



**trios COLLEGE**  
*BUSINESS ♦ TECHNOLOGY ♦ HEALTHCARE*

---

**Name:**

**Date:**

---

# **C++ Programming Final Project**

---

**Faculty of  
Video Game Design & Development +  
Internship**



---

## **C++ Programming**

### **Video Game Design & Development + Internship**

---

**Evaluation: Poker Program**

SECTION	SCORE
Problem Description, Analysis and GDD	/10
Solution Design, UML and TDD	/15
Poker hand evaluation program	/65
Teammate Evaluation	/10
TOTAL	/100



---

## **C++ Programming**

### **Video Game Design & Development + Internship**

---

#### **Poker**

**100 Marks**

Poker is a type of card game in which players bet on the value of the card combination ("hand") in their possession, by placing a bet into a central pot. The winner is the one who holds the hand with the highest value according to an established hand rankings hierarchy, or otherwise the player who remains in the hand after all others have folded (the player who makes an un-called bet), and wins the current pot. Various forms of poker are popular: some where the player uses cards that are exclusively his or hers (Draw Poker, 7 Card Stud) and other forms that have community cards which all players can use to build the best hand in combination with their own cards (Texas Hold 'em, Omaha High)

#### **Goal:**

Collect and research the rules for poker and develop a text-based poker hand evaluation program.

- The program will allow the user to select:
  - Draw Poker,
  - 7 Card Stud,
  - Texas Hold 'em
  - Omaha High.
- The user then specifies how many players are involved in the deal. The program will check to see if the number of players is between two and the maximum allowed, based on the size of the deck and the number of cards that are required by each player and the dealer (community cards). If an invalid number is entered, the program will inform the user and cancel the deal.
- For each player, the program will determine which combination of cards produce the highest valued hand
- The program will compare the highest hands for each player and determine the winners for the deal.
- The program will display each player's highest valued hand and will determine and point out the winning hands.
- The program will display an English description of each hand displayed.



---

## **C++ Programming**

### **Video Game Design & Development + Internship**

---

#### **Objectives:**

1. Research and document the rules for constructing the hands for and evaluation.
2. Produce a GDD that describes the functionality of the program.
3. Analyze the problem with respect to the component classes. Document the classes and their relationships in a TDD, including a UML Class Diagram.
4. Create a program that meets the specification as described in the GDD and structured as described in the TDD.

#### **Deliverables:**

1. GDD
2. TDD
3. The documented and properly formatted source code for a working program that meets the GDD and TDD.

On Day 10 of the project (Day 20 of the class), a draft TDD and UML class diagram will be submitted for approval. Work on coding will not begin until these are approved by the instructor.

This project will not include a presentation, but there will be a demonstration for classmates on other teams.

#### **Scope for Bonuses:**

If a team meets all the points set out in the Goals section of this document, it may add extra functionality for bonus marks:

1. Implement distinctly different hand evaluation algorithms and permit the user to choose which evaluation method to use.
2. The program stops at each point in the play (ex: pre-flop, turn, river) and calculates the odds of winning for each player (including split pots).
3. The user can play a hand interactively, allowing for folds. In this case, the computer hands will play out the hand.
4. Implement betting.
5. Implement AI for the computer players that allow them to make betting decisions (fold, check, call and raise).



## C++ Programming

### Video Game Design & Development + Internship

Final Project Timeline:

WEEK 3					
DAY Criteria	DAY 11	DAY 12	DAY 13	DAY 14	DAY 15
Completion	Start Collecting Poker Rules	Start Documenting the Rules		Start Designing the Program Functionality	

WEEK 4					
DAY Criteria	DAY 16	DAY 17	DAY 18	DAY 19	DAY 20
Completion	Start Analyzing the Classes				Submit a proposed TDD and UML Class Diagram for Approval

WEEK 5					
DAY Criteria	DAY 21	DAY 22	DAY 23	DAY 24	DAY 25
Completion	Start Coding				



---

## C++ Programming

### Video Game Design & Development + Internship

---

WEEK 6					
DAY Criteria	DAY 26	DAY 27	DAY 28	DAY 29	DAY 30
Completion					
WEEK 7					
DAY Criteria	DAY 31	DAY 32	DAY 33	DAY 34	DAY 35
Completion					
WEEK 8					
DAY Criteria	DAY 36	DAY 37	DAY 38	DAY 39	DAY 40
Completion					Demo and Deliverables Submission