Assessment: Course Four Column

Courses (MATH) - Math

MATH 181:Calculus I

Course Outcomes	*Assessment Measures*	*Results*	*Actions*
Express algebraically - Express algebraically, graphically, and numerically the concept of a continuous function. **Course Outcome Status:** Active **Next Assessment:** 2020-2021 **Start Date:** 09/27/2016	**Homework -** Homework section 1.8 **Criterion:** Homework average of 70% or higher	**Reporting Period:** 2015-2016 **Criterion Met:** Yes Students did well on their homework assignments. The average grade on homework 1.8 was 91%. (09/28/2016)	
Concepts and terminology of limits through applications and examples - Demonstrate an understanding of the concepts and terminology of limits through applications and examples **Course Outcome Status:** Active **Next Assessment:** 2020-2021 **Start Date:** 09/27/2016	**Homework -** Homework section 1.5, 1.6, and 1.7 Quiz Chapter 1, and Final exam question #13. **Criterion:** Homework assignments average of 70% or higher Chapter 1 quiz average of 70% or higher Final exam question #13 70% or higher.	**Reporting Period:** 2015-2016 **Criterion Met:** Yes Students learned the concept well on this item. Student dedicated their time for the quiz ch 1 and very well prepared for ther Ch 1 exam. The average grades of the homework assignments 1.5, 1.6 , and 1.7 were 89, 92, and 93 % respectively. The average grades for the Chapter 1 quiz was 91% Question #13 on the final exam was 77.8% (09/28/2016)	
Compute the derivative of a continuous function using the definition - Compute the derivative of a continuous function using the definition, rules of differentiation, slopes of tangent lines, and describe it as a rate of change in a number of natural and physical phenomena **Course Outcome Status:** Active	**Homework -** Homework sections 2.1 – 2.9, Quiz Ch 2, Exam Ch 2, and Final exam question 11 and 12. **Criterion:** Homework average of 70% or higher Chapter 2 quiz average grade of 70% or higher Chapter 2 exam 70% or higher	**Reporting Period:** 2015-2016 **Criterion Met:** Yes Students did well on Chapter 2 homework assignments, Chapter 2 quiz, and the final exam qestions. However, students struggled on the Chapter 2 exam. Homework 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, and 2.9 average grades 84, 84, 82, 75, 72, 68, 67, 74, and 66% respectively. The overall average was 74.7%. Quiz Ch 2 average 72 %	**Action:** Students struggled to understand the concepts of implicite differentiation and rates of change in the natural and social sciences. Because of this, the average of their chapter 2 exam was lower than 70%. In the upcoming semester, I will give more homework problems and examples during class using My Math

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Next Assessment: 2020-2021 **Start Date:** 09/27/2016	Final exam question #11, 12 of 70% or higher	Exam Ch 2 average grade 63% The averages for the final exam #11 and 12 were 83.3 and 94.4 % respectively (09/28/2016)	Lab. (09/28/2016)
Apply basic applications of beginning calculus - Apply basic applications of beginning calculus including but not limited to optimization, related rates, work, areas, and distances **Course Outcome Status:** Active **Next Assessment:** 2020-2021 **Start Date:** 09/27/2016	**Homework -** Homework 5.2, 5.3, and 5.4 Final exam question #8 and 9. **Criterion:** Homework average of 70% or higher Final exam qeustion #8 and 9 70 % of higher.	**Reporting Period:** 2015-2016 **Criterion Met:** No Overall achievement was 47% Homework 5.2, 5.3, and 5.4 avaerage grades were 59, 48, and 34 % respectively. The averages for the final exam question #8 and 9 were 66.7 and 94.4 % respectively (09/28/2016)	**Action:** I proposed a new text book with math software to the math department to assist students with understanding difficult concepts. This will give students more practice with homework assignments and increase their ability to solve the optimization, work, areas and distances problems. (09/28/2016)
Compute basic integrals using Riemann sums - Compute basic integrals using Riemann sums as well as the Fundamental Theorem of Calculus **Course Outcome Status:** Active **Next Assessment:** 2020-2021 **Start Date:** 09/27/2016	**Homework -** Homework 4.1 and 4.3, Chapter 4 quiz, Find exam question 3, 4, 5 and 6. **Criterion:** Homework average of 70% or higher Quiz Ch 2 average grade of 70 % or higher Final exam #3, 4, 5, and 6 of 70% or higher	**Reporting Period:** 2015-2016 **Criterion Met:** Yes Overall achievement was satisfactory Homework 4.1 and 4.3 average grades were 57 and 86 % respectively. The overall averge is 71.5% Quiz Ch 4 average was 70% The achievement for the final exam questions #3, 4, 5 and 6 were 83.3, 61.1, 83.3, 72.2% respectively. (09/28/2016)	
Express algebraically, graphically, and numerically - Express algebraically, graphically, and numerically the separate concepts of definite and indefinite integration and their connection to differentiation. **Course Outcome Status:** Active **Next Assessment:** 2020-2021 **Start Date:** 09/27/2016	**Homework -** Homework 4.2, 4.4, 4.5 Final exam questions 29, 30, 31, and 32. **Criterion:** Homework average of 70% or higher Final exam questions #29, 30, 31, 32 of 70 % or higher.	**Reporting Period:** 2015-2016 **Criterion Met:** Yes Overall achievement was satisfactory. Homework 4.2, 4.4, 4.5 average grades were 69, 80, and 73 % respectively. The overall average was 74%. The achivement for the final exam 29, 30, 31, and 32 were 94.4, 88.9, 66.7, and 88.9% (09/28/2016)	**Action:** A general action plan for the upcoming semester for Math 181 is to propose a new calculus text book with new course management software (the Pearson product My Math Lab) to the department for a better student learning experience for calculus sequence courses including Calculus I, II, and III. The new course management software would allow students to be able to do unlimited self-practice on homework assignments. The department approved the change to the new text book with the proposed

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			materials starting from Fall 2016. The identified students' weaknesses were in topics of learning outcomes #4 Applying basic applications of beginning calculus including but not limited to optimization, related rates, work, areas and distances and Learning outcome #3 Compute the derivative of a continuous function using the definition, rules of differentiation, slopes of tangent lines, and describe it as a rate of change in a number of natural and physical phenomena With the new textbook and course management software, students should be able to do better self learning. For upcoming semesters, I would also focus on putting more class time and assigning homework problems for students through comprehension of the relative sections for the learning outcomes #3 and 4. (09/28/2016)