

MATH 141: PRECALCULUS

FALL SEMESTER, 2020 (8/17/20-12/14/20); SYLLABUS DATE: 8/18/2020

CLASS # 42131

5.0 Units; Tues. and Thurs., 7:05-9:30pm (Mesa Remote)

INSTRUCTOR: Ken Kuniyuki

Email Address: kkuniyuk@yahoo.com; there is no “i” before the “@.”

Official Address: kkuniyuk@sccd.edu (esp. for official business like applications).

- I usually check my email at least once a day, although busy periods may delay responses.
- When asking about homework (HW), tell me what you are thinking about the problem, so I know where to start addressing your question. Please go beyond: “How do you do this problem?” Then, I may just give a hint! **Photos help!**

Office Hours: MW 6:30-7:45pm, TTh 5:30-6:45pm in my Zoom Room.

- **Email me** and we can try to set up a Zoom Room meeting during office hours. I will check my email during office hours.

Zoom Room: For security reasons, this will only be sent to the email addresses on my roster. If your email address is not with the district, please email me.

MY WEBSITE AT <http://www.kkuniyuk.com> (or google “precalculus notes”);

MATH 141 SITE: <http://www.kkuniyuk.com/Math141.html>

- Ready access to the Internet and email will be assumed. Webcams will **not** be required. **I will ask you to submit homework to my Yahoo! email account.**
- I expect to post **homework** assignments and answers; **class notes**; old exam outlines and old exams and solutions (for your reference); tips on test-taking and reducing test anxiety (for other classes); and extra links, notes, info, and resources for interested students.
- I will try to help you form **study groups**. Email me.

THERE IS NO REQUIRED TEXTBOOK. NOTES ARE ONLINE. HW PROVIDED.

- **Homework (HW)** assignments and answers will be provided on my website. Worked-out **solutions** may be given in some class sessions, part or all of which may or may not be recorded; student preference may factor in.
- I will tell you what you can **skip** in class. The chapters after Chapter 1 are not as polished, but they are nice in that they are more like “board notes.” Chapter 1 is “over-written.”
- I used to use **Larson’s** Precalculus text. The notes from Chapter 2 on basically follow Larson’s order of topics. **Cheap, old editions** are sold on ebay.com and amazon.com.
- **My website** has Amazon links to other books and videos. Check ebay.com. The **Schaum’s Outline** paperbacks are much cheaper than textbooks, and they have many worked-out problems.

ACCOMMODATIONS; DSPTS

- Students with disabilities who may need academic accommodations are encouraged to **discuss** their authorized accommodations from Disability Support Programs and Services (DSPTS) with their professors **early** in the semester so that accommodations may be implemented as soon as possible.
- The faculty member will work with the DSPTS Office to ensure that proper **accommodations** are made for each student. By law, it is up to the DSPTS Office to determine which accommodations are appropriate, not the student or the faculty.
- Students with disabilities or medical concerns who may need academic accommodations should notify their professors **immediately**. See the DSPTS website at www.sdmesa.edu/dsps
- If you are involved in professional or college **activities** (e.g., military duty or athletics) that may, for example, hinder your ability to attend class and/or submit homework, let me know **as soon as possible** so that accommodations may be made.

ADDITIONAL HELP

Canvas site. I base my class on my website, not a Canvas site, but a **discussion board** and **NetTutor** can be accessed on Canvas: <https://sdccd.instructure.com/login/canvas>

Websites! My website has links that may prove helpful.

Your fellow students! Email me. The **Canvas discussion board** may help also.

TUTORING!

