



GEC 002 – MATHEMATICS IN THE MODERN WORLD/MATEMATIKA SA MAKABAGONG DAIGDIG

UNIVERSITY VISION

A leading University in advancing scholarly innovation, multi-cultural convergence, and responsive public service in a borderless Region.

UNIVERSITY MISSION

The University shall primarily provide advanced instruction and professional training in science and technology, agriculture, fisheries, education and other related fields of study. It shall also undertake research and extension services, and provide progressive leadership in its areas of specialization.

UNIVERSITY STRATEGIC GOALS

- a. Deliver quality service to stakeholders to address current and future needs in instruction, research, extension, and production
- b. Observe strict implementation of the laws as well as the policies and regulations of the University
- c. Acquire with urgency state-of-the-art resources for its service areas
- d. Bolster the relationship of the University with its local and international customers and partners
- e. Leverage the qualifications and competences in personnel action and staffing
- f. Evaluate the efficiency and responsiveness of the University systems and processes

PROGRAM OUTCOMES (PO) COMMON TO ALL PROGRAMS AND ITS RELATIONSHIPS TO INSTITUTIONAL OUTCOMES (CMO 46 s. 2012)

A graduate of Sultan Kudarat State University can:

- a. discuss the current developments and advancements in the specific field of practice;
- b. demonstrate independently the 21st century competencies and skills;
- c. work collaboratively in multi-disciplinary and multi-cultural groups;
- d. exhibit professional, social and ethical accountability;
- e. preserve Filipino historical and cultural heritage;
- f. generate new knowledge through data-driven research and development projects; and

INSTITUTIONAL OUTCOMES (IO)

- a. Enhance competency development, commitment, professionalism, unity and true spirit of service for public accountability, transparency and delivery of quality services
- b. Provide relevant programs and professional trainings that will respond to the development needs of the region
- c. Strengthen local and international collaborations and partnerships for borderless programs
- d. Develop a research culture among faculty and students
- e. Develop and promote environmentally-sound and market-driven knowledge and technologies at par with international standards
- f. Promote research-based information and technologies for sustainable development
- g. Enhance resource generation and mobilization to sustain financial viability of the university

INSTITUTIONAL OUTCOMES (IO)

a	b	c	d	e	f	g
✓	✓				✓	
✓	✓		✓		✓	
✓		✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	✓

g. participate actively in the national, regional and local development plans.



1	COURSE CODE	GEC 002
2	COURSE TITLE	Mathematics in the Modern World/ Matematika sa Makabagong Daigdig
3	PREREQUISITE	None
4	CREDITS	3 units

5 COURSE DESCRIPTION

This course deals with nature of mathematics, appreciation of its practical, intellectual and aesthetic dimensions, and application of mathematical tools in daily life.

The course begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and of science) governed by logic and reasoning.

The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present-day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity. (CMO No. 20, series of 2013)

6 COURSE LEARNING OUTCOMES (CLO) AND ITS RELATIONSHIPS TO PROGRAM OUTCOMES

Course Learning Outcomes (CLO)

At the end of the course, a student can:

	Program Outcomes						
	a	b	c	d	e	f	g
Knowledge							
a. explain the nature of mathematics, what it is, how it is expressed, represented, and used;	✓	✓	✓	✓	✓	✓	✓
b. discuss the language and symbols of mathematics;	✓	✓	✓	✓	✓	✓	✓
c. use different types of reasoning to justify statements and arguments made about mathematics and mathematical concepts;	✓	✓	✓	✓	✓	✓	✓
Skills							
d. apply strategies for effective problem solving;	✓	✓	✓	✓	✓	✓	✓
e. use a variety of statistical tools to process and manage numerical data, and be able to formulate significant decision;	✓	✓	✓	✓	✓	✓	✓
f. analyze codes and coding schemes used for identification, privacy, and security purposes;	✓	✓	✓	✓	✓	✓	✓
g. utilize mathematics in other areas such as finance, voting, health and medicine, business, graphs, environment, arts and design, and recreation;	✓	✓	✓	✓	✓	✓	✓
Values							
h. appreciate the nature and uses of mathematics in everyday life; and	✓	✓	✓	✓	✓	✓	✓
i. affirm honesty and integrity in the application of mathematics to various human endeavor.	✓	✓	✓	✓	✓	✓	✓

