UC RIVERSIDE

[New Business] Combined Data Science B.S. + Statistics M.S. program

Jun Li <jun.li@ucr.edu>   Fri, Mar 6, 2026 at 1:38 PM
To: Kenneth Barish <barish@ucr.edu>, Cherysa Cortez <cherysa.cortez@ucr.edu>

Dear Chair Barish,

Thank you very much for sharing the Senate feedback on our proposed Combined Data Science B.S. + Statistics M.S. program. We have carefully considered the comments from the Graduate Council and revised the proposal accordingly. Attached please find the updated proposal along with the proposed catalog changes. The third attachment is the same updated proposal with revisions highlighted in red so that the Graduate Council can easily identify the changes.

Below are our responses to each of their comments.

Regarding the first comment concerning accessibility for transfer students, our proposed Combined Data Science B.S. + Statistics M.S. program does provide the same accessibility to transfer students. In the current catalog under "Joint B.S.+1 Statistics M.S. Program," the beginning of the second paragraph states: "A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year." To make this explicit, we have added the following paragraph on page 4 of the updated proposal:

"Eligibility of Transfer Students. Transfer students enrolled in the UCR Data Science major will have the same opportunity to pursue the combined B.S.+M.S. program. Although transfer students are not eligible for preliminary admission based on high school criteria, they may apply for official admission to the M.S. component upon satisfying the requirements outlined in the Official Admission Minimum Criteria above."

We have also revised the wording regarding double counting throughout the proposal to reflect the approved system-wide language and have included justification for the double counting.

Regarding the following comment: "Starting on page 10 of the proposal, the catalog entry appears to be for a change to the existing undergraduate major in Data Science. Also starting on page 18, the catalog entry appears to be for a change to the existing Joint B.S. + 1 Statistics M.S. Program. These two program changes should be submitted separate from the proposal for a Combined Data Science B.S. + Statistics M.S. Program."

Our intention was not to propose two independent program changes. The first catalog entry is intended to inform Data Science majors about the combined program and direct them to the catalog section of the existing Joint B.S.+1 Statistics M.S. Program for details on admission criteria and degree requirements. The second catalog entry is meant to update the existing Joint B.S.+1 Statistics M.S. Program so that its requirements can also apply to Data Science majors. These are coordinated revisions in support of a single combined program.

We structured the catalog language in this way to avoid repetition, since the terminal degree of this combined program is the Statistics M.S., and the requirements are largely aligned with those of the existing Joint B.S.+1 Statistics M.S. Program.

If this comment is intended to suggest that these catalog changes should not be submitted together with the proposal, we would like to note that Sarah S. Miller from the Senate advised us to include a two-column catalog change so that the catalog can be updated upon approval of the proposal, thereby avoiding potential delays.

We also received the following comment from the Committee on Planning and Budget: "While Statistics and Computer Science are the primary hosts, the program's growth might impact specific courses in other departments. Chairs of departments that may be impacted should be alerted to monitor potential enrollment shifts."

In our current Data Science major, students are only required to complete MATH 10A. However, students who wish to pursue the proposed combined B.S. + M.S. program would need to take MATH 10B in order to prepare for the graduate-level Mathematical Statistics course they would take during their senior year. As a result, the Mathematics department may see some Data Science majors enrolling in MATH 10B once the program is approved. We have emailed the Chair of the Mathematics department about this potential enrollment impact and indicated that we do not expect the number of additional students to be large at this stage, but we will monitor enrollment closely as the program develops.

Please let me know if you have any questions or need additional information regarding our proposed combined program. Thank you very much for your time and consideration.

Best regards,

Jun

Jun Li
Professor of Statistics
Director, Data Science Major

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3 attachments

📄 **Combined DS BS+STAT MS Program Proposal_March2026.pdf**
749K

📄 **Combined DS BS+STAT MS Program_Catalog Changes_March2026.pdf**
484K

📄 **Combined DS BS+STAT MS Program Proposal_March2026_Highlight.pdf**
749K

Proposal for a Combined

Data Science BS / Statistics MS
Five Year Degree Program

March 2026

Proposed by the Faculty of the Data Science Program
University of California, Riverside
Riverside, CA 92521

1 Introduction

The Data Science program proposes a new degree offering that allows students to earn a joint BS/MS through an integrated five-year plan of study. The B.S. in Data Science is an intercollegiate major jointly offered by the Department of Computer Science and Engineering (within the Bourns College of Engineering) and the Department of Statistics (within the College of Natural and Agricultural Sciences). Since Data Science integrates both Computer Science and Statistics, students may develop a stronger interest in Statistics and choose to pursue a Master's degree in that field. Therefore, we propose a combined Data Science BS + Statistics MS program. For students who may develop a stronger interest in Computer Science and decide to pursue a Master's degree in Computer Science, we will submit a separate proposal for a combined Data Science BS + Computational Data Science MS program.

The proposed program follows the framework established by the UCR Committee on Educational Policy and the UCR Graduate Council in 2007. It is designed to prepare students for careers requiring specialized knowledge in statistics, and to lay the foundation for pursuing doctoral degrees. This Joint BS/MS program is open to UCR undergraduates only.

Participation in the combined degree programs is initiated through an application for admission prior to the student's senior year. Neither the Graduate Division nor the Statistics Department provides full financial support for students enrolled in the program.

Motivation: As noted in the document, "Establishment of Combined Programs at UCR"[1] "Combined programs can better attract top high school graduates, transfer students, and returning students, especially those interested in advanced degrees. Thus, UCR departments can expect a higher proportion of good undergraduates. Combined program students will be more inclined to stay at UCR for their Masters studies instead of applying to other institutions. Thus, UCR departments can better retain these students." UC has placed an increased emphasis on attracting transfer students from community colleges and the joint BS+MS program provides a unique opportunity for these students.

In sum, the program should attract top students into both the BS and MS programs.

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[1] https://senate.ucr.edu/about/policies/establishment_of_combined_programs_at_ucr.html

Combined Data Science BS/Statistics MS degree

Method: To make it possible to complete both degrees in five years, combined programs allow double counting of up to 30 percent of the required graduate degree credits taken by a student while an undergraduate at that campus. In the Statistics MS program, all graduate students are required to complete a twelve-unit graduate core. Allowing these twelve units of graduate-level coursework to be double counted toward both the BS and MS degrees enhances the appeal of the combined program to a broad pool of highly motivated students and facilitates completion of the master's degree within an accelerated time frame (e.g., one year).

Relation to existing programs. The program consists of the same course requirements as the already-existing Statistics MS Plan II-examination. The students will take the STAT 201ABC series (twelve units in total) in their senior year as part of the electives for the Data Science BS degree. Therefore, as the primary motivation for the program is to attract and attain top students, the program involves no new courses or requirements.

Contributions to diversity. Since the new program will allow well prepared students to obtain a master degree within one year after they obtain a B.S. degree, it can greatly reduce their financial burden and therefore attract more underrepresented students who are usually from low-income family. For example, we plan to recruit more students from community colleges, who transfer to UCR and then complete BS+1 program, and encourage underrepresented students to apply our BS+1 program. In addition, the Statistics Department will provide necessary resources and help, such as funding for conference travels, fellowships awards, and frequent Q&A sessions, to increase retention of underrepresented minority students. The department will also broaden the diversity of faculty by cultivating a diverse pipeline and ensuring that faculty thrive for retention and improved climate, and campus policies and departmental incentives are aligned to make aggressive progress on hiring goals. Our department student clubs such as Highlander Statistics Society, Statistics GSA and Mu Sigma Rho will also help us recruit and retain the underrepresented students by investing in each student's success, sense of belonging, and cultural competency. The above diversity goals for students can be measured by the broader demographics of eligibility pools, applicants, and enrollments, improved graduation rates and time to graduation for disadvantaged groups, and 2nd-year retention rates. The diversity goals for faculty can be measured by broader demographics of availability pools, hiring pools, and new hires, improved retention and turnover rates, improved rates of performance measurement and advancement for underrepresented and disadvantaged groups, and equity in salary and other resources.

Interrelation with other UC institutions. The proposed program would be unique among Data Science programs nationally. Consequently, beyond making the respective BS and MS programs more attractive, the program does not directly compete or inter- relate with other UCR or UC programs or institutions. It may indirectly recruit top students into the UCR (or other UC) statistics PhD programs via the MS program.

Department that will administer the program. The BS portion will be administered jointly by the Department of Computer Science and Engineering (within the Bourns College of Engineering) and the Department of Statistics (within the College of Natural and Agricultural Sciences). The MS portion will be administered by the Department of Statistics.

Timetable for development. The new program will be open for application in August 2026 and start for the Fall 2026 entry term.

Historical development of the field. There is a strong and consistent demand for data scientists across private industry, government, institutional services, and research sectors. According to the Bureau of Labor Statistics, employment for data scientists is projected to grow by **36%** by 2033. Many of these roles require applicants to

Combined Data Science BS/Statistics MS degree

hold a master's degree in statistics, computer science, or a related field. As a result, the job outlook for M.S. graduates in statistics remains exceptionally favorable, driven by the increasing need for expertise in data analytics, machine learning, and statistical modeling across a wide range of industries.

Plan for evaluation of the program. The effectiveness of the program will be evaluated by monitoring the extent to which it increases the quality of students in the Data Science BS and Statistics MS programs. The metrics of evaluation will include GPA, graduation rates, job placement, and acceptance to advanced degree programs.

2. Program

Admission Criteria. The proposed 5-year combined Data Science BS + Statistics MS program will have two timeframes for admission, one of which is for conditional admission: 1) preliminary conditional admission as an incoming lower division student, and 2) admission as a senior meeting admission criteria. We propose to offer outstanding freshman the opportunity to apply for preliminary (conditional) admission into the combined Data Science BS + Statistics MS program based on their undergraduate admission qualifications. This can serve as a recruiting tool as well as increase participation in the program. Official admittance (application via the graduate division) would still require meeting the course and GPA criteria and satisfactory progress in the undergraduate major.

Preliminary Conditional Admission Criteria (First-Year Students)

- High School GPA >3.6
- Satisfy Entry-Level Writing requirement prior to matriculation
- Eligible to enroll in or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter

Official Admission Minimum Criteria (apply via the Graduate Division for the MS portion)
- Enrolled in the UCR Data Science Program
- Overall GPA 3.0 or higher
- Data Science major GPA 3.3 or higher
- Completion of MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C

Eligibility of Transfer Students. Transfer students enrolled in the UCR Data Science major will have the same opportunity to pursue the combined BS+MS program. Although transfer students are not eligible for preliminary admission based on high school criteria, they may apply for official admission to the MS component upon satisfying the requirements outlined in the Official Admission Minimum Criteria above.

Combined Data Science BS + Statistics MS Degree Requirements. The Data Science BS program course requirements remain as currently outlined in the general catalog.

The Statistics MS requires a total of 41 units, and the course and examination requirements are the same as currently outlined in the general catalog for the regular Statistics MS program. More specifically, to earn the Statistics MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 206, STAT 208, STAT 288, and two quarters of STAT 293. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.

