LOS MEDANOS COLLEGE

ARTICULATION AGREEMENT **DATE DRAFTED**: November 18, 2019

VALID ACADEMIC YEARS: 2019-20 & 2020-21

LMC COURSE: COMSC-122 "Programming Concepts & Methodologies I"

HIGH SCHOOL COURSE: AP Computer Science A

School: Antioch High School
Address: 700 W. 18th St Antioch, CA 94509

A. **COLLEGE COURSE DESCRIPTION:** This course introduces the discipline of computer science with practical hands-on problem solving using a "high level" computer programming language. The course will include basic syntax and semantics of a "high level: language, variables, types, expressions, assignment, basic computation, simple I/O conditional and iterative control structures, functions, and parameter passing, structured decomposition, program design, programming style, algorithms, and problem solving strategies, overview of programming languages, binding, visibility, scoping, and lifetime management.

B. **UNITS: 3**

C. **PRE-REQUISITES: NA**

D. **REQUIRED CONTENT FOR ARTICULATION:**

AP® Computer Science A

The course is approved by the College Board as an authorized AP Computer Science A course. The course will consist of video lectures, instructor support, daily programming exercises, longer coding assignments, and regular quizzes and exams. Students will also participate in online discussion forums. By the end of the course, students will be well prepared to take the APR Computer Science A exam.

Course Snapshot

E. The course is broken up into 8 units of study with a final unit dedicated to AP Exam preparation. Each lesson includes practice exercises, including shorter coding problems. Well over 20 hours of instructional time are spent in hands-on coding using the course coding exercises, lab assignments and AP labs. Students participate regularly in a moderated discussion forum that provides support for lesson material and also introduces discussions of the ethical implications of programming, including copyright law, software piracy, intellectual property, privacy, and network reliability.

E. REQUIRED COMPETENCIES (PERFORMANCE OBJECTIVES) FOR ARTICULATION

Computer science embraces problem solving, hardware, algorithms and perspectives that help people utilize computers to solve real-world problems in everyday life. The AP Computer Science A course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design. These techniques represent proven approaches for development solutions that can scale up from small, simple problems to large, complex problems.

By the end of this course, students will be able to:

- Design and implement computer-based solutions to problems.
- Use and implement commonly used algorithms and data structures.
- Develop and select appropriate algorithms and data structures to solve new problems.
- Write solutions fluently an object-oriented paradigm
- Write, run, test and debug solutions in the Java programming language
- Read and understand programs consisting of several classes and interacting objects
- Read and understand a description of the design and development process
- Understand the ethical and social implications of computer use.

F. PROCEDURES AND/OR CRITERIA FOR COURSE ARTICULATION:

Assessment and Grading

Students will be evaluated using the standard grading scale for Antioch Unified School District. They will be evaluated based on projects, exams, quizzes, assignments, and class participation. The following is a breakdown of the standard grading scale.

ASSESSMENT AND GRADING:		
Projects – 40%		
Tests and Quizzes – 20%		
Assignments – 30%		
Performance/ class participation (attendance)– 10%		
A	90-100%	Exceeds expectation; eligible for college credit
B	80-89%	Meets business standards and expectations; eligible for college credit
C	70-79%	Meets basic standards and expectations, **ineligible** for college credit
D	60-69%	Passing grade but does not meet some standards, **ineligible** for college credit
F	0-59%	Failing, does not meet minimum standards, **ineligible** for course credit and college credit

LMC Articulation

Passing the class with a B and scoring 80% or higher on the midterm and final exams will grant you college credits at Los Medanos College for the course COMSC 122, Programming Concepts and Methodologies I.

G. PROCEDURES AND/OR CRITERIA FOR COURSE ARTICULATION:

1. Complete the AP Computer Science A course at Antioch High School with a grade of "B" or better.
2. Receive a "B" or better on the agreed upon college/high school final exam procedure.
3. Be recommended for credit by the high school teacher.
4. Apply for admission at Los Medanos College.
5. Register for CATEMA for electronic submission of college **within the academic year in which credit was earned.**
6. Upon completion of the above, the student will receive on his/her LMC and CCCCD (California Community College District) transcripts the units of credit for LMC's COMSC-122 "Programming Concepts & Methodologies I"
7. College transcripts will reflect the **FINAL EXAM GRADE** earned and will be notated as *Credit by Exam.

H. TEXTBOOKS OR OTHER SUPPORTING MATERIALS

This course will reference a free online textbook.
Eck, David J. "Introduction to Programming Using Java." Hobart and Williams Smith Colleges, 17 May

ARTICULATION AGREEMENT

DATE DRAFTED: November 18, 2019
VALID ACADEMIC YEARS: 2019-20 & 2020-21

LMC COURSE: COMSC-122 "Programming Concepts & Methodologies I"

HIGH SCHOOL COURSE: AP Computer Science A

School: Antioch High School
Address: 700 W. 18th St Antioch, CA 94509

COLLEGE SIGNATURES

Nancy Ybarra Date
LMC Interim Vice President of Instruction

Ryan Pedersen Date
LMC Dean of Mathematics & Sciences

Louie Giambattista Date
LMC Computer Science Department Chair

HIGH SCHOOL/ROP/DISTRICT SIGNATURES

Louie Rocha Date
Principal, Antioch High School

Mike Santos Date
AUSD Director of Program Improvement

Christine Ibarra Date
AUSD Associate Superintendent, Educational Services

Amy Bettencourt Date
AUSD Director of Instructional Support

Kent McCutcheon Date
AHS Teacher