

## Information about Precalculus and Calculus for Science and Engineering Majors

### Calculus Placement Exam (CPE) Math 30, Math 30P, Math 60, Math 71

Nearly all students who wish to enroll in Math 30 Calculus I, Math 30P Calculus I with Precalculus, Math 60 Calculus for Biological Sciences, or Math 71 Calculus for Business and Aviation are required to take the Calculus Placement Examination (CPE). The CPE covers material from four years of college prep math, and it has two parts, part 1 is an exam which covers College Algebra (32 questions), and part 2 is a Calculus Readiness Exam (25 questions) which covers College Algebra, Trigonometry, and Properties of Elementary Functions. Students who want to take Math 30, 30P, or Math 60 are required to take both parts of the CPE, and if they do not pass the exam they will be required to start in Math 19 Precalculus. Students who want to take Math 71 are only required to take the algebra portion of the CPE exam, and if they do not pass the exam they will be required to start in Math 8 College Algebra. Some review problems are posted on this webpage link: <http://sjsumpe.placementtester.com/classes/MPE/Review>. Students should contact the Math Department office MH 308, (408) 924-510 in advance to register for the CPE. Sometimes we cannot accept reservations on the day of the exam if there is not enough room. Call the math office (408) 924-5100 or send an email to [math-info@sjsu.edu](mailto:math-info@sjsu.edu) to make a reservation if you can't come in to the math office. There is a \$20 fee charged to students who need to take the CPE to cover the cost of administering the exam. During June-August 2011 the Calculus Placement Exam will be offered at the following times: Friday, June 03 9:00–11:00 am, Tuesday, June 14 8:00–10:00 am, Tuesday, June 21 8:00–10:00 am, Tuesday, June 28 8:00–10:00 am, July 05 8:00–10:00 am, Tuesday, July 12 8:00-10:00 am, Tuesday, July 19 8:00-10:00 am, Tuesday, July 26 8:00-10:00 am, Tuesday, August 2 8:00-10:00 am, and Thursday, August 11 2:00 - 4:00 pm. For more information please see our website: [www.sjsu.edu/math/calculus](http://www.sjsu.edu/math/calculus)

**Math Department Workshops** The Math Department at San Jose State now offers a series of workshops designed to help students succeed and excel in their lower division math courses. Students in Math 19, Math 30, Math 30P, and Math 31 are required to sign up for the corresponding workshop when they sign up for their Math 19/30/30P/31 lecture course. The lecture course and the workshop must both be in your shopping cart at the same time when you are checking out. Voluntary workshops are offered for Math 8, Math 32, Math 42, and Math 71. In the workshops students work together in small groups on challenging problems to help them understand Precalculus and Calculus concepts more deeply and lay the groundwork for success in Calculus and in other future math courses. Students are strongly encouraged to participate in the workshops, and students in Precalculus and Calculus workshops are encouraged to form student study groups and continue working on their precalculus homework together outside of class. Students who participate in Math Department workshops end up with an average grade of about 0.5 to 1.0 grade points higher than those who do not participate in workshops.

**Math 19 Precalculus 5 units Description:** Preparation for calculus, polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic geometry. **Prerequisite:** Students who want to take Math 19 should make sure that they satisfy the ELM requirement (Math 19 students are no longer required to take a placement exam). The usual ways to satisfy the ELM requirement are 1) pass the ELM exam, 2) get an exemption from the ELM exam by getting a score of 550 or higher on the SAT Math Exam or a score of 23 or higher on the ACT Math Exam, or 3) pass the appropriate Developmental Math courses (contact Susan McClory MH 311 [susan.mcclory@math.sjsu.edu](mailto:susan.mcclory@math.sjsu.edu) for more information about developmental math at SJSU).