During the MS portion of the program, students must maintain a GPA (both overall and in the major) of at least 3.0 for all coursework. If the GPA falls below 3.0, they may be dropped from the program.

Additional requirements are successfully passing a written comprehensive examination.

Sample Combined Data Science BS + Statistics MS Degree Program. The following table outlines a sample program for students in the proposed combined Data Science BS + Statistics MS program. Graduate courses STAT 201ABC taken prior to matriculation to graduate status will double count towards the Data Science BS and the Statistics MS degree requirements.

Sample Joint Data Science BS/Statistics MS Course Plan

	FALL	**WINTER**	**SPRING**
1ST YEAR	CS 010A (4) MATH 009A (4) ENGL 001A (4) H/SS Breadth (4) 16 UNITS	CS 010B (4) MATH 009B (4) ENGL 001B (4) H/SS Breadth (4) 16 UNITS	CS 010C (4) MATH 009C (4) ENGL 001C or ENGR 180W (4) Physical Sci Breadth (5) 17 UNITS
2ND YEAR	CS 100 (5) STAT 010 (5) MATH 031 (5) Bio Sci Breadth (4) 19 UNITS	CS/MATH 011 (4) STAT 011 (5) MATH 010A (4) Additional Nat Sci Breadth (5) 18 UNITS	CS 105 (4) CS 111 (4) MATH 010B (4) Additional Nat Sci Breadth (5) 17 UNITS
3RD YEAR	CS 141 (4) STAT 107 (4) STAT 156A or STAT 160A (4) H/SS Breadth (4) 16 UNITS	CS 166 or CS 167 (4) CS 108/STAT 108 (4) STAT 160B (4) H/SS Breadth (4) 16 UNITS	STAT 167 or CS 171/EE 142 (4) STAT 160C (4) STAT 169 (4) H/SS Breadth (4) 16 UNITS
4TH YEAR	STAT 170 (4) Application Course Sequence (4) STAT 201A (4) 12 UNITS	Application Course Sequence (4) H/SS Breadth (4) STAT 201B (4) 12 UNITS	STAT 183 or CS 179 (E-Z) (4) STAT 201C (4) 8 UNITS
	STAT 202A (4)	STAT 202B (4)	STAT 202C (4)

5TH YEAR (MS)	STAT 207 (4) STAT 293 (4)	STAT 293 (4) Elective (4) STAT 288 (1)	STAT 208 (4) STAT 291 (4)
	12 UNITS	13 UNITS	12 UNITS

Normative time from matriculation to degree. Five years.
Catalog entry

Combined Data Science B.S.+ Statistics M.S. Program

We offer a combined five-year B.S. + M.S. program, designed to allow successful UCR Data Science B.S. graduates to complete the Master of Science degree in Statistics in one year, by allowing the double counting of up to 30 percent of the required graduate degree credits taken by a student while an undergraduate at that campus. (The graduate-level credits eligible for double counting are those that satisfy the technical elective requirements of the B.S. degree.) More information regarding this combined program can be found in the catalog section of Joint B.S.+1 Statistics M.S. Program.

Joint B.S.+1 Statistics M.S. Program

The College of Natural and Agricultural Science offers a combined B.S.+1 Statistics M.S. program, designed to allow successful B.S. graduates in Data Science or Statistics who have taken some graduate level statistics courses in their senior standing year in UCR to complete the Master of Science degree in Statistics in one year, by allowing up to 12 units of graduate level coursework taken in UCR as an undergraduate to be counted towards the MS degree requirements.

A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year. To apply, the student must have a cumulative GPA at least 3.0 overall, 3.3 GPA in the Data Science or Statistics major, and have completed MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C with GPA at least 3.3 in STAT 160A or STAT 156A, STAT 160B, STAT 160C. These are minimum requirements and do not guarantee the admission. The application to the B.S.+1 M.S. program must include a transcript, and at least two recommendation letters. Submission of GRE scores with the application is recommended but not required. During students' senior year, students must apply via the Graduate Division for the M.S. portion. Matriculation into the graduate portion of the B.S.+1 M.S. program occurs in the Fall term following their final year, provided: (a) the M.S. application is accepted, (b) throughout the final undergraduate year at UCR the student has a cumulative GPA 3.0 or higher, (c) by the end of senior standing year, the student completes the B.S. degree requirements.

Incoming freshman students who apply to the Data Science or Statistics B.S. program may simultaneously apply for preliminary conditional admission into the B.S.+1 Statistics M.S.

program provided their high-school GPA is at least 3.6, they satisfy the Entry-Level Writing requirement prior to matriculation, and they are eligible to enroll in or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter.

Preliminary conditional admission status is maintained as long as the student is a Data Science or Statistics B.S. student in good standing with a cumulative GPA of at least 3.0. Conditionally admitted students still need to apply for full admission by the start of their senior standing year as described above and apply via the Graduate Division for the MS portion. Continuing undergraduate students who meet the above criteria may apply to the program by submitting a petition and should confer with their staff advisor for details.

To earn the MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 207, STAT 208, STAT 288, and two quarters of STAT 293, and pass the written exam. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. The courses that can be double counted must be graduate level courses and be eligible to be counted as electives in the B.S. requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.

Comprehensive Examination

All M.S. students are required to take a written comprehensive examination and pass at the M.S. level, with no more than two attempts allowed to pass. A program proposal is not required.

Advancement to Candidacy

Advancement for the master's candidacy occurs at the beginning of the quarter the student plans to graduate.

Professional Development

Students in the B.S.+1 Statistics M.S. Program must register two quarters of STAT 293, which give students training in (a) the ability to use fundamental statistical techniques to formulate problem and solution in diverse real-world application; (b) the ability to use at least one statistical software package to conduct statistical data analysis; (c) the ability to communicate with researchers in statistical community and other disciplines by using graphical methods to display and interpret information.

Normative time

The normative time to B.S. is four years, and the normative time of the MS portion is one year (five years total).

3. Projected Need, resource requirements, student support

This combined program is primarily a recruitment tool, intended to leverage the increasing interest in graduate education to attract top freshmen into the Data Science BS program, and to attract top UC Riverside Data Science BS students into the Statistics MS program.

In the Data Science BS program, the prospect of entering the program at year three and completing both the Data Science BS and Statistics MS in a total of five years should attract students that are highly motivated and more likely than average to make it through the program. The combined BS/MS program will increase the visibility of the Data Science undergraduate major to entering students. We expect that the opportunity of earning a combined BS/MS in three years will be highly attractive to community college transfer students as well. Enrollment of community college students has recently become an urgent priority for the University of California. Combined with ongoing increases in admissions standards, this should increase both retention and the overall quality of the students.

In the MS program, we anticipate growth in combined-program enrollment initially of only a few students per year. There would be no expectation of support for the participants in the combined BS/MS program. In addition, if at some point in the future, funding opportunities emerge from campus, college, department, or Graduate Division sources for MS students, then fifth-year BS/MS students would be eligible. Each student accepted into the combined program is likely to be near the top of the applicant pool. If a student decides to continue on for a Ph.D., then full support packages would be provided.

In short, the main effect of the program should be to increase the quality and diversity of students in the Data Science BS and Statistics MS programs, and achieve a modest increase in enrollment levels. Similarly, it should increase the employability of students produced by the BS and MS programs, and help meet the increasing demand for Statistics students with graduate degrees.

Resources
Note that each student in the combined program is essentially just a regular student (in the BS program, or, in fifth year, in the MS program), and requires the same resources as a regular student at the same level. Also, because of the highly selective nature of the admissions requirements, BS and MS enrollments will be modestly affected, at least initially. Therefore, the program requires no change in faculty, courses, or resources such as library, computing, equipment, space, etc. Likewise, the program requires no change in levels or mechanisms for student funding.

The program does require minor administrative support. During the Data Science BS portion of this program, students will be advised by either the CNAS Undergraduate Academic Advising Center or the BCOE Undergraduate Academic Advising Center as normal for pursuance of a BS in Data Science. The administration of the program at the undergraduate level requires processing applications for preliminary acceptance, tracking preliminarily enrolled students, and identifying and informing students who will be eligible to apply at the end of their junior year. The administrative functions for admission to the Statistics Graduate program are already performed

by the department Graduate Admission Committee; this committee will also be responsible for administering this BS/MS program with continued support from the CNAS Graduate Student Affairs Center, which will have to track which MS students are in the combined program and account for the double-counting allowance.

Finally, only to the extent that existing resources allow, BS students with "preliminary conditional admission" status will be given additional advising appropriate for MS-bound students.

4. Changes in Senate Regulations

No changes in Senate regulations are required.

5. Implementation timeframe

The new program will be open for application in August 2026 and start for the Fall 2026 entry term.

Proposal for a Combined

Data Science BS / Statistics MS
Five Year Degree Program

March 2026

Proposed by the Faculty of the Data Science Program
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1 Introduction

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The proposed program follows the framework established by the UCR Committee on Educational Policy and the UCR Graduate Council in 2007. It is designed to prepare students for careers requiring specialized knowledge in statistics, and to lay the foundation for pursuing doctoral degrees. This Joint BS/MS program is open to UCR undergraduates only.

Participation in the combined degree programs is initiated through an application for admission prior to the student's senior year. Neither the Graduate Division nor the Statistics Department provides full financial support for students enrolled in the program.

Motivation: As noted in the document, "Establishment of Combined Programs at UCR"[1] "Combined programs can better attract top high school graduates, transfer students, and returning students, especially those interested in advanced degrees. Thus, UCR departments can expect a higher proportion of good undergraduates. Combined program students will be more inclined to stay at UCR for their Masters studies instead of applying to other institutions. Thus, UCR departments can better retain these students." UC has placed an increased emphasis on attracting transfer students from community colleges and the joint BS+MS program provides a unique opportunity for these students.

In sum, the program should attract top students into both the BS and MS programs.

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Combined Data Science BS/Statistics MS degree

Method: To make it possible to complete both degrees in five years, combined programs allow double counting of up to 30 percent of the required graduate degree credits taken by a student while an undergraduate at that campus. In the Statistics MS program, all graduate students are required to complete a twelve-unit graduate core. Allowing these twelve units of graduate-level coursework to be double counted toward both the BS and MS degrees enhances the appeal of the combined program to a broad pool of highly motivated students and facilitates completion of the master's degree within an accelerated time frame (e.g., one year).

Relation to existing programs. The program consists of the same course requirements as the already-existing Statistics MS Plan II-examination. The students will take the STAT 201ABC series (twelve units in total) in their senior year as part of the electives for the Data Science BS degree. Therefore, as the primary motivation for the program is to attract and attain top students, the program involves no new courses or requirements.