- **Mesa Tutoring and Computing Centers (MT2C): Math & Science Tutoring and Computing:** <http://www.sdmesa.edu/mt2c>
- **NetTutor.** Free online tutoring via **Canvas:** <https://sdccd.instructure.com/login/canvas>
- **Math workshops.**
<http://www.sdmesa.edu/academics/schools-departments/mathematics-natural-sciences/workshops/index.shtml>
- **STAR/TRIO Tutoring.** One-on-one weekly tutoring for eligible students (low-income, first-generation college, or disabled).
Email: startrio@sdccd.edu. Web: <http://www.sdmesa.edu/star>

Student resources: <http://www.sdmesa.edu/student-services/student-services/ss-home-page/Helpful%20Resources%20for%20Students.pdf>

DEADLINES (SEE THE “VERY TENTATIVE SCHEDULE” AT THE END)

Adding (*); Drops w/no “W”; Refunds	Fri.	Aug. 28	Week 2
Pass / No Pass petition	Fri.	Sept. 18	Week 5
Withdrawal deadline (**)	Fri.	Oct. 23	Week 10

(*) Tuition and fees must be paid within two (?) days of adding a course, or by this deadline, whichever comes first.

(**) If you do not withdraw from the class by this deadline, I must give you an evaluative grade (like A-F, Pass / No Pass).

GRADES / ASSIGNMENTS (see also ALEKS REVIEW + EXTRA CREDIT)

- Your course score will be out of 1000 points (1000 pts. = "100%"), divided as such:

HOMEWORK ("HW"): 850 points (85% of course grade)

-- 6 HW assignments (**You do NOT have to do "ADDITIONAL PROBLEMS."**)

HW for Chapter 0	90 points
HW for Chapter 1	60 points
HW for Chapters 2-3	150 points
HW for Chapter 4	150 points
HW for Chapters 5-6	150 points
HW for Chapters 7-10	250 points

- The HW assignments are on my Math 141 website:
<http://www.kkuniyuk.com/Math141.html>
- Your HW grade will be a combination of **overall completeness** and analyses of your solutions to **selected problems / exercises**.
- I expect to discuss some **solutions** with students in our **HW SESSIONS**, part or all of which may or may not be recorded; student preference may factor in. These sessions will be very difficult to understand if you have not studied the material or basically completed the HW. **It is expected that students will be knowledgeable enough to keep up with the HW sessions.**
- Although you are strongly encouraged to do problems as soon as you can, homework will typically be **due midnight, the end of the day following the corresponding HW SESSION**, unless the due date is explicitly postponed.
- I expect students to write out (or type) their solutions to problems on paper and then **email** scans or photos to my email address: kkuniyuk@yahoo.com
- You **do not have to copy the given problem statements**, though sometimes it helps students.
- My Yahoo! email account has **unlimited storage capacity**. Don't worry about that!
- **Expect late HW to be penalized.** Expect late HW to lose about four points each day after the due date and potentially all points one week after the due date.
The last HW must be turned in on time.
- Make sure you turn in your solutions to the homework problems in the **correct order** so that there is no confusion and you can get all the points. If you have trouble with some particular problems, you could **leave some space on your papers and come back to them later**.
- **Make sure you clearly separate sections on your homework! Write your first name, last name, and "Math 141" on either a title page or on the upper right corner of the first page.**
- On your homework, **show work where appropriate**. **Points may be deducted** from submissions that are incomplete or illegible, that are systematically copied, that are turned in late, that do not adhere to "good form and procedure" as presented in class, or that have insufficient, messy, or unordered work.

CLASS PARTICIPATION: 150 points (15%)

- This may involve participation in class (possibly including Zoom chat), office hours, email, HW sessions, in-class activities and exercises, possibly Canvas discussion boards, etc.
- Your grade in this class will be affected by class participation as follows:
Everyone will get at least 135 points (90%) here, so your class participation score will not harm your letter grade. **The remaining 15 points** will be assigned based on an assessment of your engagement as described above. Also, I may use class participation as **a key factor in determining grade “borderline” cases.**

The following are guarantees:

	At least ... out of 1000 points			
Course score	890 (89%)	790 (79%)	690 (69%)	590 (59%)
Grade guarantee	A	B or better	C or better	D or better

I do not reverse curve. The grade cutoffs may be lowered.