7 COURSE CONTENTS

WEEK	CONTENT	INTENDED LEARNING OUTCOMES (ILOs)	TOPIC: SKSU VMGO, Classroom Policies, Course Overview, Course Requirements, Grading System	OUTCOMES-BASED ASSESSMENT (OBA)	COURSE LEARNING OUTCOMES (CLOs)
1	Course Orientation SKSU VMGO, Classroom Policies, Course Overview, Course Requirements, Grading System	<p>At the end of the lesson, a student can</p> <ul style="list-style-type: none"> a. discuss the University VMGO, classroom policies, course overview, requirements and grading system b. familiarize the class policies, course requirements and grading system 	<p>TEACHING AND LEARNING ACTIVITIES (TLA)</p> <p>Activity</p> <ul style="list-style-type: none"> • Group Activity Each group will name successful SKSU graduates and their present affiliations. They will then decide how they are going to introduce their identified graduate. <p>Analysis</p> <ul style="list-style-type: none"> • Presentation of Output Each group will select their manner of presentation i.e. it could either be by role playing, poem recitation, song rendition, etc. <p>Abstraction</p> <ul style="list-style-type: none"> • Class Discussion Presentation of the VMGO and course syllabus <p>Application</p> <ul style="list-style-type: none"> • Road Mapping Students will interview a successful graduate and make a road map of success 	<ul style="list-style-type: none"> • Written Output of the Group Activity • Actual Performance (Presentation) • Graded Recitation • Road Map of Success The students will interview successful SKSU graduates and trace the graduate's journey from being a student up to present. 	a, h, i

2-3	<p>Chapter 1: The Nature of Mathematics</p> <p>Lesson 1: Mathematics in Our World Lesson 1.1. The Meaning of Mathematics, Lesson 1.2. Mathematics as a Study of Patterns and Relationships, Lesson 1.3 Mathematics in Nature</p>	<ul style="list-style-type: none"> a. identify patterns and numbers in nature and regularities in the world, b. articulate the importance of math in one's life, c. argue about the nature of mathematics, what it is, and how it is expressed, represented and used, d. express appreciation for mathematics as a human endeavor. 	<p>Activity</p> <ul style="list-style-type: none"> • Video-watching <p>Students will watch videos about mathematics in nature. Students will write a reflection paper and answer the guide questions given below.</p> <ul style="list-style-type: none"> a. What new ideas about mathematics did you learn? b. What is it about mathematics that might have changed your thoughts about it? c. What is the most useful about mathematics for humankind? <p>Analysis</p> <ul style="list-style-type: none"> • Pair-Sharing <p>By pair, students will share with each other their reflection about the videos they watched as well as their answers on the guide questions. After the sharing by pair, a representative from each pair will present to the class what transpired in their group.</p> <p>Abstraction</p> <ul style="list-style-type: none"> • Guided Discussion <p>Application</p> <ul style="list-style-type: none"> • Collage Making <p>Collage of daily life, new discoveries, technological discoveries, natural phenomenon</p>	<ul style="list-style-type: none"> • Reflection Paper
4-6	<p>Section 1: The Nature of Mathematics</p> <p>II. Mathematical Language and Symbols</p> <p>II.1. Conversion of Mathematical Expressions into English Language</p> <p>II.2. Four Basic Mathematical Concepts: Set, Relation, Function and Binary Operation</p> <p>II.3. Elementary Logic</p>	<ul style="list-style-type: none"> a. discuss the language, symbols and conventions of mathematics, b. explain the nature of mathematics as a language c. perform operations on mathematical expressions correctly d. acknowledge that mathematics is a useful language 	<p>Activity</p> <ul style="list-style-type: none"> • Guessing Game <p>The class will be divided into two groups and they alternately give a mathematical expression for the other group to provide the English translation and vice versa.</p> <p>Analysis</p> <ul style="list-style-type: none"> • Bag Raid (What's Inside Your Bag?) <p>The class will be divided into four groups. Each group will provide one (1) bag filled with things like ballpens, pencils, notebooks, books, cellular phones, etc.</p> <p>This activity will introduce the concept of set,</p>	<ul style="list-style-type: none"> • Written Output of the Pair-Sharing Activity <p style="text-align: right;">a,h,i</p> <ul style="list-style-type: none"> • Problem Sets • Quiz • Graded Recitation <ul style="list-style-type: none"> • Collage <p>Actual Performance</p> <ul style="list-style-type: none"> • • • • Recitation • Problem Sets • Quiz <p style="text-align: right;">b, h, i</p>