Contributions to diversity. Since the new program will allow well prepared students to obtain a master degree within one year after they obtain a B.S. degree, it can greatly reduce their financial burden and therefore attract more underrepresented students who are usually from low-income family. For example, we plan to recruit more students from community colleges, who transfer to UCR and then complete BS+1 program, and encourage underrepresented students to apply our BS+1 program. In addition, the Statistics Department will provide necessary resources and help, such as funding for conference travels, fellowships awards, and frequent Q&A sessions, to increase retention of underrepresented minority students. The department will also broaden the diversity of faculty by cultivating a diverse pipeline and ensuring that faculty thrive for retention and improved climate, and campus policies and departmental incentives are aligned to make aggressive progress on hiring goals. Our department student clubs such as Highlander Statistics Society, Statistics GSA and Mu Sigma Rho will also help us recruit and retain the underrepresented students by investing in each student's success, sense of belonging, and cultural competency. The above diversity goals for students can be measured by the broader demographics of eligibility pools, applicants, and enrollments, improved graduation rates and time to graduation for disadvantaged groups, and 2nd-year retention rates. The diversity goals for faculty can be measured by broader demographics of availability pools, hiring pools, and new hires, improved retention and turnover rates, improved rates of performance measurement and advancement for underrepresented and disadvantaged groups, and equity in salary and other resources.

Interrelation with other UC institutions. The proposed program would be unique among Data Science programs nationally. Consequently, beyond making the respective BS and MS programs more attractive, the program does not directly compete or inter- relate with other UCR or UC programs or institutions. It may indirectly recruit top students into the UCR (or other UC) statistics PhD programs via the MS program.

Department that will administer the program. The BS portion will be administered jointly by the Department of Computer Science and Engineering (within the Bourns College of Engineering) and the Department of Statistics (within the College of Natural and Agricultural Sciences). The MS portion will be administered by the Department of Statistics.

Timetable for development. The new program will be open for application in August 2026 and start for the Fall 2026 entry term.

Historical development of the field. There is a strong and consistent demand for data scientists across private industry, government, institutional services, and research sectors. According to the Bureau of Labor Statistics, employment for data scientists is projected to grow by **36%** by 2033. Many of these roles require applicants to

hold a master's degree in statistics, computer science, or a related field. As a result, the job outlook for M.S. graduates in statistics remains exceptionally favorable, driven by the increasing need for expertise in data analytics, machine learning, and statistical modeling across a wide range of industries.

Plan for evaluation of the program. The effectiveness of the program will be evaluated by monitoring the extent to which it increases the quality of students in the Data Science BS and Statistics MS programs. The metrics of evaluation will include GPA, graduation rates, job placement, and acceptance to advanced degree programs.

2. Program

Admission Criteria. The proposed 5-year combined Data Science BS + Statistics MS program will have two timeframes for admission, one of which is for conditional admission: 1) preliminary conditional admission as an incoming lower division student, and 2) admission as a senior meeting admission criteria. We propose to offer outstanding freshman the opportunity to apply for preliminary (conditional) admission into the combined Data Science BS + Statistics MS program based on their undergraduate admission qualifications. This can serve as a recruiting tool as well as increase participation in the program. Official admittance (application via the graduate division) would still require meeting the course and GPA criteria and satisfactory progress in the undergraduate major.

Preliminary Conditional Admission Criteria (First-Year Students)

- High School GPA >3.6
- Satisfy Entry-Level Writing requirement prior to matriculation
- Eligible to enroll in or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter

Official Admission Minimum Criteria (apply via the Graduate Division for the MS portion)
- Enrolled in the UCR Data Science Program
- Overall GPA 3.0 or higher
- Data Science major GPA 3.3 or higher
- Completion of MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C

Eligibility of Transfer Students. Transfer students enrolled in the UCR Data Science major will have the same opportunity to pursue the combined BS+MS program. Although transfer students are not eligible for preliminary admission based on high school criteria, they may apply for official admission to the MS component upon satisfying the requirements outlined in the Official Admission Minimum Criteria above.

Combined Data Science BS + Statistics MS Degree Requirements. The Data Science BS program course requirements remain as currently outlined in the general catalog.

The Statistics MS requires a total of 41 units, and the course and examination requirements are the same as currently outlined in the general catalog for the regular Statistics MS program. More specifically, to earn the Statistics MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 206, STAT 208, STAT 288, and two quarters of STAT 293. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.

During the MS portion of the program, students must maintain a GPA (both overall and in the major) of at least 3.0 for all coursework. If the GPA falls below 3.0, they may be dropped from the program.

Additional requirements are successfully passing a written comprehensive examination.

Sample Combined Data Science BS + Statistics MS Degree Program. The following table outlines a sample program for students in the proposed combined Data Science BS + Statistics MS program. Graduate courses STAT 201ABC taken prior to matriculation to graduate status will double count towards the Data Science BS and the Statistics MS degree requirements.

Sample Joint Data Science BS/Statistics MS Course Plan

	FALL	**WINTER**	**SPRING**
1ST YEAR	CS 010A (4) MATH 009A (4) ENGL 001A (4) H/SS Breadth (4) 16 UNITS	CS 010B (4) MATH 009B (4) ENGL 001B (4) H/SS Breadth (4) 16 UNITS	CS 010C (4) MATH 009C (4) ENGL 001C or ENGR 180W (4) Physical Sci Breadth (5) 17 UNITS
2ND YEAR	CS 100 (5) STAT 010 (5) MATH 031 (5) Bio Sci Breadth (4) 19 UNITS	CS/MATH 011 (4) STAT 011 (5) MATH 010A (4) Additional Nat Sci Breadth (5) 18 UNITS	CS 105 (4) CS 111 (4) MATH 010B (4) Additional Nat Sci Breadth (5) 17 UNITS
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4TH YEAR	STAT 170 (4) Application Course Sequence (4) STAT 201A (4) 12 UNITS	Application Course Sequence (4) H/SS Breadth (4) STAT 201B (4) 12 UNITS	STAT 183 or CS 179 (E-Z) (4) STAT 201C (4) 8 UNITS
	STAT 202A (4)	STAT 202B (4)	STAT 202C (4)

5TH YEAR (MS)	STAT 207 (4) STAT 293 (4)	STAT 293 (4) Elective (4) STAT 288 (1)	STAT 208 (4) STAT 291 (4)
	12 UNITS	13 UNITS	12 UNITS

Normative time from matriculation to degree. Five years.
Catalog entry

Combined Data Science B.S.+ Statistics M.S. Program

We offer a combined five-year B.S. + M.S. program, designed to allow successful UCR Data Science B.S. graduates to complete the Master of Science degree in Statistics in one year, by allowing up to 12 credits of coursework taken as a UCR undergraduate to be counted towards the requirements of the M.S. (The courses that can be double counted are those that are used as technical electives in the B.S. requirements.) More information regarding this combined program can be found in the catalog section of Joint B.S.+1 Statistics M.S. Program.

Joint B.S.+1 Statistics M.S. Program

The College of Natural and Agricultural Science offers a combined B.S.+1 Statistics M.S. program, designed to allow successful B.S. graduates in Data Science or Statistics who have taken some graduate level statistics courses in their senior standing year in UCR to complete the Master of Science degree in Statistics in one year, by allowing up to 12 units of graduate level coursework taken in UCR as an undergraduate to be counted towards the MS degree requirements.

A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year. To apply, the student must have a cumulative GPA at least 3.0 overall, 3.3 GPA in the Data Science or Statistics major, and have completed MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C with GPA at least 3.3 in STAT 160A or STAT 156A, STAT 160B, STAT 160C. These are minimum requirements and do not guarantee the admission. The application to the B.S.+1 M.S. program must include a transcript, and at least two recommendation letters. Submission of GRE scores with the application is recommended but not required. During students' senior year, students must apply via the Graduate Division for the M.S. portion. Matriculation into the graduate portion of the B.S.+1 M.S. program occurs in the Fall term following their final year, provided: (a) the M.S. application is accepted, (b) throughout the final undergraduate year at UCR the student has a cumulative GPA 3.0 or higher, (c) by the end of senior standing year, the student completes the B.S. degree requirements.

Incoming freshman students who apply to the Data Science or Statistics B.S. program may simultaneously apply for preliminary conditional admission into the B.S.+1 Statistics M.S. program provided their high-school GPA is at least 3.6, they satisfy the Entry-Level Writing

requirement prior to matriculation, and they are eligible to enroll in or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter.

Preliminary conditional admission status is maintained as long as the student is a Data Science or Statistics B.S. student in good standing with a cumulative GPA of at least 3.0. Conditionally admitted students still need to apply for full admission by the start of their senior standing year as described above and apply via the Graduate Division for the MS portion. Continuing undergraduate students who meet the above criteria may apply to the program by submitting a petition and should confer with their staff advisor for details.

To earn the MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 207, STAT 208, STAT 288, and two quarters of STAT 293, and pass the written exam. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. The courses that can be double counted must be graduate level courses and be eligible to be counted as electives in the B.S. requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.

Comprehensive Examination

All M.S. students are required to take a written comprehensive examination and pass at the M.S. level, with no more than two attempts allowed to pass. A program proposal is not required.

Advancement to Candidacy

Advancement for the master's candidacy occurs at the beginning of the quarter the student plans to graduate.

Professional Development

Students in the B.S.+1 Statistics M.S. Program must register two quarters of STAT 293, which give students training in (a) the ability to use fundamental statistical techniques to formulate problem and solution in diverse real-world application; (b) the ability to use at least one statistical software package to conduct statistical data analysis; (c) the ability to communicate with researchers in statistical community and other disciplines by using graphical methods to display and interpret information.

Normative time

The normative time to B.S. is four years, and the normative time of the MS portion is one year (five years total).

3. Projected Need, resource requirements, student support

This combined program is primarily a recruitment tool, intended to leverage the increasing interest in graduate education to attract top freshmen into the Data Science BS program, and to attract top UC Riverside Data Science BS students into the Statistics MS program.

In the Data Science BS program, the prospect of entering the program at year three and completing both the Data Science BS and Statistics MS in a total of five years should attract students that are highly motivated and more likely than average to make it through the program. The combined BS/MS program will increase the visibility of the Data Science undergraduate major to entering students. We expect that the opportunity of earning a combined BS/MS in three years will be highly attractive to community college transfer students as well. Enrollment of community college students has recently become an urgent priority for the University of California. Combined with ongoing increases in admissions standards, this should increase both retention and the overall quality of the students.

In the MS program, we anticipate growth in combined-program enrollment initially of only a few students per year. There would be no expectation of support for the participants in the combined BS/MS program. In addition, if at some point in the future, funding opportunities emerge from campus, college, department, or Graduate Division sources for MS students, then fifth-year BS/MS students would be eligible. Each student accepted into the combined program is likely to be near the top of the applicant pool. If a student decides to continue on for a Ph.D., then full support packages would be provided.

In short, the main effect of the program should be to increase the quality and diversity of students in the Data Science BS and Statistics MS programs, and achieve a modest increase in enrollment levels. Similarly, it should increase the employability of students produced by the BS and MS programs, and help meet the increasing demand for Statistics students with graduate degrees.