Percents might not be rounded up! **Class participation will be critical here.**

The course may be taken on a Pass / No Pass basis, but check your program requirements, first. The petition deadline is Fri., Sept. 18 (Week 5).

ACADEMIC INTEGRITY

- **Collaboration** outside of class is encouraged, but **systematic copying is forbidden**.
- In the event of **systematic copying**, the instructor may consult with students before assigning points.
- **Online resources** should be used judiciously and only to **enhance the students' learning**.
- Homework exercises and grading schemes from prior terms may not apply now.

CLASSROOM BEHAVIOR AND STUDENT CODE OF CONDUCT:

Students are expected to respect and obey standards of student conduct while in class and on the campus. The student Code of Conduct, disciplinary procedure, and student due process (Policy 3100, 3100.1 and 3100.2) can be found in the current college catalog in the section Academic Information and Regulations, and at the office of the Dean of Student Affairs (H-500). Charges of misconduct and disciplinary sanctions may be imposed upon students who violate these standards of conduct or provisions of college regulations.

Statements from Mesa / Student Services:

San Diego Mesa College Academic Honesty Statement

San Diego Mesa College values honesty, academic integrity, and community. Our goal is to guide our students in maintaining academic excellence, in addition to fostering a sense of belonging to our campus.

[We expect a student to affirm the following:]

As a student at San Diego Mesa College, I am committed to producing my own work in connection with all lecture and laboratory assessments and assignments, and will refrain from any activity to include copying, cheating, plagiarizing, utilizing outside resources, or any form of academic misconduct. I will only use external sources when approved by faculty, and I will properly acknowledge these external sources. I understand failure to comply with these standards will be considered a violation of the Student Code of Conduct under Board Policy 3100 and may result in student disciplinary action.

Students are expected to be honest and ethical at all times in the pursuit of academic goals. Students who are found to be in violation of Administrative Procedure 3100.3 Honest Academic Conduct, will receive a grade of zero on the assignment, quiz, or exam in question and may be referred for disciplinary action in accordance with Administrative Procedure 3100.2, Student Disciplinary Procedures.

PREPARATIONS FOR CLASS / CALCULATOR INFO:

- You will need **Internet and email** access.
- Copies of **homework** assignments and answers
We will discuss the homework during HW SESSIONS.
We may have time to discuss homework after class.
- **A scientific (not graphing) calculator - you will need one for the course.**
Some sections at City, Mesa, and Miramar (and at Cuyamaca and Grossmont) are more graphing calculator-based; check the online schedule.
Many scientific calculators are like graphing calculators as far as WYSIWYG (What You See Is What You Get) entry goes. The Sharp EL733A is a good business calculator; the HP 30S has a large display; and the TI-30X IIS (which I have and which I can help you with) can also be good, though it relies on menus.
- **Some paper and a pencil or pen: for notetaking and in-class exercises**

RESPONSIBILITY TO ADD, DROP, OR WITHDRAW

It is the student's responsibility to drop all classes in which they are no longer attending. Students who remain enrolled in a class beyond the published withdrawal deadline, as stated in the class schedule, will receive an evaluative letter grade in this class. If you decide to withdraw from this course, you are reminded to do so by Fri., Oct. 23. To avoid a mark from appearing on your transcript, remember to drop by Fri., Aug. 28.

Petitions to add, drop, or withdraw after the deadline will not be approved without proof of circumstances beyond the student's control which made him/her unable to meet the deadline. Lack of money to pay fees is not considered an extenuating circumstance. Students anticipating difficulty in paying fees before the add deadline should check with the Financial Aid Office about sources of funds or other alternatives for which they may be eligible. **Expect "late" adds, drops, and withdrawals to no longer be accepted.** Please discuss your plans to withdraw from class with your instructors. They may have other options for you that may allow you to continue in class.

INSTRUCTOR ABSENCE (DISTRICT POLICY)

If neither the instructor nor a substitute appears at the beginning of the scheduled class time, students shall wait 20 minutes; if neither the instructor nor a substitute appears within those 20 minutes, students may leave the classroom.