			relation, function and binary operations.	
7-8	Section 1: The Nature of Mathematics III. Problem Solving and Reasoning III.1. Inductive and Deductive Reasoning III.2. Polya's 4 Steps in Problem Solving	a. use the different types of reasoning to justify statements and arguments made about mathematics and mathematical concepts. b. write clear and logical proofs, c. solve problems involving patterns and recreational problems following Polya's four steps in problem solving d. organize one's methods and approaches for proving and solving problems	Abstraction <ul style="list-style-type: none"> ● Guided Discussion Application <ul style="list-style-type: none"> ● True or False Game <p>The teacher will give sentences and students will identify whether it is a proposition or not; and whether it is true or false.</p> <ul style="list-style-type: none"> ● Group Activity (Brainstorming and Argument-Construction) ● Sticky Notes Graph: Organizing Statements in Forming the Proof of Mathematical Statement ● Cooperative Learning (Group Effort in Solving Problems) 	<ul style="list-style-type: none"> ● Recitation ● Problem Sets ● Quiz
9			MIDTERM EXAMINATION	c,d, h, i
10-13	Section 2: Mathematics as a Tool (Part I) IV. Data Management IV.1. Data Gathering and Organizing Data, Representing Data Using Graphs and Charts and Interpreting Organized Data IV.2 Measures of Central Tendency: Mean, Median, Mode, Weighted Mean IV.3 Measures of Dispersion: Range, Standard Deviation and Variance IV.4. Measures of Relative Position: z-scores, percentiles, quartiles and box-and-whiskers plots IV.5 Probability and Normal Distributions IV.6. Linear Regression and Correlation, Least-Squares	a. use variety of statistical tools to process and manage numerical data. b. apply the methods of linear regression and correlations to predict the value of a variable given certain conditions c. advocate the use of statistical data in making important decisions .	<ul style="list-style-type: none"> ● Profiling Activity <p>By group, students will conduct a survey to random students and gather data such as gender, order in the family, weekly allowance and GPA for the previous semester.</p> <ul style="list-style-type: none"> ● Focus Group Discussion <p>Students will discuss how data are organized.</p> <ul style="list-style-type: none"> ● Interactive Direct Instruction ● Mini-Research <p>Students will craft a mini-research using the gathered data in the 'profiling activity'.</p>	<ul style="list-style-type: none"> ● Mini-Research ● Recitation ● Problem Sets ● Quiz

	Line, Linear Correlation Coefficient			
14-15	Section 2: Mathematics as a Tool (Part II) V. Mathematics of Finance V.1. Simple and Compound Interest V.2. Credit Cards and Consumer Loans V.3. Stocks, Bonds and Mutual Funds	a. compute simple and compound interest, credit cards and consumer loans, stocks, bonds and mutual funds and home ownership b. apply different concepts of mathematics of finance in making wise decisions related to personal finance c. support the use of mathematics in various aspects and endeavors in life	j. Role Playing Given different scenarios related to finance, students will perform a role playing. k. Lecture Discussion	l. Recitation m. Problem Sets n. Quiz g, h, i
16	Section 2: Mathematics as a Tool (Part II) VI. Apportionment and Voting	a. determine apportionment using different methods b. compare the strengths and weaknesses of apportionment methods, c. determine whether the winner of an election has a plurality or majority of the votes,	<ul style="list-style-type: none"> ● Alabama Paradox Before coming to class, students will determine the number of voters in their barangay. During the class, each student will cast a vote choosing between two candidates. Based on the total number of votes, students will determine the winner using Alabama Paradox. ● Interactive Lecture 	<ul style="list-style-type: none"> ● Recitation ● Problem Sets ● Quiz ● Condorcet Paradox [Students will make a poll of the preferred cellular phone. In a poll to determine the preferred cellular phone brand of SKSU students (per college), a survey will be conducted for 100 voters.] f, g, h, i
17	Section 2: Mathematics as a Tool (Part II) VII. Geometric Designs V.1. Geometric Shapes V.2. Transformations V.3. Patterns and Diagrams V.4. Designs, Arts and Culture	a. apply geometric concepts. Especially isometries in describing and creating designs b. contribute to the enrichment of the Filipino culture and arts using concepts in geometry	<ul style="list-style-type: none"> ● Video Clips Students will research about the different patterns of Philippine indigenous textile and create a video that will be posted in any social media platform. ● Transformations Art Activity Students create art with the different types of transformations. Students can design whatever template they want to use and trace it to create copies (idea of congruency), and they can create tri-fold with the original image and a reflection, rotation, and translation. ● Digital Transformation Activity Students can flip, slide, and rotate objects using mouse pad. 	<ul style="list-style-type: none"> ● Video Clips ● Transformations Arts/ Digital Transformation Arts g, h, i