Resources
Note that each student in the combined program is essentially just a regular student (in the BS program, or, in fifth year, in the MS program), and requires the same resources as a regular student at the same level. Also, because of the highly selective nature of the admissions requirements, BS and MS enrollments will be modestly affected, at least initially. Therefore, the program requires no change in faculty, courses, or resources such as library, computing, equipment, space, etc. Likewise, the program requires no change in levels or mechanisms for student funding.

The program does require minor administrative support. During the Data Science BS portion of this program, students will be advised by either the CNAS Undergraduate Academic Advising Center or the BCOE Undergraduate Academic Advising Center as normal for pursuance of a BS in Data Science. The administration of the program at the undergraduate level requires processing applications for preliminary acceptance, tracking preliminarily enrolled students, and identifying and informing students who will be eligible to apply at the end of their junior year. The administrative functions for admission to the Statistics Graduate program are already performed

by the department Graduate Admission Committee; this committee will also be responsible for administering this BS/MS program with continued support from the CNAS Graduate Student Affairs Center, which will have to track which MS students are in the combined program and account for the double-counting allowance.

Finally, only to the extent that existing resources allow, BS students with "preliminary conditional admission" status will be given additional advising appropriate for MS-bound students.

4. Changes in Senate Regulations

No changes in Senate regulations are required.

5. Implementation timeframe

The new program will be open for application in August 2026 and start for the Fall 2026 entry term.

Proposed Catalog Changes to the Undergraduate Major in Data Science

PRESENT:	PROPOSED:
Subject abbreviation: DTSE **The Marlan and Rosemary Bourns** **College of Engineering** **Subject abbreviation: DTSC** **The College of Natural** **and Agricultural Sciences**	[no change]
Major Data science studies the collection, management, and analysis of data to extract knowledge. It is a multidisciplinary program with core components from Computer Science and Statistics, and required application study in a variety of empirical disciplines. Courses span the discipline from theory to practice and prepare students for careers or graduate studies in data-intensive fields. The B.S. in Data Science major is an intercollege major offered by the Marlan and Rosemary Bourns College of Engineering and the College of Natural and Agricultural Sciences. A B.S. degree in Data Science is offered by each college. When students declare the major, they choose from which college they wish to have their degree awarded. Students whose degrees are awarded by the Marlan and Rosemary Bourns College of Engineering are advised in and have their records maintained by the BCOE Office of Student Academic Affairs; students whose degrees are awarded by the College of Natural and Agricultural Sciences are advised in and have their records maintained by the CNAS Undergraduate Academic Advising Center. Breadth requirements vary by college; and students must fulfill the breadth requirements of the college they choose. All undergraduates in the Marlan and Rosemary Bourns College of Engineering must see an advisor at least annually. Visit student.engr.ucr.edu for details.	**Major** [no change]

University Requirements See Undergraduate Students section.	**University Requirements** [no change]
College Requirements College breadth requirements vary depending on which college is chosen to award the degree. For details on breath requirements, see the Colleges and Programs section of this catalog. Students are encouraged to consult their advisor regarding requirements.	**College Requirements** [no change]

Transfer Admissions Requirements of Data Science Major
 	
Minimum 2.80 cumulative GPA
Minimum 2.70 GPA in the calculus series
Minimum 2.5 in one of the following series:
  1. Three courses either from the set CS 010A, 010B, 010C, CS/MATH 011, or from the set CS 009A, 009B, 010C, CS/MATH 011
 	
  2. MATH 010A, MATH 031, STAT 008
 	
Minimum Preparation for Data Science:
  1. (CS 010A and CS 010B) or (CS 009A and CS 009B)
  2. MATH 009A or MATH 09HA, MATH 009B or MATH 09HB, MATH 009C or MATH 09HC
Must complete three of the following:
  1. CS010C
  2. CS/MATH 011
  3. MATH 031
  4. MATH 010A
  5. STAT 008 or STAT 010
	Transfer Admissions Requirements of Data Science Major
	[no change]

Change of Major Criteria for the BCOE track All students who request a change of major to Data Science in BCOE must meet the following requirements: • Be in good academic standing	**Change of Major Criteria for the BCOE track** [no change]

- Have no less than a C- in any Statistics, Math, Science and Engineering Coursework

- Be able to complete the major within maximum allowable units

- Complete all the courses listed below, based on the total number of units earned, prior to submitting the major change request

- UCR transfer students interested in changing to a BCOE major must have been admissible to the major at point of entry, or must satisfy transfer admission and change of major requirements before earning 120 units

- If changing in the 90-119 units category, student must have the ability to complete major within 5 years of entry as a Freshmen or 3 years after entry as a Transfer student.

- Students who have earned 120 or more units are not eligible for a change of major in BCOE. NOTE: AP/IB units are excluded from maximum unit calculation.

Completed 0 to less than 45 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

Completed 45 to less than 90 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH 09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

An introductory statistics course (STAT 010 or equivalent) is recommended.

Completed 90 to less than 120 units
Completion of ENGL 001A and ENGL 001B with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B and CS 009C)

- CS 010C

- MATH 011/CS 011

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

- One of MATH 031 or MATH 010A

An introductory statistics course (STAT 010 or equivalent) is recommended.

Change of Major Criteria for the CNAS track All students who request a change of major to Data Science in CNAS must meet the following requirements: - Be in good academic standing	**Change of Major Criteria for the CNAS track** [no change]

- Have no less than a C- in any Statistics, Math, Science and Engineering coursework

- Be able to complete the major within maximum allowable units

- Complete all the courses listed below, based on the total number of units earned, prior to submitting the major change request

- UCR transfer students interested in changing to a CNAS major must have been admissible to the major at point of entry, or must satisfy transfer admission and change of major requirements before earning 135 units

- Changing to the Data Science Major at senior level (greater than or equal to 135 units) is not allowed

Completed 0 to less than 45 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

Completed 45 to less than 90 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:
- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH 09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

An introductory statistics course (STAT 010 or equivalent) is recommended.

Completed 90 to less than 135 units
Completion of ENGL 001A and ENGL 001B with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B and CS 009C)

- CS 010C

- MATH 011/CS 011

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH 09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

- One of MATH 031 or MATH 010A

An introductory statistics course (STAT 010 or equivalent) is recommended.

Major Requirements
1. Lower-division requirements (47-52 units):

   a) (CS 010A, CS 010B, CS 010C) or

   (CS 009A, CS 009B, CS 009C*, CS

   010C)

   b) One math sequence from the following:

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i. MATH 007A or MATH 009A or MATH 009HA, MATH 007B or MATH 009B or MATH 09HB, MATH 009C or MATH 09HC

ii. MATH 005A, MATH 005B, MATH 005C

 c)   MATH 010A, MATH 031

 d)   MATH 011/CS 011

 e)   STAT 010, STAT 011

2.   Upper-division requirements (60 units):

 a)   CS 105, CS 141

 b)   STAT 107, STAT 156A, STAT 156B, STAT 169, STAT 170

 c)   CS/STAT 108

 d)   CS 166 or CS 167

 e)   STAT 167 or CS 171/EE 142

 f)   STAT 183 or CS 179 (E-Z)

 g)   Four courses (at least 16 units) from the following list, none of which can also be used to satisfy other major requirements: CS 131, CS 144, CS 166, CS 167, CS 170, CS 172, CS 173, CS 180, CS 181, MATH 120, MATH 135A, BUS/STAT 104, BUS/STAT 127, STAT 130, STAT 140, STAT 146, STAT 157, STAT 171.

3.   Major Breadth requirement (8 units): One two-course sequence, chosen from the course sequences listed below:

 i.   BIOL 005B, BIOL 005C

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Major Requirements
1. [no change]

2.   Upper-division requirements (60 units):

 a)   CS 105, CS 141

 b)   STAT 107, STAT 156A <u>or STAT 160A</u>, STAT 156B <u>or STAT 160B</u>, STAT 169, STAT 170

 c)   CS/STAT 108

 d)   CS 166 or CS 167

 e)   STAT 167 or CS 171/EE 142

 f)   STAT 183 or CS 179 (E-Z)

 g)   Four courses (at least 16 units) from the following list, none of which can also be used to satisfy other major requirements: CS 131, CS 144, CS 166, CS 167, CS 170, CS 172, CS 173, CS 180, CS 181, MATH 120, MATH 135A, BUS/STAT 104, BUS/STAT 127, STAT 130, STAT 140, STAT 146, STAT 157, <u>STAT 160C,</u> STAT 171.

3.   [no change]

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    ii.   BIOL 005B, BIOL 102

    iii.   BUS 103 and BUS 115

    iv.   BUS 103 and BUS 119

    v.   BUS 105 and BUS 129

    vi.   ECON 108 and ECON 136

    vii.   EE/ME 144 and one of: EE106 or EE 146 or EE148

    viii.   GEO 111 and GEO 161

    ix.   GEO 115 and GEO 147

Note
CS 100 and CS 111 are strongly recommended.

Combined Data Science B.S.+ Statistics M.S. Program
We offer a combined five-year B.S. + M.S. program, designed to allow successful UCR Data Science B.S. graduates to complete the Master of Science degree in Statistics in one year, by allowing the double counting of up to 30 percent of the required graduate degree credits taken by a student while an undergraduate at that campus. (The graduate-level credits eligible for double counting are those that satisfy the technical elective requirements of the B.S. degree.) More information regarding this combined program can be found in the catalog section of Joint B.S.+1 Statistics M.S. Program.

Proposed Catalog Changes to the Joint B.S. +1 Statistics M.S. Program

PRESENT:	PROPOSED:
Joint B.S.+1 Statistics M.S. Program	**Joint B.S.+1 Statistics M.S. Program**
The College of Natural and Agricultural Science offers a combined B.S.+1 Statistics M.S. program, designed to allow successful B.S. graduates who have taken some graduate level statistics courses in their senior standing year in UCR to complete the Master of Science degree in Statistics in one year, by allowing up to 12 units of graduate level coursework taken in UCR as an undergraduate to be counted towards the MS degree requirements.	The College of Natural and Agricultural Science offers a combined B.S.+1 Statistics M.S. program, designed to allow successful B.S. graduates in Data Science or Statistics who have taken some graduate level statistics courses in their senior standing year in UCR to complete the Master of Science degree in Statistics in one year, by allowing up to 12 units of graduate level coursework taken in UCR as an undergraduate to be counted towards the MS degree requirements.
A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year. To apply, the student must have a cumulative GPA at least 3.0 overall, 3.3 GPA in the statistics major, and have completed ~~STAT 160ABC~~ with GPA at least 3.3 in ~~STAT 160ABC sequence~~. These are minimum requirements and do not guarantee the admission. The application to the B.S.+1 M.S. program must include a transcript, and at least two recommendation letters. Submission of GRE scores with the application is recommended but not required. During students' senior year, students must apply via the Graduate Division for the M.S. portion. Matriculation into the graduate portion of the B.S.+1 M.S. program occurs in the Fall term following their final year, provided: (a) the M.S. application is accepted, (b) throughout the final undergraduate year at UCR the student has a cumulative GPA 3.0 or higher, (c) by the end of senior standing year, the student completes the B.S. degree requirements.	A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year. To apply, the student must have a cumulative GPA at least 3.0 overall, 3.3 GPA in the Data Science or Statistics major, and have completed MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C with GPA at least 3.3 in STAT 160A or STAT 156A, STAT 160B, STAT 160C. These are minimum requirements and do not guarantee the admission. The application to the B.S.+1 M.S. program must include a transcript, and at least two recommendation letters. Submission of GRE scores with the application is recommended but not required. During students' senior year, students must apply via the Graduate Division for the M.S. portion. Matriculation into the graduate portion of the B.S.+1 M.S. program occurs in the Fall term following their final year, provided: (a) the M.S. application is accepted, (b) throughout the final undergraduate year at UCR the student has a cumulative GPA 3.0 or higher, (c) by the end of senior standing year, the student completes the B.S. degree requirements.
Incoming freshman students who apply to the Statistics B.S. program may simultaneously apply for preliminary conditional admission into the B.S.+1 Statistics M.S. program provided their high-school GPA is at least 3.6, they satisfy the Entry-Level Writing requirement prior to matriculation, and they are eligible to enroll in or	Incoming freshman students who apply to the Data Science or Statistics B.S. program may simultaneously apply for preliminary conditional admission into the B.S.+1 Statistics M.S. program provided their high-school GPA is at least 3.6, they satisfy the Entry-Level Writing requirement prior to matriculation, and they are eligible to enroll in