DO YOU NEED THIS CLASS?

Make sure that you check www.assist.org to see that your major requirements for transfer have not changed. Bear in mind that the site needs updating.

OFFICIAL STUFF WE CAN SKIP ☺

PREREQUISITE

MATH 104 (Trigonometry) with a grade of "C" or better, or equivalent.

COURSE DESCRIPTION (IN CATALOG)

This course is a study of numerical, analytical, and graphical properties of functions. The course content includes polynomial, rational, irrational, exponential, logarithmic, and trigonometric functions. Additional topics include: inverse functions, complex numbers, polar coordinates, matrices, conic sections, sequences, series and the binomial theorem. This course is designed as a preparation for calculus and is intended for the transfer student planning to major in mathematics, engineering, economics, or disciplines included in the physical or life sciences. (FT). Associate Degree Credit & transfer to CSU. UC Transfer Course List. MATH 116 and 141 combined: maximum credit, one course.

COURSE LEARNING OUTCOMES (MATH 141 COURSE CLOs)

- #1 - Given the representation of a graph ($f(x)$), students will identify the a , h and k variables in the expression $a f(x-h)+k$ for a variety of transformations.
- #2 - Students will be able to calculate the difference quotient for a variety of functions and simplify it.

PROGRAM LEARNING OUTCOMES (DEPARTMENTAL / MATH)

“Students who complete the Mathematics program will be able to.....”

- 1) Problem Solving: Apply appropriate mathematical definitions, properties, techniques, and/or technology to a variety of problem solving situations.
- 2) Interrelatedness of Concepts: Demonstrate knowledge of the interrelatedness of several mathematical concepts.
- 3) Communication and Reasoning: Demonstrate the ability to communicate mathematical reasoning both in the context of solving a problem and in the reasonableness of a solution.

STUDENT LEARNING OBJECTIVES

Upon successful completion of the course the student will be able to:

1. Define and distinguish between higher order polynomial functions and non-polynomial functions and relations, and analyze the graphs of functions by determining their domains and ranges.
2. Analyze properties of functions and their graphs, including symmetries, increasing and decreasing intervals and their end behavior asymptotes.
3. Prove algebraically and justify graphically when a function is one-to-one.
4. Graph a variety of algebraic, rational, exponential, logarithmic, and trigonometric functions, and where applicable, use rigid and non-rigid transformations, intercepts and asymptotes.
5. Perform algebraic operations on various functions including composition of functions, and determine the domain of the resulting function.
6. Calculate the inverse of a one-to-one function, determine the domain and range of the inverse and describe the relation between their graphs.
7. Solve equations and application problems involving exponential and logarithmic functions.
8. Simplify difference quotients involving a variety of functions including polynomial, rational, trigonometric, exponential, and logarithmic functions.
9. Apply a variety of root finding theorems and tests in order to factor polynomials or solve polynomial equations whose degree is higher than quadratic.
10. Simplify rational expressions and expressions involving radicals that arise from calculus operations, such as those from the product or quotient rules.
11. Determine the partial fraction decomposition of rational functions.
12. Define, evaluate, describe and graph all trigonometric and inverse trigonometric functions, and solve equations involving these functions.
13. Derive and prove fundamental trigonometric identities including the sum, difference, double and half angle identities.
14. Apply the laws of sines and cosines in solving oblique triangles and application problems.
15. Represent complex numbers in standard, trigonometric and exponential forms and perform arithmetic operations with each.

16. Perform algebraic operations involving matrices.
17. Apply matrices in solving linear systems of equations.
18. Compute the determinant of a square matrix, and apply determinants to various applications.
19. Apply vector algebra to problems involving vector quantities.
20. Perform the vector operations called dot and cross products, and formulate their geometric interpretations.
21. Analyze, identify, and graph the four conic sections.
22. Solve systems of non-linear equations and inequalities, including those involving conic sections.
23. Define and analyze sequences and series, including arithmetic and geometric sequences and series, find the sum of finite and infinite geometric series.
24. Apply the binomial theorem to expand powers of binomial expressions.
25. Prove elementary mathematical statements using the Principle of Mathematical Induction.