Total No. of Hours : 54

8 COURSE REQUIREMENTS AND COURSE POLICIES

Each student is required to:

1. attend at least 80% of the class hours;
2. submit accomplished assignments, problem sets and assessment outputs;
- 3.
4. take notes during a lecture;
5. participate in class activities; and
6. pass the major exams (midterm and final)

COURSE REQUIREMENTS

Attendance: A student will be marked late if he/she enters the class 5 minutes after start of class period. Any student who comes to class 15 minutes after the scheduled time or always late for three consecutive meetings shall be marked absent.

COURSE POLICIES

Missed work or exam: Any student who missed to submit a work assignment or to take a test should consult the concerned instructor for immediate compliance

Cheating and Plagiarism: Any student who committed any form of academic dishonesty (e.g., copy-paste plagiarism) shall be given disciplinary action provided in the SKSU

Student's Handbook

Use of Technology: Cell phones should be turned off while the class session is in progress. Using laptops, notebook PCs, smart phones, and tablets shall be allowed only when needed. A scientific calculator be utilized in solving.

9 GRADING SYSTEM AND RUBRICS FOR GRADING

GRADING SYSTEM	Midterm Grade		Final Term Grade		FINAL GRADE	
	Midterm Examination	50%	Final Term Examination	50%	Midterm Grade	50%
	Attendance/ Class Participation	10%	Attendance/Class Participation	10%	Final Term Grade	50%
	Quizzes	15%	Quizzes	15%	Final Term Grade	50%
	Project	15%	Project	15%		
	Assignment/Problem Sets	10%	Assignment/Problem Sets	10%		
	TOTAL	100%	TOTAL	100%		

SUGGESTED RUBRICS FOR ALTERNATIVE FORMS OF ASSESSMENT

A. FOR ROAD MAP OF SUCCESS/ PORTFOLIO

CRITERIA	4 (Exemplary)	3 (Proficient)	2 (Satisfactory)	1 (Unsatisfactory)
<ul style="list-style-type: none"> Content <ul style="list-style-type: none"> Accurate supporting details/ evidence Detail/evidence well-suited to audience Detail/ evidence relevant to main idea Accurate conclusions 	<ul style="list-style-type: none"> Extensive presence of accurate supporting detail/ evidence. Detail is always well suited to audience Evidence is consistently relevant to the main idea. Accurate and logical conclusion that extensively synthesizes argument. 	<ul style="list-style-type: none"> Considerable presence of accurate supporting detail/evidence Detail is usually well suited to audience Evidence is nearly always relevant to the main idea Mostly accurate and logical conclusion that effectively synthesizes argument. 	<ul style="list-style-type: none"> Adequate presence of accurate supporting detail/evidence Detail is sometimes well suited to audience Evidence is relevant to the main idea some of the time. Generally accurate and logical conclusion that partially synthesizes argument 	<ul style="list-style-type: none"> Minimal presence of accurate supporting detail/evidence Detail is rarely well suited to audience Evidence is rarely relevant to the main idea Minimally accurate and logical conclusion
<ul style="list-style-type: none"> Organization <ul style="list-style-type: none"> Introduction Body Conclusion Transitions 	<ul style="list-style-type: none"> Introductory statement is present and commendable Body of supporting material is present and commendable Conclusion is present and commendable Smooth and enriching transitions 	<ul style="list-style-type: none"> Introductory statement is present and effective Body of supporting material is present and effective Conclusion is present and effective Smooth and effective transitions 	<ul style="list-style-type: none"> Introductory statement is present and acceptable Body of supporting material is present and acceptable Conclusion is present and acceptable Suitable transitions 	<ul style="list-style-type: none"> Introductory statement is limited Body of supporting material is present and acceptable Conclusion is present and acceptable Suitable transitions
Language Use	<ul style="list-style-type: none"> Extensive use of accurate vocabulary Extraordinary word choice Extensive variation in sentence form and structure Product is consistently coherent and reads extraordinarily well. 	<ul style="list-style-type: none"> Ample use of accurate vocabulary Effective word choice Substantial variation in sentence form and structure <p>Product is usually coherent and reads well.</p>	<ul style="list-style-type: none"> Acceptable use of accurate vocabulary Adequate word choice Suitable variation in sentence form and structure Product is sometimes coherent and reads well some of the time. 	<ul style="list-style-type: none"> Occasional use of accurate vocabulary Limited word choice Negligible variation in sentence form and structure Product is rarely coherent and does not read well.