Math	019	01	5	0730	0850	MWF	MH	423	Van der Poel
Math	019	02	5	0900	1020	MWF	DH	351	Pfiefer
Math	019	03	5	1030	1150	MWF	DH	351	Pfiefer
Math	019	04	5	1200	1320	MWF	MH	423	Hsu
Math	019	06	5	1500	1605	MTWR	CL	234	PT
Math	019	07	5	1800	1920	MWR	DH	243	PT
Math	019	08	5	0730	0835	MTWR	DH	243	PT
Math	019	09	5	0900	1005	MTWR	DH	243	PT
Math	019	10	5	1030	1135	MTWR	DH	243	PT
Math	019	11	5	1200	1305	MTWR	DH	243	PT
Math	019	12	5	1330	1435	MTWR	DH	243	PT
Math	019	13	5	1500	1605	MTWR	DH	243	PT
Math	019	14	5	1630	1735	MTWR	DH	243	PT

Math 19 students are required to register for a Math 19W Precalculus workshop at the same time as they register for their Math 19 lecture course (both have to be in your shopping cart at the same time when you check out). Students can opt out

of the Precalculus workshop at a later time if they contact the Math Department office and fill out the appropriate form. If you have trouble registering for Math 19 and Math 19W contact the math office MH 308 (408) 924-5100. All Math 19 students are strongly encouraged to take the Precalculus workshop Math 19W. In Math 19W students work in groups on challenging problems to help them understand Precalculus concepts more deeply and lay the groundwork for success in Precalculus and in other future math courses.

Math	019W	01	1.5	0730	0845	MW	MH	233	FA
Math	019W	02	1.5	0900	1015	MW	MH	233	FA
Math	019W	03	1.5	1030	1145	MW	MH	233	FA
Math	019W	04	1.5	1200	1315	MW	MH	233	FA
Math	019W	05	1.5	1330	1445	MW	MH	233	FA
Math	019W	06	1.5	1500	1615	MW	MH	233	FA
Math	019W	07	1.5	1630	1745	MW	MH	233	FA
Math	019W	08	1.5	1800	1915	MW	MH	233	FA
Math	019W	09	1.5	0730	0845	TR	MH	233	FA
Math	019W	10	1.5	0900	1015	TR	MH	233	FA
Math	019W	11	1.5	1030	1145	TR	MH	233	FA
Math	019W	12	1.5	1200	1315	TR	MH	233	FA
Math	019W	13	1.5	1330	1445	TR	MH	233	FA
Math	019W	14	1.5	1500	1615	TR	MH	233	FA
Math	019W	15	1	1630	1745	TR	MH	233	FA

There are two versions of Calculus I at San Jose State, Math 30P Calculus I with Precalculus is a 5-unit version of Calculus I which allows for some extra review of Precalculus while you are learning the material in Calculus I. Math 30 Calculus I is a 3-unit course which covers the same material in Calculus I without the extra reviews of Precalculus and is mainly intended for well-prepared and highly motivated students. There are also two other beginning Calculus courses designed for certain majors, Math 60 5 units Calculus for Biological Sciences, and Math 71 Calculus for Business and Aviation.

**Math 30P Calculus I with Precalculus Description:** Selected topics in precalculus. Introduction to calculus including limits, continuity, differentiation, applications, and introduction to integration. Graphical, algebraic and numerical methods of solving problems. **Prerequisite:** To be eligible for Math 30P Calculus I with Precalculus (5 units) you must 1) pass the Algebra portion (20/32 or higher) and the Calculus Readiness portion (15/25 or higher) of the Calculus Placement Exam, or 2) receive a grade of C or higher in Math 19 or an equivalent community college Precalculus course or 3) receive a score of 3 or higher on the AB Calculus AP Test. If you passed Math 19 (C or higher) or took the CPE at San Jose State you should be able to register immediately for Math 30P and Math 30W as soon as your scores are posted in Peoplesoft. If you passed Precalculus at another College or passed an AP Calculus test you should fill out a Calculus Request form and turn it in to the Math office (MH 308). If you have any difficulties in registering for Math 30P and Math 30W you should contact the Math Department office MH 308, (408) 924-5100.