to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter.	or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter.
Preliminary conditional admission status is maintained as long as the student is a Statistics B.S. student in good standing with a cumulative GPA of at least 3.0. Conditionally admitted students still need to apply for full admission by the start of their senior standing year as described above and apply via the Graduate Division for the MS portion. Continuing undergraduate students who meet the above criteria may apply to the program by submitting a petition and should confer with their staff advisor for details.	Preliminary conditional admission status is maintained as long as the student is a <u>Data Science or</u> Statistics B.S. student in good standing with a cumulative GPA of at least 3.0. Conditionally admitted students still need to apply for full admission by the start of their senior standing year as described above and apply via the Graduate Division for the MS portion. Continuing undergraduate students who meet the above criteria may apply to the program by submitting a petition and should confer with their staff advisor for details.
To earn the MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 207, STAT 208, STAT 288, and two quarters of STAT 293, and pass the written exam. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. The courses that can be double counted must be graduate level courses and be eligible to be counted as electives in the B.S. requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.	To earn the MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 207, STAT 208, STAT 288, and two quarters of STAT 293, and pass the written exam. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. The courses that can be double counted must be graduate level courses and be eligible to be counted as electives in the B.S. requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.
Comprehensive Examination All M.S. students are required to take a written comprehensive examination and pass at the M.S. level, with no more than two attempts allowed to pass. A program proposal is not required.	**Comprehensive Examination** [no change]
Advancement to Candidacy Advancement for the master's candidacy occurs at the beginning of the quarter the student plans to graduate.	**Advancement to Candidacy** [no change]
Professional Development Students in the Statistics B.S.+1 M.S. Program must register two quarters of STAT 293, which give students training in (a) the ability to use fundamental statistical techniques to formulate problem and solution in diverse real-world application; (b) the ability to use at least one statistical software package to conduct statistical	**Professional Development** [no change]

data analysis; (c) the ability to communicate with researchers in statistical community and other disciplines by using graphical methods to display and interpret information. **Normative time** The normative time to B.S. is four years, and the normative time of the MS portion is one year (five years total).	**Normative time** [no change]

Justification:

The Data Science program proposes a new degree offering that allows students to earn a joint BS/MS through an integrated five-year plan of study. The B.S. in Data Science is an intercollegiate major jointly offered by the Department of Computer Science and Engineering (within the Bourns College of Engineering) and the Department of Statistics (within the College of Natural and Agricultural Sciences). Since Data Science integrates both Computer Science and Statistics, students may develop a stronger interest in Statistics and choose to pursue a Master's degree in that field. Therefore, we propose a combined Data Science BS + Statistics MS program. For students who may develop a stronger interest in Computer Science and decide to pursue a Master's degree in Computer Science, we will submit a separate proposal for a combined Data Science BS + Computational Data Science MS program.

In the proposed joint BS/MS program, students would take the MS-level core courses STAT 201ABC during their fourth year, allowing them to complete an MS in Statistics within one year after earning their BS in Data Science. To better prepare for STAT 201ABC, students in this program would take STAT 156A or STAT 160A, along with STAT 160B and STAT 160C. Therefore, we have added STAT 160A and STAT 160B as alternatives to STAT 156A and STAT 156B and included STAT 160C as an elective in the major requirements.

UC RIVERSIDE

Academic Senate
Professor Kenneth Barish
Division Chair

February 27, 2026

Professor Jun Li, Lead Proponent
Department of Statistics

Re: Combined Data Science B.S. + Statistics M.S. Program - letter and feedback to go to proponents

Dear Professor Li,

The Academic Senate Executive Council discussed the subject proposal during our February 23, 2026 meeting along with comments from the Committees on Courses, Educational Policy, Planning & Budget, as well the Graduate Council and the CNAS and BCOE Faculty Executive Committees; and I write to provide you with the feedback. While the Senate review yielded positive support from most committees, the Graduate Council transmitted important critiques. All comment memos are included for your information and attention.

Should you opt to revise and resubmit the proposal, please send it to my attention (with a courtesy copy to Senate Director Cherysa Cortez at cherysac@ucr.edu) as soon as practicable to give the proposal the best chance for inclusion on a Division meeting agenda. Please indicate [New Business] in the subject line.

Best regards,

Regards,

Ken Barish, Chair
Academic Senate

Cc: CNAS Faculty Executive Committee Chair Tom
        Senate Director Cortez
        CNAS Faculty Executive Committee Liaison Grawe

Enclosures

UC RIVERSIDE

Academic Senate

GRADUATE COUNCIL

January 16, 2026

To: Kenneth Barish, Chair
        Riverside Division

From: Viji Santhakumar, Chair
        Graduate Council

RE: [Campus Review] (Proposal) Combined Data Science B.S. + Statistics M.S. Program

The Graduate Council reviewed and discussed the proposed Combined Data Science B.S. + Statistics M.S. Program at their January 15, 2026 meeting. The Council feels that transfer students should be given the same accessibility to this program and wondered if that would be the case. If so, the Council suggests this be stated in the proposal.

Starting on page 10 of the proposal, the catalog entry appears to be for a change to the existing undergraduate major in Data Science. Also starting on page 18, the catalog entry appears to be for a change to the existing Joint B.S. + 1 Statistics M.S. Program. These two program changes should be submitted separate from the proposal for a Combined Data Science B.S. + Statistics M.S. Program.

Lastly, the wording throughout the proposal regarding double counting needs to be updated to reflect the approved systemwide language that states double counting is allowed up to 30 percent of the required graduate degree credits taken by a student while an undergraduate at that campus. Please also provide some justification for the double-counting in the proposal. The systemwide language includes potential examples, such as "[making] such programs attractive to a large pool of motivated students and facilitate completion of the Masters within an accelerated time frame (e.g., 1 year)."
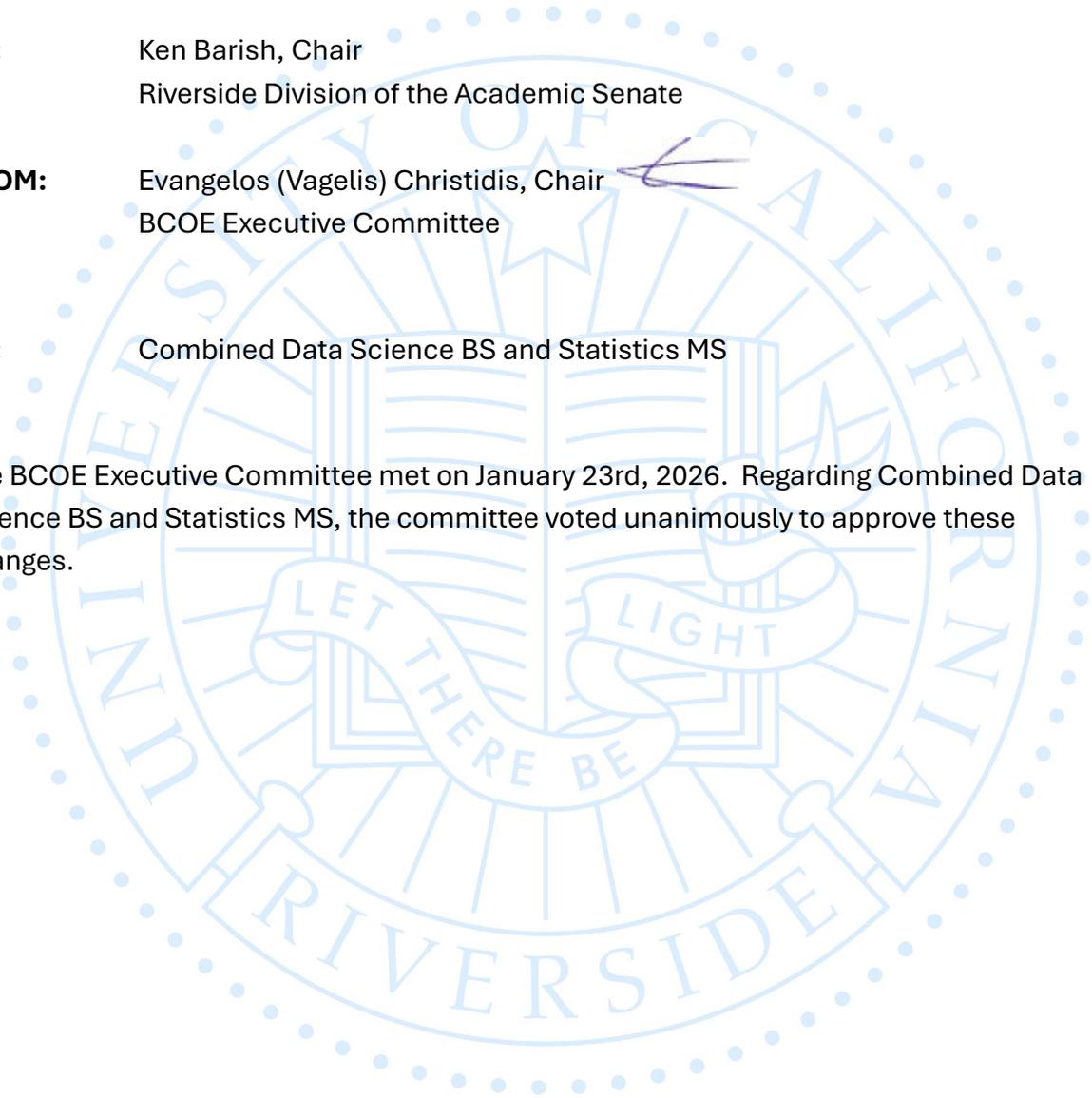
January 23, 2026

TO: Ken Barish, Chair
             Riverside Division of the Academic Senate

FROM: Evangelos (Vagelis) Christidis, Chair
             BCOE Executive Committee

RE: Combined Data Science BS and Statistics MS

The BCOE Executive Committee met on January 23rd, 2026. Regarding Combined Data Science BS and Statistics MS, the committee voted unanimously to approve these changes.

