner.

4. Finish the launch of your proposal by clicking the icon  located in the Proposal Toolbox on left side at top. Make your decision, comment is optional, and click on "Make decision".

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

IV. Department Vote Information

Note: This section is to be filled out by the Department Chair on behalf of the committee.

(The role has been assigned to the corresponding person on this step. If incorrect, please notify GradCurriculum@unlv.edu)

1. Review the proposal. Discuss and make appropriate revisions.

2. Fill in vote information.

3. Then go to the proposal toolbox at the top right side. Click on  and select the corresponding decision for the committee. This will enable the proposal to go to the next person on the workflow.

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

Date faculty voted on proposal 1/22/2021

Result of Vote 20 Yes/ 4 No / 4 Abstain

Manner of vote online

V. College Vote Information

Note: This section is to be filled out by the College Committee Chair on behalf of the committee.

(The role has been assigned to the corresponding person on this step. If incorrect, please notify GradCurriculum@unlv.edu)

1. Review the proposal. Discuss and make appropriate revisions.
2. Fill in vote information.
3. Then go to the proposal toolbox at the top right side. Click on  and select the corresponding decision for the committee. This will enable the proposal to go to the next person on the workflow.

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

Date faculty voted on proposal 2/11/2021

Result of Vote 5-0-0

Manner of vote online

VI. Processing Notes (Graduate College/Registrar Use Only)

Program Alerts (E.g. **View Program Disclaimer)**

PS Processing Notes

PS Processing Date

Initials

Aalog Processing Notes

Aalog Processing Date

Initials

Comments for Graduate Certificate in Post-Secondary Mathematics Education

Curriculog	3/15/2021 2:52 pm Reply
Emily Lin has approved this proposal on Graduate Dean.	
Curriculog	3/2/2021 1:52 pm Reply
Graduate Curriculum has approved this proposal on Graduate Programs Committee.	
Gregory Moody	3/2/2021 1:17 pm Reply
14-0 in favor. WebEx March 2, 2021	
Curriculog	3/2/2021 1:17 pm Reply
Gregory Moody has approved this proposal on Graduate Programs Committee.	
Curriculog	2/12/2021 11:57 am Reply
Andrew Andres has approved this proposal on School/College Associate Dean / Dean.	
Rohan Dalpatadu	2/11/2021 10:55 pm Reply
Approved by a vote of 5-0-0.	
Curriculog	2/11/2021 10:55 pm Reply
Rohan Dalpatadu has approved this proposal on School/College Committee.	
Graduate Curriculum	1/26/2021 6:47 pm Reply
Approval on behalf of the Department Chair at the request of the Department Chair and College Dean 1/26/2021 email.	
Curriculog	1/26/2021 6:47 pm Reply
Graduate Curriculum has force approved this proposal.	
Graduate Curriculum	1/24/2021 9:50 am Reply
Per request by department Chair and Dean, with department vote at 20 yes, 4 no, 4 abstain.	
Curriculog	1/24/2021 9:50 am Reply

Graduate Curriculum has force approved this proposal.

Curriculog

1/6/2021 11:30 am [Reply](#)

Graduate Curriculum has approved this proposal on Technical Review.

Curriculog

1/6/2021 11:30 am [Reply](#)

Graduate Curriculum has force approved this proposal.

Curriculog

1/6/2021 11:29 am [Reply](#)

Graduate Curriculum has approved this proposal on VPAP Step/ Graduate College Dean Review Step.

Curriculog

1/6/2021 10:17 am [Reply](#)

Emily Lin has approved this proposal on VPAP Step/ Graduate College Dean Review Step.

Curriculog

12/30/2020 1:46 pm [Reply](#)

EVP VPAP has approved this proposal on VPAP Step/ Graduate College Dean Review Step.

Curriculog

12/21/2020 9:50 am [Reply](#)

Andrew Andres has approved this proposal on Originator.

Curriculog

12/18/2020 7:14 pm [Reply](#)

Andrew Andres has launched this proposal.