Math	030P	01	5	0730	0850	MWF	MH	224	Bodas
Math	030P	02	5	0900	1005	MTWR	MH	224	Shubin
Math	030P	03	5	1030	1135	MTWR	MH	224	Talebi
Math	030P	04	5	1330	1435	MTWR	MH	224	Peterson
Math	030P	05	5	1500	1605	MTWR	MH	224	Nguyen V
Math	030P	06	5	1630	1735	MTWR	MH	224	Low

**Math 60 Calculus for Biological Sciences 5 units Description:** Selected topics in precalculus and an introduction to calculus for students of the biological sciences. Functions and graphs, differentiation, optimization, exponential and logarithmic functions, and integration. Emphasis on applications in the life sciences. **Prerequisite:** Same as the prerequisite for Math 30P. There is no workshop for Math 60.

Math	60	1	5	1200	1320	MWF	MH	224	Bremer
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**Math 30 Calculus I 3 units Description:** Introduction to calculus including limits, continuity, differentiation, applications, and introduction to integration. Graphical, algebraic and numerical methods of solving problems. **Prerequisite:** To be eligible for Math 30 Calculus I you must 1) pass the Algebra portion (25/32 or higher) and the Calculus Readiness portion (20/25 or higher) of the Calculus Placement Exam, or 2) receive a grade of B or higher in

Math 19 or an equivalent community college Precalculus course or 3) receive a score of 3 or higher on the AB Calculus AP Test. If you passed Math 19 (B or higher) or took the CPE at San Jose State you should be able to register immediately for Math 30 and Math 30W as soon as your scores are posted in Peoplesoft. If you passed Precalculus at another College or passed an AP Calculus test you should fill out a Calculus Request form and turn it in to the Math office. If you have any difficulties in registering for Math 30 and Math 30W you should contact the Math Department office MH 308, (408) 924-5100.

Math	030	01	3	1030	1145	MW	CL	234	Beeson
Math	030	02	3	1200	1315	MW	CL	234	Beeson
Math	030	03	3	1030	1145	TR	DH	318	Goldston
Math	030	04	3	1200	1315	TR	MH	423	Nguyen V
Math	030	05	3	1330	1445	TR	DH	250	Obaid

Math 30P and Math 30 students are required to register for a Math 30W Calculus I workshop at the same time as they register for their Math 30P/30 lecture course (both have to be in your shopping cart at the same time when you check out). Students can opt out of the Calculus I workshop at a later time if they contact the Math Department office and fill out the appropriate form. If you have trouble registering for Math 30 and Math 30W contact the math office MH 308, (408) 924-5100. All Calculus I students are strongly encouraged to take the Calculus I workshop Math 30W. In Math 30W students work in groups on challenging problems to help them understand calculus concepts more deeply and lay the groundwork for success in Calculus I and in future math courses.

Math	030W	01	1.5	0730	0845	TR	WSQ	1	FA
Math	030W	02	1.5	0900	1015	TR	WSQ	1	FA
Math	030W	03	1.5	1030	1145	TR	WSQ	1	FA
Math	030W	04	1.5	1200	1315	TR	WSQ	1	FA
Math	030W	05	1.5	1500	1615	TR	WSQ	1	FA
Math	030W	06	1.5	1630	1745	TR	WSQ	1	FA
Math	030W	07	1.5	1800	1915	TR	WSQ	1	FA
Math	030W	08	1.5	0730	0845	MW	WSQ	1	FA
Math	030W	09	1.5	0900	1015	MW	WSQ	1	FA
Math	030W	10	1.5	1030	1145	MW	WSQ	1	FA
Math	030W	11	1.5	1330	1445	MW	WSQ	1	FA
Math	030W	12	1.5	1500	1615	MW	WSQ	1	FA
Math	030W	13	1.5	1630	1745	MW	WSQ	1	FA

**Math 31 Calculus II 4 units Description:** Definite and indefinite integration with applications. Sequences and series. Graphical, algebraic and numerical methods of solving problems. **Prerequisite:** To be eligible for Calculus II Math 31 (4 units) you must 1) receive a grade of C- or higher in Math 30P or Math 30 or 2) pass the AP Calculus AB Exam with a score of 3 or higher. With a score of 3 you are eligible for Math 30P, Math 30 or Math 31, though we recommend that you start with Math 30. With a score of 4 or higher Math 31 is recommended.