UC RIVERSIDE   *Academic Senate*

COMMITTEE ON EDUCATIONAL POLICY

January 9, 2026

To: Ken Barish, Chair
             Riverside Division

From: Annie Ditta, Chair
             Committee on Educational Policy

Re: Proposed B.S. in Data Science + M.S. in Statistics Five Year Degree Program

The Committee on Educational Policy (CEP) reviewed and voted to support the proposal for a B.S. in Data Science + M.S. in Statistics Five Year Degree Program at their January 9, 2026 meeting.

UC RIVERSIDE | CNAS Executive Committee

February 3, 2026

TO: Kenneth N. Barish, Chair, Academic Senate, UCR Division

FROM: Harry Tom, Chair, Faculty Executive Committee, College of Natural and Agricultural Sciences

SUBJECT: [Campus Review] Proposal: Combined Data Science B.S. + Statistics M.S. Program

Prof. Barish,

The CNAS Faculty Executive Committee has reviewed the proposal for a combined Data Science B.S. + Statistics M.S. degree program at the January 20th meeting and has no objections to the proposal.

Sincerely,

Harry Tom, Ph.D
Chair, Faculty Executive Committee, College of Natural and Agricultural Sciences

UC RIVERSIDE   *Academic Senate*

COMMITTEE ON COURSES

January 16, 2026

To: Ken Barish, Chair
        Riverside Division

From: Emma Stapely, Chair
        Committee on Courses

Re: Proposed B.S. in Data Science + M.S. in Statistics Combined Degree Program

The Committee on Courses reviewed and were supportive of the proposal for a B.S. in Data Science + M.S. in Statistics Combined Degree Program at their January 15, 2026 meeting.

UC RIVERSIDE

Academic Senate

PLANNING AND BUDGET

February 6, 2026

To: Kenneth Barish, Chair
        Riverside Division

From: David Oglesby, Chair
        Committee on Planning and Budget

Re: **[Campus Review] Proposal:** *Combined Data Science B.S. + Statistics M.S. Program*

The Committee on Planning and Budget (CPB) reviewed the proposal for a combined Data Science B.S. + Statistics M.S. Program. CPB generally supports the proposal, yet notes the following:

- While Statistics and Computer Science are the primary hosts, the program's growth might impact specific courses in other departments. Chairs of departments that may be impacted should be alerted to monitor potential enrollment shifts.

Proposal for a Combined

Data Science BS / Statistics MS
Five Year Degree Program

December 2025

Proposed by the Faculty of the Data Science Program
University of California, Riverside
Riverside, CA 92521

1 Introduction

The Data Science program proposes a new degree offering that allows students to earn a joint BS/MS through an integrated five-year plan of study. The B.S. in Data Science is an intercollegiate major jointly offered by the Department of Computer Science and Engineering (within the Bourns College of Engineering) and the Department of Statistics (within the College of Natural and Agricultural Sciences). Since Data Science integrates both Computer Science and Statistics, students may develop a stronger interest in Statistics and choose to pursue a Master's degree in that field. Therefore, we propose a combined Data Science BS + Statistics MS program. For students who may develop a stronger interest in Computer Science and decide to pursue a Master's degree in Computer Science, we will submit a separate proposal for a combined Data Science BS + Computational Data Science MS program.

The proposed program follows the framework established by the UCR Committee on Educational Policy and the UCR Graduate Council in 2007. It is designed to prepare students for careers requiring specialized knowledge in statistics, and to lay the foundation for pursuing doctoral degrees. This Joint BS/MS program is open to UCR undergraduates only.

Participation in the combined degree programs is initiated through an application for admission prior to the student's senior year. Neither the Graduate Division nor the Statistics Department provides full financial support for students enrolled in the program.

Motivation: As noted in the document, "Establishment of Combined Programs at UCR"[1] "Combined programs can better attract top high school graduates, transfer students, and returning students, especially those interested in advanced degrees. Thus, UCR departments can expect a higher proportion of good undergraduates. Combined program students will be more inclined to stay at UCR for their Masters studies instead of applying to other institutions. Thus, UCR departments can better retain these students." UC has placed an increased emphasis on attracting transfer students from community colleges and the joint BS+MS program provides a unique opportunity for these students.

In sum, the program should attract top students into both the BS and MS programs.

[1] https://senate.ucr.edu/about/policies/establishment_of_combined_programs_at_ucr.html

Combined Data Science BS/Statistics MS degree

Method: To make it possible to complete both degrees in five years, the combined program allows double-counting of up to twelve credits of graduate level coursework (used for both the BS and MS degrees). The justification is that many UCR MS programs require up to 12 units of preparatory coursework that may be necessary from other institutions but may be redundant for undergraduates coming from an appropriate UCR program. In the case of the Statistics MS program, all graduate students are required to complete a twelve-unit graduate core instead of taking preparatory undergraduate courses. Students in the combined program will receive the necessary background through their undergraduate curriculum.

Relation to existing programs. The program consists of the same course requirements as the already-existing Statistics MS Plan II-examination. The students will take the STAT 201ABC series (twelve units in total) in their senior year as part of the electives for the Data Science BS degree. Therefore, as the primary motivation for the program is to attract and attain top students, the program involves no new courses or requirements.

Contributions to diversity. Since the new program will allow well prepared students to obtain a master degree within one year after they obtain a B.S. degree, it can greatly reduce their financial burden and therefore attract more underrepresented students who are usually from low-income family. For example, we plan to recruit more students from community colleges, who transfer to UCR and then complete BS+1 program, and encourage underrepresented students to apply our BS+1 program. In addition, the Statistics Department will provide necessary resources and help, such as funding for conference travels, fellowships awards, and frequent Q&A sessions, to increase retention of underrepresented minority students. The department will also broaden the diversity of faculty by cultivating a diverse pipeline and ensuring that faculty thrive for retention and improved climate, and campus policies and departmental incentives are aligned to make aggressive progress on hiring goals. Our department student clubs such as Highlander Statistics Society, Statistics GSA and Mu Sigma Rho will also help us recruit and retain the underrepresented students by investing in each student's success, sense of belonging, and cultural competency. The above diversity goals for students can be measured by the broader demographics of eligibility pools, applicants, and enrollments, improved graduation rates and time to graduation for disadvantaged groups, and 2nd-year retention rates. The diversity goals for faculty can be measured by broader demographics of availability pools, hiring pools, and new hires, improved retention and turnover rates, improved rates of performance measurement and advancement for underrepresented and disadvantaged groups, and equity in salary and other resources.

Interrelation with other UC institutions. The proposed program would be unique among Data Science programs nationally. Consequently, beyond making the respective BS and MS programs more attractive, the program does not directly compete or inter- relate with other UCR or UC programs or institutions. It may indirectly recruit top students into the UCR (or other UC) statistics PhD programs via the MS program.

Department that will administer the program. The BS portion will be administered jointly by the Department of Computer Science and Engineering (within the Bourns College of Engineering) and the Department of Statistics (within the College of Natural and Agricultural Sciences). The MS portion will be administered by the Department of Statistics.

Timetable for development. The new program will be open for application in August 2026 and start for the Fall 2026 entry term.

Historical development of the field. There is a strong and consistent demand for data scientists across private industry, government, institutional services, and research sectors. According to the Bureau of Labor Statistics,

Combined Data Science BS/Statistics MS degree

employment for data scientists is projected to grow by **36%** by 2033. Many of these roles require applicants to hold a master's degree in statistics, computer science, or a related field. As a result, the job outlook for M.S. graduates in statistics remains exceptionally favorable, driven by the increasing need for expertise in data analytics, machine learning, and statistical modeling across a wide range of industries.

Plan for evaluation of the program. The effectiveness of the program will be evaluated by monitoring the extent to which it increases the quality of students in the Data Science BS and Statistics MS programs. The metrics of evaluation will include GPA, graduation rates, job placement, and acceptance to advanced degree programs.

2. Program

Admission Criteria. The proposed 5-year combined Data Science BS + Statistics MS program will have two timeframes for admission, one of which is for conditional admission: 1) preliminary conditional admission as an incoming lower division student, and 2) admission as a senior meeting admission criteria. We propose to offer outstanding freshman the opportunity to apply for preliminary (conditional) admission into the combined Data Science BS + Statistics MS program based on their undergraduate admission qualifications. This can serve as a recruiting tool as well as increase participation in the program. Official admittance (application via the graduate division) would still require meeting the course and GPA criteria and satisfactory progress in the undergraduate major.

Preliminary Conditional Admission Criteria

- High School GPA >3.6
- Satisfy Entry-Level Writing requirement prior to matriculation
- Eligible to enroll in or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter

Official Admission Minimum Criteria (apply via the Graduate Division for the MS portion)
- Enrolled in the UCR Data Science Program
- Overall GPA 3.0 or higher
- Data Science major GPA 3.3 or higher
- Completion of MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C

Combined Data Science BS + Statistics MS Degree Requirements. The Data Science BS program course requirements remain as currently outlined in the general catalog.

The Statistics MS requires a total of 41 units, and the course and examination requirements are the same as currently outlined in the general catalog for the regular Statistics MS program. More specifically, to earn the Statistics MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 206, STAT 208, STAT 288, and two quarters of STAT 293. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.

During the MS portion of the program, students must maintain a GPA (both overall and in the major) of at least 3.0 for all coursework. If the GPA falls below 3.0, they may be dropped from the program.

Additional requirements are successfully passing a written comprehensive examination.

Sample Combined Data Science BS + Statistics MS Degree Program. The following table outlines a sample program for students in the proposed combined Data Science BS + Statistics MS program. Graduate courses STAT 201ABC taken prior to matriculation to graduate status will double count towards the Data Science BS and the Statistics MS degree requirements.