Adopted From: Duxbury.k12.ma.us

B. RUBRICS FOR JOURNAL/REFLECTION PAPER

CRITERIA	4 (Exemplary)	3 (Proficient)	2 (Satisfactory)	1 (Unsatisfactory)
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Subject	<ul style="list-style-type: none"> Journal entry thoroughly answers the question(s) posed in the prompt 	<ul style="list-style-type: none"> Journal entry generally answers the question(s) posed in the prompt 	<ul style="list-style-type: none"> Journal entry addresses some aspects of the prompt, but questions or portions of a question(s) are left unanswered 	<ul style="list-style-type: none"> Journal entry is off-task or makes little reference to the question(s) being asked
Quality	<ul style="list-style-type: none"> Journal entry is thoughtful, carefully written and demonstrates self-reflection with regards to the topic. 	<ul style="list-style-type: none"> Journal entry is carefully written and generally demonstrates self-reflection with regards to the topic. 	<ul style="list-style-type: none"> Journal entry shows lapses in care and depth of understanding regarding the task at hand. 	<ul style="list-style-type: none"> Journal entry is not thoughtfully written, and does not suggest the subject has been taken seriously.
Clarity	<ul style="list-style-type: none"> Journal entry is clear, logical and articulate. 	Journal entry is mostly clear and logical.	<ul style="list-style-type: none"> Journal entry is somewhat unclear and may have gaps in logical sequence. 	<ul style="list-style-type: none"> Journal entry is unclear and may ramble from topic to topic.
Mechanics	<ul style="list-style-type: none"> Journal entry contains few or no grammatical errors. 	<ul style="list-style-type: none"> Journal entry contains some grammatical errors, but is generally well written. 	<ul style="list-style-type: none"> Journal entry contains several grammatical errors. 	<ul style="list-style-type: none"> Journal entry contains frequent grammatical errors, and is poorly written.

Adopted From: studylib.net

C. RUBRICS FOR COLLAGE

CRITERIA	4 (Exemplary)	3 (Proficient)	2 (Satisfactory)	1 (Unsatisfactory)
Creativity and Originality	<ul style="list-style-type: none"> Several of the graphics or objects used in the collage reflect an exceptional degree of student creativity in their creation and/or display. 	<ul style="list-style-type: none"> One or two of the graphics or objects used in the collage reflect student creativity in their creation and/or display. 	<ul style="list-style-type: none"> One or two graphics or objects were made or customized by the student. But the ideas were typical rather than creative. 	<ul style="list-style-type: none"> The student did not make or customize any of the items on the collage.
Number of Items/ Variety of Media	<ul style="list-style-type: none"> The collage includes a variety of media as well as multiple objects/items, each different. 	<ul style="list-style-type: none"> The collage includes some variety of media as well as multiple objects/items, each different. 	<ul style="list-style-type: none"> The collage includes little variety of media and few objects/items which are different. 	<ul style="list-style-type: none"> The collage includes no variety of media and no differing objects/ items.