STUDENT SERVICES SUPPORT: **SAN DIEGO MESA JOURNEYS TOOL**

The San Diego Mesa Journeys tool (<http://www.sdmesa.edu/mesa-journeys/>) provides free access to over 30+ support programs and services to help you succeed. The “Your Mesa Journey” tool is a short survey asking various questions about your demographics and educational goals. Based on your responses, the application will then provide you a list of recommended programs and services that may help you with your educational journey here at Mesa College. Please complete it today at: <http://www.sdmesa.edu/mesa-journeys/>

NOTES / CLASS CONTACTS

ALEKS REVIEW + EXTRA CREDIT (UP TO 25 POINTS)

(6-WEEK LICENSE; CAN RENEW)

- **ALEKS class code.** I expect to send this out during Week 1.
- **Timing.** My “PreCalculus Chapter 0 F20” ALEKS course is based on Chapter 0, so you should do this ASAP (as soon as possible). It is not required, but it can help a lot – in terms of your knowledge of Chapter 0 material, and also in terms of points. You will likely purchase the 6-week license, but longer licenses are available. You can renew the license, though all work you do for extra credit must be done by **Mon., Dec. 14** (about 11:59pm).
- **Losing ground.** ALEKS punishes procrastinators, so do not take long breaks in your progress through the system! Sometimes, students lose progress % points after retesting. I will try my best to capture your best % along the way through the midnight reports I receive.
- **Additional topics.** Although there are no plans (as of now) to make this extra credit, additional Precalculus topics may be available for your practice; check your email.
- **Purchasing and access.** ALEKS codes can be purchased through <http://www.aleks.com/> Email me for the class code and other info if you don’t get my email. (Note: My last name is misspelled as “Kuniyuiki.”) Check online for system requirements. Check my website.
- **Safari warning.** ALEKS might not work well on old versions of the Apple Safari browser.
- **Grading criteria.** I have determined the ALEKS “pie” for our class.

If you complete...	You will receive at least...
At least 50% of the ALEKS pie	5 points
At least 60% of the ALEKS pie	10 points
At least 70% of the ALEKS pie	15 points
At least 80% of the ALEKS pie	20 points
At least 90% of the ALEKS pie	25 points

You would get 6 points for 52%, 7 points for 54%, etc.

- **Assessment not-a-test.** Don’t cheat on this diagnostic tool! It is meant to place you accurately within the ALEKS system. You will end up doing **more** work if you are not correctly assessed!
- **Materials.** Pencil, paper, and a notebook are recommended.
- **Math 15s.** Our ALEKS-based Math 15 classes typically provide more supervision, although Math 15 credit does not apply to your grade in Math 141. Only take one at a time. A Math 15 class is Pass / No-Pass, one unit. Try to avoid a “W” withdrawal.

INTERNET TECHNOLOGY

- **ZOOM:** <https://zoom.us>

Zoom Room. For security reasons, this will only be sent to the email addresses on my roster and wait list. If your email address is not with the district, please email me: kkuniyuk@yahoo.com

Appointments. Please do not contact me through Zoom outside of class time without an email appointment - I may be speaking with other students! I will check my email during office hours: MW 6:30-7:45pm, TTh 5:30-6:45pm.

Consent to being recorded. If you speak or chat publicly in class, then it is assumed that you are giving **consent** to being recorded. Sometimes, I will turn off the recording feature. I do not intend to publish public chats, though that it is not out of the question.

In-class Zoom etiquette.

- Please “**Mute**” yourself unless you wish to speak. Otherwise, the slightest sound could shift the camera to you. I may mute the entire class.
- Feel free to “**Chat**” publicly or privately (to me or other students). Feel free to type “Pause” or “?” if you would like me to stop and address a question.
- I will address more questions between the short YouTube videos I play in class.