Sample Joint Data Science BS/Statistics MS Course Plan

	FALL	WINTER	SPRING
1ST YEAR	CS 010A (4) MATH 009A (4) ENGL 001A (4) H/SS Breadth (4) 16 UNITS	CS 010B (4) MATH 009B (4) ENGL 001B (4) H/SS Breadth (4) 16 UNITS	CS 010C (4) MATH 009C (4) ENGL 001C or ENGR 180W (4) Physical Sci Breadth (5) 17 UNITS
2ND YEAR	CS 100 (5) STAT 010 (5) MATH 031 (5) Bio Sci Breadth (4) 19 UNITS	CS/MATH 011 (4) STAT 011 (5) MATH 010A (4) Additional Nat Sci Breadth (5) 18 UNITS	CS 105 (4) CS 111 (4) MATH 010B (4) Additional Nat Sci Breadth (5) 17 UNITS
3RD YEAR	CS 141 (4) STAT 107 (4) STAT 156A or STAT 160A (4) H/SS Breadth (4) 16 UNITS	CS 166 or CS 167 (4) CS 108/STAT 108 (4) STAT 160B (4) H/SS Breadth (4) 16 UNITS	STAT 167 or CS 171/EE 142 (4) STAT 160C (4) STAT 169 (4) H/SS Breadth (4) 16 UNITS
4TH YEAR	STAT 170 (4) Application Course Sequence (4) STAT 201A (4) 12 UNITS	Application Course Sequence (4) H/SS Breadth (4) STAT 201B (4) 12 UNITS	STAT 183 or CS 179 (E-Z) (4) STAT 201C (4) 8 UNITS
5TH YEAR (MS)	STAT 202A (4) STAT 207 (4) STAT 293 (4) 12 UNITS	STAT 202B (4) STAT 293 (4) Elective (4) STAT 288 (1) 13 UNITS	STAT 202C (4) STAT 208 (4) STAT 291 (4) 12 UNITS

Normative time from matriculation to degree. Five years.
Catalog entry

Combined Data Science B.S.+ Statistics M.S. Program

We offer a combined five-year B.S. + M.S. program, designed to allow successful UCR Data Science B.S. graduates to complete the Master of Science degree in Statistics in one year, by allowing up to 12 credits of coursework taken as a UCR undergraduate to be counted towards the requirements of the M.S. (The courses that can be double counted are those that are used as technical electives in the B.S. requirements.) More information regarding this combined program can be found in the catalog section of Joint B.S.+1 Statistics M.S. Program.

Joint B.S.+1 Statistics M.S. Program

The College of Natural and Agricultural Science offers a combined B.S.+1 Statistics M.S. program, designed to allow successful B.S. graduates in Data Science or Statistics who have taken some graduate level statistics courses in their senior standing year in UCR to complete the Master of Science degree in Statistics in one year, by allowing up to 12 units of graduate level coursework taken in UCR as an undergraduate to be counted towards the MS degree requirements.

A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year. To apply, the student must have a cumulative GPA at least 3.0 overall, 3.3 GPA in the Data Science or Statistics major, and have completed MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C with GPA at least 3.3 in STAT 160A or STAT 156A, STAT 160B, STAT 160C. These are minimum requirements and do not guarantee the admission. The application to the B.S.+1 M.S. program must include a transcript, and at least two recommendation letters. Submission of GRE scores with the application is recommended but not required. During students' senior year, students must apply via the Graduate Division for the M.S. portion. Matriculation into the graduate portion of the B.S.+1 M.S. program occurs in the Fall term following their final year, provided: (a) the M.S. application is accepted, (b) throughout the final undergraduate year at UCR the student has a cumulative GPA 3.0 or higher, (c) by the end of senior standing year, the student completes the B.S. degree requirements.

Incoming freshman students who apply to the Data Science or Statistics B.S. program may simultaneously apply for preliminary conditional admission into the B.S.+1 Statistics M.S. program provided their high-school GPA is at least 3.6, they satisfy the Entry-Level Writing requirement prior to matriculation, and they are eligible to enroll in or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter.

Preliminary conditional admission status is maintained as long as the student is a Data Science or Statistics B.S. student in good standing with a cumulative GPA of at least 3.0. Conditionally admitted students still need to apply for full admission by the start of their senior standing year

as described above and apply via the Graduate Division for the MS portion. Continuing undergraduate students who meet the above criteria may apply to the program by submitting a petition and should confer with their staff advisor for details.

To earn the MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 207, STAT 208, STAT 288, and two quarters of STAT 293, and pass the written exam. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. The courses that can be double counted must be graduate level courses and be eligible to be counted as electives in the B.S. requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.

Comprehensive Examination

All M.S. students are required to take a written comprehensive examination and pass at the M.S. level, with no more than two attempts allowed to pass. A program proposal is not required.

Advancement to Candidacy

Advancement for the master's candidacy occurs at the beginning of the quarter the student plans to graduate.

Professional Development

Students in the B.S.+1 Statistics M.S. Program must register two quarters of STAT 293, which give students training in (a) the ability to use fundamental statistical techniques to formulate problem and solution in diverse real-world application; (b) the ability to use at least one statistical software package to conduct statistical data analysis; (c) the ability to communicate with researchers in statistical community and other disciplines by using graphical methods to display and interpret information.

Normative time

The normative time to B.S. is four years, and the normative time of the MS portion is one year (five years total).

3. Projected Need, resource requirements, student support

This combined program is primarily a recruitment tool, intended to leverage the increasing interest in graduate education to attract top freshmen into the Data Science BS program, and to attract top UC Riverside Data Science BS students into the Statistics MS program.

In the Data Science BS program, the prospect of entering the program at year three and completing both the Data Science BS and Statistics MS in a total of five years should attract students that are highly motivated and more likely than average to make it through the program.

The combined BS/MS program will increase the visibility of the Data Science undergraduate major to entering students. We expect that the opportunity of earning a combined BS/MS in three years will be highly attractive to community college transfer students as well. Enrollment of community college students has recently become an urgent priority for the University of California. Combined with ongoing increases in admissions standards, this should increase both retention and the overall quality of the students.

In the MS program, we anticipate growth in combined-program enrollment initially of only a few students per year. There would be no expectation of support for the participants in the combined BS/MS program. In addition, if at some point in the future, funding opportunities emerge from campus, college, department, or Graduate Division sources for MS students, then fifth-year BS/MS students would be eligible. Each student accepted into the combined program is likely to be near the top of the applicant pool. If a student decides to continue on for a Ph.D., then full support packages would be provided.

In short, the main effect of the program should be to increase the quality and diversity of students in the Data Science BS and Statistics MS programs, and achieve a modest increase in enrollment levels. Similarly, it should increase the employability of students produced by the BS and MS programs, and help meet the increasing demand for Statistics students with graduate degrees.

Resources
Note that each student in the combined program is essentially just a regular student (in the BS program, or, in fifth year, in the MS program), and requires the same resources as a regular student at the same level. Also, because of the highly selective nature of the admissions requirements, BS and MS enrollments will be modestly affected, at least initially. Therefore, the program requires no change in faculty, courses, or resources such as library, computing, equipment, space, etc. Likewise, the program requires no change in levels or mechanisms for student funding.

The program does require minor administrative support. During the Data Science BS portion of this program, students will be advised by either the CNAS Undergraduate Academic Advising Center or the BCOE Undergraduate Academic Advising Center as normal for pursuance of a BS in Data Science. The administration of the program at the undergraduate level requires processing applications for preliminary acceptance, tracking preliminarily enrolled students, and identifying and informing students who will be eligible to apply at the end of their junior year. The administrative functions for admission to the Statistics Graduate program are already performed by the department Graduate Admission Committee; this committee will also be responsible for administering this BS/MS program with continued support from the CNAS Graduate Student Affairs Center, which will have to track which MS students are in the combined program and account for the double-counting allowance.

Finally, only to the extent that existing resources allow, BS students with "preliminary conditional admission" status will be given additional advising appropriate for MS-bound students.

4. Changes in Senate Regulations

No changes in Senate regulations are required.

5. Implementation timeframe

The new program will be open for application in August 2026 and start for the Fall 2026 entry term.

Proposed Catalog Changes to the Undergraduate Major in Data Science

PRESENT:	PROPOSED:
Subject abbreviation: DTSE **The Marlan and Rosemary Bourns** **College of Engineering** **Subject abbreviation: DTSC** **The College of Natural** **and Agricultural Sciences**	[no change]
Major Data science studies the collection, management, and analysis of data to extract knowledge. It is a multidisciplinary program with core components from Computer Science and Statistics, and required application study in a variety of empirical disciplines. Courses span the discipline from theory to practice and prepare students for careers or graduate studies in data-intensive fields. The B.S. in Data Science major is an intercollege major offered by the Marlan and Rosemary Bourns College of Engineering and the College of Natural and Agricultural Sciences. A B.S. degree in Data Science is offered by each college. When students declare the major, they choose from which college they wish to have their degree awarded. Students whose degrees are awarded by the Marlan and Rosemary Bourns College of Engineering are advised in and have their records maintained by the BCOE Office of Student Academic Affairs; students whose degrees are awarded by the College of Natural and Agricultural Sciences are advised in and have their records maintained by the CNAS Undergraduate Academic Advising Center. Breadth requirements vary by college; and students must fulfill the breadth requirements of the college they choose. All undergraduates in the Marlan and Rosemary Bourns College of Engineering must see an advisor at least annually. Visit student.engr.ucr.edu for details.	**Major** [no change]

University Requirements See Undergraduate Students section.	**University Requirements** [no change]
College Requirements College breadth requirements vary depending on which college is chosen to award the degree. For details on breath requirements, see the Colleges and Programs section of this catalog. Students are encouraged to consult their advisor regarding requirements.	**College Requirements** [no change]

Transfer Admissions Requirements of Data Science Major
 	
Minimum 2.80 cumulative GPA
Minimum 2.70 GPA in the calculus series
Minimum 2.5 in one of the following series:
  1. Three courses either from the set CS 010A, 010B, 010C, CS/MATH 011, or from the set CS 009A, 009B, 010C, CS/MATH 011
 	
  2. MATH 010A, MATH 031, STAT 008
 	
Minimum Preparation for Data Science:
  1. (CS 010A and CS 010B) or (CS 009A and CS 009B)
  2. MATH 009A or MATH 09HA, MATH 009B or MATH 09HB, MATH 009C or MATH 09HC
Must complete three of the following:
  1. CS010C
  2. CS/MATH 011
  3. MATH 031
  4. MATH 010A
  5. STAT 008 or STAT 010
	Transfer Admissions Requirements of Data Science Major
	[no change]

Change of Major Criteria for the BCOE track All students who request a change of major to Data Science in BCOE must meet the following requirements: • Be in good academic standing	**Change of Major Criteria for the BCOE track** [no change]

- Have no less than a C- in any Statistics, Math, Science and Engineering Coursework

- Be able to complete the major within maximum allowable units

- Complete all the courses listed below, based on the total number of units earned, prior to submitting the major change request

- UCR transfer students interested in changing to a BCOE major must have been admissible to the major at point of entry, or must satisfy transfer admission and change of major requirements before earning 120 units

- If changing in the 90-119 units category, student must have the ability to complete major within 5 years of entry as a Freshmen or 3 years after entry as a Transfer student.

- Students who have earned 120 or more units are not eligible for a change of major in BCOE. NOTE: AP/IB units are excluded from maximum unit calculation.

Completed 0 to less than 45 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

Completed 45 to less than 90 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH 09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

An introductory statistics course (STAT 010 or equivalent) is recommended.

Completed 90 to less than 120 units
Completion of ENGL 001A and ENGL 001B with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B and CS 009C)

- CS 010C

- MATH 011/CS 011

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

- One of MATH 031 or MATH 010A

An introductory statistics course (STAT 010 or equivalent) is recommended.