Math	031	01	4	0730	0820	MTWR	MH	424	Smith
Math	031	02	4	0830	0920	MTWR	MH	424	Smith
Math	031	03	4	0930	1020	MTWR	MH	424	Peterson
Math	031	04	4	1030	1120	MTWR	MH	424	Shubin
Math	031	05	4	1130	1220	MTWR	MH	424	Strong
Math	031	06	4	1230	1320	MTWR	MH	424	Strong
Math	031	07	4	1330	1420	MTWR	MH	424	Kellum
Math	031	08	4	1430	1520	MTWR	MH	424	Kellum
Math	031	10	4	1630	1740	MWR	MH	424	Sega
Math	031	11	4	1800	1910	MWR	MH	424	Bugarin

Students who register for Math 31 Calculus II are also required to register for a Math 31W Calculus II workshop at the same time. If you wish to drop Math 31W, you must go to Math office and fill out the appropriate form. In the past students who have participated regularly in precalculus and calculus workshops have received an average grade of .5 to 1.0 grade points higher than those who have not participated in workshops so all Math 31 students are strongly encouraged to take Math 31W. In the workshops, students work in small groups solving problems, to help build their skill and confidence in problem solving.

Math	031W	01	1.5	0730	0845	MW	WSQ	1	FA
Math	031W	02	1.5	0900	1015	MW	WSQ	1	FA
Math	031W	03	1.5	1030	1145	MW	WSQ	1	FA
Math	031W	04	1.5	1330	1445	MW	WSQ	1	FA
Math	031W	05	1.5	1500	1615	MW	WSQ	1	FA
Math	031W	06	1.5	1630	1745	MW	WSQ	1	FA
Math	031W	07	1.5	1800	1915	MW	WSQ	1	FA
Math	031W	08	1.5	0730	0845	TR	WSQ	1	FA
Math	031W	09	1.5	0900	1015	TR	WSQ	1	FA
Math	031W	10	1.5	1030	1145	TR	WSQ	1	FA
Math	031W	11	1.5	1500	1645	TR	WSQ	1	FA

**Math 32 Calculus III 3 units Description:** Functions of more than one variable, partial derivatives, multiple integrals and vector calculus. Graphical, algebraic and numerical methods of solving problems. **Prerequisite:** To be eligible for Calculus III Math 32 (3 units) you must 1) receive a grade of C- or higher in Math 31 or 2) pass the AP Calculus BC Exam with a score of 3 or higher.

Math	032	01	3	1200	1315	MW	MH	323	Alperin
Math	032	02	3	1330	1445	MW	MH	323	Alperin
Math	032	03	3	1600	1715	MW	MH	423	Foster
Math	032	04	3	1730	1845	MW	MH	423	Foster
Math	032	05	3	0730	0845	TR	MH	423	Katsuura
Math	032	06	3	0900	1015	TR	MH	323	Katsuura
Math	032	07	3	1030	1145	TR	MH	323	Zabric
Math	032	08	3	1330	1445	TR	MH	320	Cayco

Students who register for Math 32 Calculus III are strongly encouraged (but not required) to register for Math 32W Calculus III workshop at the same time. In the past students who have participated regularly in Precalculus and Calculus workshops have received any average grade of .50 to 1.0 grade points higher than those students who have not participated in workshops. In the Calculus III workshops, students work in small groups solving Calculus problems, to help build their skill and confidence in problem solving.

Math	032W	01	1.5	0900	1015	MW	MH	234	FA
Math	032W	02	1.5	1330	1445	TR	WSQ	1	FA
Math	032W	03	1.5	1630	1745	TR	WSQ	1	FA