Attention to Theme	<ul style="list-style-type: none"> The student gives a reasonable explanation of how every item in the collage is related to the theme. For most items, the relationship is clear without explanation. 	<ul style="list-style-type: none"> The student gives a reasonable explanation of how most items in the collage are related to the theme. For many of the items, the relationship is clear without explanation. 	<ul style="list-style-type: none"> The student gives a fairly reasonable explanation of how most items in the collage are related to the theme. 	<ul style="list-style-type: none"> The students's explanations are weak and illustrate difficulty understanding how to relate items to the theme.
Time and Effort	<ul style="list-style-type: none"> Much time and effort went into the planning and design of the collage. 	<ul style="list-style-type: none"> Journal entry contains some grammatical errors, but is generally well written. 	<ul style="list-style-type: none"> Student could have put in more time and effort. 	<ul style="list-style-type: none"> Student put in little time or effort.
Quality of Construction	<ul style="list-style-type: none"> The collage shows considerable attention to detail and the project exceeds all expectations. 	<ul style="list-style-type: none"> The collage shows attention to construction. The composition is well developed and appropriate to the media. Meet all requirements. 	<ul style="list-style-type: none"> The collage shows some attention to construction and composition. Most items are neat and secure. Meets some requirements. 	<ul style="list-style-type: none"> The collage was put together hurriedly. Items appear to be placed with little or no thought. Meets few requirements.

Adopted From: mavink.com

D. RUBRICS FOR MINI-RESEARCH

CRITERIA		4 (Exceeds Standards)	3 (Meets Standards)	2 (Near Standard)	1 (Below Standard)
Introduction		<ul style="list-style-type: none"> Clearly stated and appropriately focused. 	<ul style="list-style-type: none"> Clearly stated but focus needed to be sharper 	<ul style="list-style-type: none"> Thesis is inferred but not stated. 	<ul style="list-style-type: none"> Thesis is inferred but not stated.
Literature Review, Methodology, Results and Discussion, and Conclusion	Quality of Information	<ul style="list-style-type: none"> Information clearly related to the main topic, included consistent supporting details and/or examples 	<ul style="list-style-type: none"> Information clearly related to the main topic, provided adequate supporting details and/or examples. 	<ul style="list-style-type: none"> Information clearly related to the main topic, provided some supporting details and/or examples. 	<ul style="list-style-type: none"> Information related to the main topic, no details or examples provided.
Organization		<ul style="list-style-type: none"> Information is logically organized. All paragraphs include introductory sentence, explanations or details, concluding sentence with a transition. 	<ul style="list-style-type: none"> Information is adequately organized. Most paragraphs include introductory sentence, explanations or details, concluding sentence with a transition. 	<ul style="list-style-type: none"> Information is somewhat organized. Paragraphs included related information, but were typically not constructed well. 	<ul style="list-style-type: none"> Obvious lack of organization. Paragraph structure was not clear and sentences were not typically related within the paragraphs.

Mechanics	<ul style="list-style-type: none"> No grammatical, spelling or punctuation errors observed. 	<ul style="list-style-type: none"> Almost no grammatical, spelling or punctuation errors observed. 	<ul style="list-style-type: none"> A few grammatical, spelling or punctuation errors observed. 	<ul style="list-style-type: none"> Many grammatical, spelling or punctuation errors observed.
Formatting	<ul style="list-style-type: none"> All sources accurately documented in parenthetical references. All pages follow the format. 	<ul style="list-style-type: none"> All sources accurately documented in parenthetical references but a few. At least 5 appropriate sources documented properly. 	<ul style="list-style-type: none"> All sources accurately documented in parenthetical references, but many are not. Many pages do not follow the format. At least 3 appropriate sources documented properly and 2 non peer reviewed. 	<ul style="list-style-type: none"> Some sources are not accurately documented. Most pages do not follow the format.