Change of Major Criteria for the CNAS track	**Change of Major Criteria for the CNAS track**
All students who request a change of major to Data Science in CNAS must meet the following requirements: - Be in good academic standing	[no change]

- Have no less than a C- in any Statistics, Math, Science and Engineering coursework

- Be able to complete the major within maximum allowable units

- Complete all the courses listed below, based on the total number of units earned, prior to submitting the major change request

- UCR transfer students interested in changing to a CNAS major must have been admissible to the major at point of entry, or must satisfy transfer admission and change of major requirements before earning 135 units

- Changing to the Data Science Major at senior level (greater than or equal to 135 units) is not allowed

Completed 0 to less than 45 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

Completed 45 to less than 90 units
Completion of ENGL 001A with C or better, and completion of the following with at least 2.70 GPA:
- (CS 010A and CS 010B) or (CS 009A and CS 009B)

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH 09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

An introductory statistics course (STAT 010 or equivalent) is recommended.

Completed 90 to less than 135 units
Completion of ENGL 001A and ENGL 001B with C or better, and completion of the following with at least 2.70 GPA:

- (CS 010A and CS 010B) or (CS 009A and CS 009B and CS 009C)

- CS 010C

- MATH 011/CS 011

- MATH 007A or MATH 009A or MATH 09HA (MATH 009A is strongly recommended)

- MATH 007B or MATH 009B or MATH 09HB (MATH 009B is strongly recommended)

- MATH 009C or MATH 09HC

- One of MATH 031 or MATH 010A

An introductory statistics course (STAT 010 or equivalent) is recommended.

Major Requirements
1. Lower-division requirements (47-52 units):

   a) (CS 010A, CS 010B, CS 010C) or

      (CS 009A, CS 009B, CS 009C*, CS

      010C)

   b) One math sequence from the
      following:

i. MATH 007A or MATH 009A or MATH 009HA, MATH 007B or MATH 009B or MATH 09HB, MATH 009C or MATH 09HC ii. MATH 005A, MATH 005B, MATH 005C c) MATH 010A, MATH 031 d) MATH 011/CS 011 e) STAT 010, STAT 011	**Major Requirements** 1. [no change]
~~2. Upper-division requirements (60 units):~~ ~~a) CS 105, CS 141~~ ~~b) STAT 107, STAT 156A, STAT 156B, STAT 169, STAT 170~~ ~~c) CS/STAT 108~~ ~~d) CS 166 or CS 167~~ ~~e) STAT 167 or CS 171/EE 142~~ ~~f) STAT 183 or CS 179 (E-Z)~~ ~~g) Four courses (at least 16 units) from the following list, none of which can also be used to satisfy other major requirements: CS 131, CS 144, CS 166, CS 167, CS 170, CS 172, CS 173, CS 180, CS 181, MATH 120, MATH 135A, BUS/STAT 104, BUS/STAT 127, STAT 130, STAT 140, STAT 146, STAT 157, STAT 171.~~	2. Upper-division requirements (60 units): a) CS 105, CS 141 b) STAT 107, <u>STAT 156A or STAT 160A, STAT 156B or STAT 160B</u>, STAT 169, STAT 170 c) CS/STAT 108 d) CS 166 or CS 167 e) STAT 167 or CS 171/EE 142 f) STAT 183 or CS 179 (E-Z) g) Four courses (at least 16 units) from the following list, none of which can also be used to satisfy other major requirements: CS 131, CS 144, CS 166, CS 167, CS 170, CS 172, CS 173, CS 180, CS 181, MATH 120, MATH 135A, BUS/STAT 104, BUS/STAT 127, STAT 130, STAT 140, STAT 146, STAT 157, <u>STAT 160C,</u> STAT 171.
3. Major Breadth requirement (8 units): One two-course sequence, chosen from the course sequences listed below: i. BIOL 005B, BIOL 005C	3. [no change]

ii.   BIOL 005B, BIOL 102

iii. BUS 103 and BUS 115

iv.   BUS 103 and BUS 119

v.   BUS 105 and BUS 129

vi.   ECON 108 and ECON 136

vii. EE/ME 144 and one of: EE106 or EE 146 or EE148

viii. GEO 111 and GEO 161

ix.   GEO 115 and GEO 147

Note
CS 100 and CS 111 are strongly recommended.

Combined Data Science B.S.+ Statistics M.S. Program
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Proposed Catalog Changes to the Joint B.S. +1 Statistics M.S. Program

PRESENT:	PROPOSED:
Joint B.S.+1 Statistics M.S. Program	**Joint B.S.+1 Statistics M.S. Program**
~~The College of Natural and Agricultural Science offers a combined B.S.+1 Statistics M.S. program, designed to allow successful B.S. graduates who have taken some graduate level statistics courses in their senior standing year in UCR to complete the Master of Science degree in Statistics in one year, by allowing up to 12 units of graduate level coursework taken in UCR as an undergraduate to be counted towards the MS degree requirements.~~	The College of Natural and Agricultural Science offers a combined B.S.+1 Statistics M.S. program, designed to allow successful B.S. graduates <u>in Data Science or Statistics</u> who have taken some graduate level statistics courses in their senior standing year in UCR to complete the Master of Science degree in Statistics in one year, by allowing up to 12 units of graduate level coursework taken in UCR as an undergraduate to be counted towards the MS degree requirements.
~~A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year. To apply, the student must have a cumulative GPA at least 3.0 overall, 3.3 GPA in the statistics major, and have completed STAT 160ABC with GPA at least 3.3 in STAT 160ABC sequence.. These are minimum requirements and do not guarantee the admission. The application to the B.S.+1 M.S. program must include a transcript, and at least two recommendation letters. Submission of GRE scores with the application is recommended but not required. During students' senior year, students must apply via the Graduate Division for the M.S. portion. Matriculation into the graduate portion of the B.S.+1 M.S. program occurs in the Fall term following their final year, provided: (a) the M.S. application is accepted, (b) throughout the final undergraduate year at UCR the student has a cumulative GPA 3.0 or higher, (c) by the end of senior standing year, the student completes the B.S. degree requirements.~~	A student should apply for the B.S.+1 Statistics M.S. program (including transfer students) before the start of their senior standing year. To apply, the student must have a cumulative GPA at least 3.0 overall, 3.3 GPA in the Data Science or Statistics major, and have completed <u>MATH 010B, STAT 160A or STAT 156A, STAT 160B, STAT 160C with GPA at least 3.3 in STAT 160A or STAT 156A, STAT 160B, STAT 160C.</u> These are minimum requirements and do not guarantee the admission. The application to the B.S.+1 M.S. program must include a transcript, and at least two recommendation letters. Submission of GRE scores with the application is recommended but not required. During students' senior year, students must apply via the Graduate Division for the M.S. portion. Matriculation into the graduate portion of the B.S.+1 M.S. program occurs in the Fall term following their final year, provided: (a) the M.S. application is accepted, (b) throughout the final undergraduate year at UCR the student has a cumulative GPA 3.0 or higher, (c) by the end of senior standing year, the student completes the B.S. degree requirements.
~~Incoming freshman students who apply to the Statistics B.S. program may simultaneously apply for preliminary conditional admission into the B.S.+1 Statistics M.S. program provided their high-school GPA is at least 3.6, they satisfy the Entry-Level Writing requirement prior to matriculation, and they are eligible to enroll in or~~	Incoming freshman students who apply <u>to the Data Science or Statistics</u> B.S. program may simultaneously apply for preliminary conditional admission into the B.S.+1 Statistics M.S. program provided their high-school GPA is at least 3.6, they satisfy the Entry-Level Writing requirement prior to matriculation, and they are eligible to enroll in

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to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter.

Preliminary conditional admission status is maintained as long as the student is a Statistics B.S. student in good standing with a cumulative GPA of at least 3.0. Conditionally admitted students still need to apply for full admission by the start of their senior standing year as described above and apply via the Graduate Division for the MS portion. Continuing undergraduate students who meet the above criteria may apply to the program by submitting a petition and should confer with their staff advisor for details.

To earn the MS degree, students are required to complete a minimum of 41 units that must include STAT 201A, 201B, 201C, STAT 202A, 202B, 202C, STAT 207, STAT 208, STAT 288, and two quarters of STAT 293, and pass the written exam. No more than 12 units earned prior to matriculation to graduate status can be applied towards the MS degree requirements. The courses that can be double counted must be graduate level courses and be eligible to be counted as electives in the B.S. requirements. Students receive credit toward the 41 units by completing STAT 201ABC (recommended) or some other graduate level courses, approved by the graduate advisor, as an undergraduate senior.

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or to receive credit for MATH 7A or MATH 9A upon arrival or in their first quarter.

Preliminary conditional admission status is maintained as long as the student is a <u>Data Science or Statistics</u> B.S. student in good standing with a cumulative GPA of at least 3.0. Conditionally admitted students still need to apply for full admission by the start of their senior standing year as described above and apply via the Graduate Division for the MS portion. Continuing undergraduate students who meet the above criteria may apply to the program by submitting a petition and should confer with their staff advisor for details.

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Comprehensive Examination
All M.S. students are required to take a written comprehensive examination and pass at the M.S. level, with no more than two attempts allowed to pass. A program proposal is not required.

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Comprehensive Examination
[no change]

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Advancement to Candidacy
Advancement for the master's candidacy occurs at the beginning of the quarter the student plans to graduate.

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Advancement to Candidacy
[no change]

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Professional Development
Students in the Statistics B.S.+1 M.S. Program must register two quarters of STAT 293, which give students training in (a) the ability to use fundamental statistical techniques to formulate problem and solution in diverse real-world application; (b) the ability to use at least one statistical software package to conduct statistical

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Professional Development
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data analysis; (c) the ability to communicate with researchers in statistical community and other disciplines by using graphical methods to display and interpret information. **Normative time** The normative time to B.S. is four years, and the normative time of the MS portion is one year (five years total).	**Normative time** [no change]

Justification:

The Data Science program proposes a new degree offering that allows students to earn a joint BS/MS through an integrated five-year plan of study. The B.S. in Data Science is an intercollegiate major jointly offered by the Department of Computer Science and Engineering (within the Bourns College of Engineering) and the Department of Statistics (within the College of Natural and Agricultural Sciences). Since Data Science integrates both Computer Science and Statistics, students may develop a stronger interest in Statistics and choose to pursue a Master's degree in that field. Therefore, we propose a combined Data Science BS + Statistics MS program. For students who may develop a stronger interest in Computer Science and decide to pursue a Master's degree in Computer Science, we will submit a separate proposal for a combined Data Science BS + Computational Data Science MS program.

In the proposed joint BS/MS program, students would take the MS-level core courses STAT 201ABC during their fourth year, allowing them to complete an MS in Statistics within one year after earning their BS in Data Science. To better prepare for STAT 201ABC, students in this program would take STAT 156A or STAT 160A, along with STAT 160B and STAT 160C. Therefore, we have added STAT 160A and STAT 160B as alternatives to STAT 156A and STAT 156B and included STAT 160C as an elective in the major requirements.