- **YOUTUBE**

Lecture videos and most in-class recordings will be posted on my YouTube channel; go to “**Playlists**”: <https://www.youtube.com/channel/UCpftfxKG-zvG3SaXeCiivHA>

HW sessions may or may not be posted all or in part. Other student communications might not.

- **CANVAS:** <https://sdccd.instructure.com/login/canvas>

Student discussion boards and **NetTutor** are available.

I do not intend to use Canvas much. **I intend to email grade information.**

MATH 141 VERY TENTATIVE SCHEDULE (version 1)

(May be changed arbitrarily; keep checking email!); HW, **HW SESS.** = HW questions

FALL 2020; Week # (Holidays / Deadlines)	TUESDAY	THURSDAY
1	8/18 (Day 1) Hello / 0.1-0.5 start	8/20 (Day 2) finish 0.5-0.7
2 Add; Drop w/no W; Refund (Fri., 8/28)	8/25 (Day 3) 0.8-0.10	8/27 (Day 4) 0.11-0.16
3	9/1 (Day 5) 1.1, 1.2 / HW (discuss)	9/3 (Day 6) HW SESS. Ch.0 / 1.3
4 Holiday (Mon., 9/7)	9/8 (Day 7) 1.4, 1.5, 1.6	9/10 (Day 8) 1.7-1.10, (skim 1.11)
5 Pass / No Pass deadline (Fri., 9/18)	9/15 (Day 9) 2.1, 2.2 / HW	9/17 (Day 10) HW SESS. Ch.1 / 2.3, start 2.4
6	9/22 (Day 11) finish 2.4, 2.5	9/24 (Day 12) 2.6, 2.7
7	9/29 (Day 13) 3.1, 3.2, start 3.3	10/1 (Day 14) finish 3.3, 3.4/3.5, 4.1
8	10/6 (Day 15) start 4.2-4.4 / HW	10/8 (Day 16) HW SESS. Chs.2-3
9	10/13 (Day 17) “finish” 4.2-4.4, 4.5	10/15 (Day 18) 4.6, start 4.7
10 “W” deadline (Fri., 10/23)	10/20 (Day 19) finish 4.7, 4.8, 4.2-4.4 parts, start 5.1	10/22 (Day 20) finish 5.1, 5.2, start 5.3 / HW
11	10/27 (Day 21) HW SESS. Ch.4	10/29 (Day 22) finish 5.3, start 5.4/5.5
12	11/3 (Day 23) finish 5.4/5.5, 6.1-6.2	11/5 (Day 24) 6.3, 6.4, (skim 6.5)
13 Holiday (Wed., 11/11)	11/10 (Day 25) 7.1-7.3, start 7.4 / HW	11/12 (Day 26) HW SESS. Chs.5-6
14	11/17 (Day 27) finish 7.4, (skim 7.5, 7.6), start 8.1	11/19 (Day 28) finish 8.1, 8.2, 8.4 (skim 8.3, 8.5)
No classes this week!	NO CLASS	NO CLASS
15	12/1 (Day 29) 9.1/9.6, 9.2, start 9.3	12/3 (Day 30) finish 9.3, 9.4, 9.5, start Ch.10
16	12/8 (Day 31) more Ch.10 / HW	12/10 (Day 32) HW SESS. Chs.7-10
(Week 17) Semester ends Mon., 12/14 ALEKS DUE Mon., 12/14		

MATH 141: Precalculus; Class # 42131; 5 units; TTh 7:05-9:30pm; Mesa Remote

Ken Kuniyuki; kkuniyuk@yahoo.com or kkuniyuk@sdccd.edu (official)

YouTube: <https://www.youtube.com/channel/UCpftfxKG-zvG3SaXeCiiVHA>

Zoom Room: See my email.

Office Hours: MW 6:30-7:45p, TTh 5:30-6:45p in my Zoom Room (by appointment).

Website (with complete syllabus): www.kkuniyuk.com or google “Precalculus Notes”