Adopted From: mavink.com

E. RUBRICS FOR VIDEO CLIPS PRESENTATION

CRITERIA	4 (Exceeds Standards)	3 (Meets Standards)	2 (Near Standard)	1 (Below Standard)
• Content	<ul style="list-style-type: none"> The project has a clear focus related to the chosen topic and one or more of the following elements; reflects broad research and application of critical thinking skills; shows notable insight or understanding of the topic. Excellent evidence of student learning and efforts are reflected in student's project. 	<ul style="list-style-type: none"> The project has a clear focus related to the chosen topic and one or more of the following elements; reflects broad research and application of critical thinking skills; shows notable insight or understanding of the topic. Excellent evidence of student learning and efforts are reflected in student's project. 	<ul style="list-style-type: none"> There is focus that is maintained throughout the project. The project presents information in an accurate and organized manner that can be understood by the intended audience. Adequate evidenced of student learning and efforts are reflected in student's project. 	<ul style="list-style-type: none"> The project has a focus but may stray from it at time. There is an organizational structure, though it may not be carried through in a consistent manner. There may be factual errors or inconsistencies, but they are relatively minor. Less than adequate evidence of student learning and efforts are reflected in student's project.
• Organization	<ul style="list-style-type: none"> The content includes a clear statement of purpose or theme and is creative, compelling and clearly written. A rich variety of supporting information in the video contributes to the understanding of the project's main idea. Events and 	<ul style="list-style-type: none"> Information is presented as a connected theme with accurate, current supporting information that contributes to understanding that project's main idea. Details are logical and persuasive information is effectively used. The content includes a clear point of view with 	<ul style="list-style-type: none"> The content does not present a clearly stated theme, is vague, and some of the supporting information does not seem to fit the main idea or appears as a disconnected series of scenes with no unifying main idea. Includes few citations and few facts. 	<ul style="list-style-type: none"> Content lacks a central theme, clear point of view and logical sequence of information. Much of the supporting information is irrelevant to the overall message. The viewer is unsure what the message is because there is little persuasive information and only one or

	messages are presented in a logical order. Includes properly cited sources.	a progression of ideas and supporting information. Includes properly cited sources.		two facts about the topic are articulated. Information is incorrect, out of date, or incomplete. No citations included.
• Layout/Design	• Organization of presentation is excellent. Transitions add to the viewer's understanding of the topic. Titles are added to enhance understanding.	• Sequence of project components is clear and evident. Transitions provide easy movement from one scene to another. Titles are used and add to the video's flow.	• Adequate preparation and sequence is shown. Transitions are adequate. Titles are present.	• Either lack of preparation or illogical sequence. Transitions are choppy or distract the viewer. Titles are not present or distract from the overall video.
• Technical Elements	• The camera work is smooth and the focus is crisp. Sound and visual files are distortion free. Transitions are times for smooth movement between scenes. Titles are legible. These are few technical problems, and none of a serious nature.	• The camera work is generally smooth and the focus is usually crisp. Sound and visual files are mostly distortion free. Transitions provide a smooth movement between scenes. Titles are mostly legible. There are few technical problems.	• The camera work may be choppy or panning is too fast. Sound and visual files may have some distortion but it doesn't distract the viewer. There are some technical problems, but the viewer is able to follow the presentation.	• The camera work is choppy and the scenes are blurry or panning is too fast. Sound and visual files contain significant distortion. Transitions are awkward between scenes. Technical difficulties seriously interfere with the viewer's ability to see, hear, or understand content.
• Timeliness	• All project deadlines were met.	• Most project deadlines were met. Those that were late did not have significant impact on the finished project.	• Many project deadlines were not met, resulting in some impact on the finished project.	• Deadlines were regularly missed having a significant impact on the final project.

Adopted From: studylib.net

F. RUBRIC FOR THE INDIVIDUAL/ GROUP SHORT LESSON VIDEO PRESENTATION OF THE TOPIC

CRITERION	UNSATISFACTORY 1	FAIR 2	GOOD 3	EXCELLENT 4
MATHEMATICAL CONCEPTS	▪ Displays errors in knowledge of mathematical concepts	▪ Explains mathematical concepts without difficulty, but expresses ideas in rudimentary form	▪ Clearly articulates mathematical concepts	▪ Fully and eloquently articulates mathematical concepts ▪ Develops connections among mathematical concepts
MATHEMATICAL PROCEDURES	▪ Has difficulty explaining mathematical procedures. ▪ No examples or inappropriate	▪ Explains mathematical procedures without difficulty	▪ Explains mathematical procedures without difficulty and provides partial explanations for why mathematical procedures are valid or appropriate ▪ Appropriate choice of examples	▪ Explains mathematical procedures without difficulty and provides full explanations for why mathematical procedures are valid or appropriate ▪ Well-chosen and well-sequenced

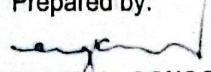
EXAMPLES	examples are given.	contain minor flaws	Appropriate use of mathematical terminology and symbols	examples.
MATHEMATICAL COMMUNICATION	<ul style="list-style-type: none"> Consistently inappropriate use of mathematical terminology and/or symbols The presentation has no clearly defined structure; or the structure is chaotic 	<ul style="list-style-type: none"> Adequate use of mathematical terminology and symbols; may contain minor flaws The presentation has a recognizable structure with an introduction and conclusion 	<ul style="list-style-type: none"> The presentation has a clearly defined structure with some clear transitions and a logical introduction and conclusions. Speaks clearly and effectively 	<ul style="list-style-type: none"> Sophisticated use of mathematical terminology and symbols The presentation has a clearly defined structure with elegant transitions and an effective introduction and conclusion. Speaks clearly and effectively in a sophisticated manner.
PRESENTATION STRUCTURE				
ORAL PRESENTATION	<ul style="list-style-type: none"> Does not speak clearly or demonstrated consistent grammatical errors Writing is illegible or not adequately used to record information 	<ul style="list-style-type: none"> Speaks clearly with no grammatical errors Writing is legible and grammatically correct 	<ul style="list-style-type: none"> Writing is legible and well-organized. 	<ul style="list-style-type: none"> Communicates clearly and effectively. Legible and grammatically correct.
WRITTEN COMMUNICATION				

10 REFERENCES

- Textbooks
- Adam, John A. *Mathematics in Nature: Modeling Patterns in Natural World*
 Aufmann, R., Lockwood, J., Nation, R., Clegg, D., Susanna, and Abad, E.P. (2018). *Mathematics in the Modern World: Philippine Edition*. Rex Bookstore, Inc., Manila, Philippines
 CENGAGE. Mathematics in the Modern World, Philippine Edition (2018).
 Daligdig, Romeo M. Mathematics in the Modern World (2019)
 Guillermo, Raelyn (2018). Mathematics in the Modern Nocon, R. & Nocon, E. Essential Mathematics for the Modern World.
 Jamison, R.e. (2020). *Learning the Language of Mathematics, Language and Learning Across Disciplines*, 4(1), 45-54. Retrieved from <https://wac.colostate.edu>
 Lane, David M. Introduction to Statistics (Online Edition)
 Manlulu, E. A. and Hipolito, L.M. (2019). *A Course Module for Mathematics in the Modern World, First Edition*. Rex Bookstore, Inc. Manila, Philippines
 Nocon, F.P., Torrecampo, J.T., Balacua, Ma. M.P. and Dagua, W.B. (Reprint, 2019). *General Statistics: Made Simple for Filipinos*. National Bookstore, Mandaluyong City, Philippines
 Rosen, Kenneth H. *Discrete Mathematics and Its Application*, 8th Edition
- Electronic
- <https://www.youtube.com/watch?v=64643Op6WJo>
<https://listverse.com/2013/04/21/10-beautiful-examples-of-symmetry-in-nature/>
<http://wgarysmith.com/>
<https://vimeo.com/9953368>
<https://www.invisionapp.com/inside-design/golden-ratio-designers/>
<http://mathworld.wolfram.com/Sel.html>
<https://www.youtube.com/watch?v=Ljy0e1yOu7g>
https://www.khanacademy.org/math/algebra-home/alg-functions/alg-combining-functions/v/sum-of-functions?utm_account=Grant&utm_campaignname=Grant_Math_Dynamic&gclid=CjwKCAjwqNngBRATEiwAkHm2BFLE8Y8zfUdMSy6TjIEE6a3WTdnbOmtybQY95otSRH74DNqKjIwtWhoCJuQAVD_BwE
<https://www.youtube.com/watch?v=JzCPff7eQ2w>
<https://www.youtube.com/watch?v=JzCPff7eQ2w>

<https://www.youtube.com/watch?v=h8EYEJ32oQ8>
https://www.khanacademy.org/math/on-seventh-grade-math/on-data-management-probability/on-data-management/e/reading_stem_and_leaf_plots?modal=1
<https://www.khanacademy.org/math/algebra-home/alg-functions>
<https://learn.saylor.org/mod/page/view.php?id=11808>
<https://www.mathsisfun.com/sets/sets-introduction.html>

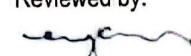
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