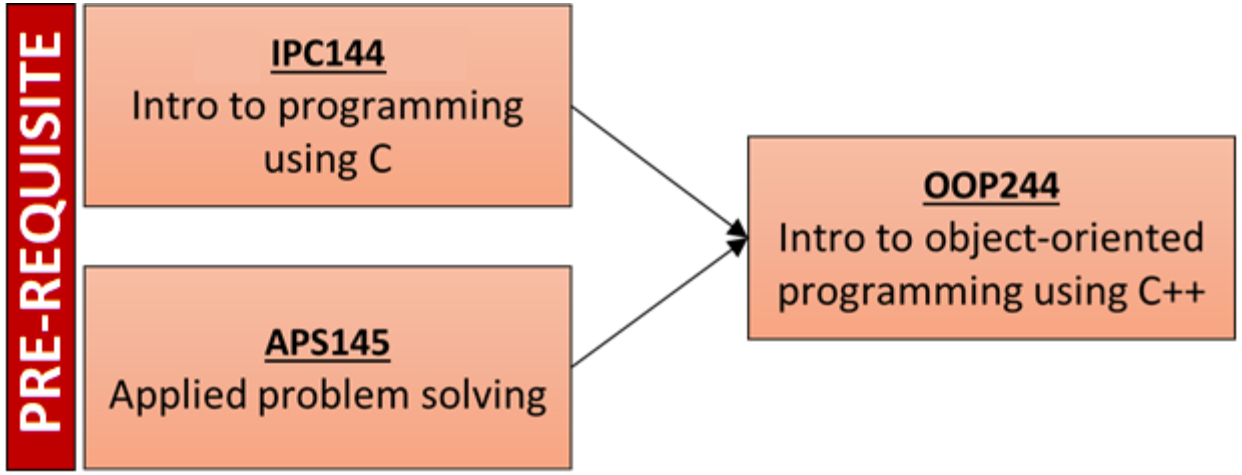
APS145
Applied Problem Solving & Computational Thinking

Course Introduction

Problem Solving and Computational Thinking

- **Prerequisite** course with IPC144 required for entry into OOP244



- **Purpose**: Designed to bring out and build upon your logic & problem solving (computational thinking) abilities
- **Programming requires a different mindset** and these labs will put you on the road to **thinking like a programmer** (without coding)

Course Grading and Promotion Policy

Course Breakdown:

Workshops:	
• Individual & Group work (minimum 8 workshops)	35%
• Solution Presentation (minimum 1)	10%
Quizzes (min. 3, Q1:10% | Q2:15% | Q3:20%)	45%
Assignments (Vretta Math Component **$12**)	10%
	100%

1. Successfully complete a minimum of 8 workshops and a minimum of 1 presentation
2. Achieve a minimum average of 50% on all quizzes combined
3. Successfully complete all assignments:
   – Online Vretta numeracy module (must earn the certificate)
4. Achieve a minimum overall course average of 50%

Workshops & Presentation (45%)

Workshops (35%)

- There will be a total of **10 workshops** this term
- You must **attend** and **complete** a **minimum of 8**
- If you complete more than 8 workshops, your mark will be calculated based on your **BEST 8**
- **No make-up workshops will be available** – it is up to you to be sure to complete a minimum of 8

Presentation (video) (10%)

- Each student **MUST present at least 1 (one) solution**
- If more than 1 presentation is done, the best grade will be applied

Presentation (10%)

- Each student must do at least one video presentation
- Target 5 minutes in length
- Review the posted **grading rubric** carefully
  - Must properly identify the audience and use non-technical language
  - **Majority of the grade** is based on a demonstration of the envisioned solution (mock screenshots of the application or a wireframe). **A very low grade will be assigned if this component is weak or missing**.
  - Must include **most of the major workflows** (scenario's) to convincingly sell your solution
- NEVER explain HOW things work – but DO demonstrate WHAT the solution does.
- NEVER include pseudo code, flowcharts, programming source code etc. Think of this as a commercial advertisement, but directed at a specific/targeted audience

A Typical Workshop Class

1. Class time will consist of the following:
   - Introduction to the NEXT week's workshop (individual parts are assigned)
   - Provide mini-samples of logic in pseudo code and flowchart forms (this can vary from week to week and will be minimal as the course progresses)
   - Most of the time will be spent for group work on the CURRENT assigned workshop solution which is **due by the end of class**

NOTE: See grading rubric for workshop expectations

2. Presentation
   - One member of each sub-group will create a video presentation (**due in 6-days by 23:59**)

NOTE: See grading rubric for presentation expectations

Groups

- Each workshop is broken into an **individual part** (worth 40%) and a **group solution** part (worth 60%)
- If the **individual part is submitted late or not done at all**, NO MARKS will be given for the entire workshop and it will not count towards the minimum 8 completed workshops required to pass the course
- You will be assigned to a group at the beginning of the semester and at least once more after the study week (frequency will depend on your professor)
- Each group will have (ideally) 6 members, each of whom will be assigned a member number.
  - Note: each group will be divided into two sub-groups that will work independently from one another.
- Each workshop will detail the duties assigned to each member of the group based on their assigned member number in the group.

Sample Workshop Duties

Sub-Group 1 (pseudo code)				
Task	**Subtask**	**Member(s)**	**Marks**	**Comments**
Pseudocode	Logic 1	**1**	40%	Members are graded individually
	Logic 2	**2**	40%	
	Logic 3	**3**	40%	
	Group Solution	**1-3**	60%	Eligible members get same mark
Sub-Group 2 (flowchart)				
Task	**Subtask**	**Member(s)**	**Marks**	**Comments**
FlowChart	Logic 1	**4**	40%	Members are graded individually
	Logic 2	**5**	40%	
	Logic 3	**6**	40%	
	Group Solution	**4-6**	60%	Eligible members get same mark
Video	Presentation	**1 or 4**	100%	Members rotate weekly

Quizzes (45%)

- There will be three (3) quizzes this term
- Quizzes will be done on week's: **5**, **9**, and **14**
- **Q#1**: 10%, **Q#2**: 15%, and **Q#3**: 20% of the term mark
- **No make-up quizzes will be available**
- Quizzes will be done during class time on paper!
- Class will resume after the quiz (continue with the normal routine: group work solution for the current workshop)

Assignments (10%)

- You will need to successfully complete an online numeracy module to be done on your own time
- This is an **online module** hosted by Vretta (publisher)
- You **must successfully pass with a certificate by the end of WEEK #8** (*failure to do so will result in the failing of the course*)
- Each student will have a customized experience and generally will take no longer than 3 hours of your time
- The material you focus on will be based on a pre-assessment
- Areas of weaknesses will be concentrated on with extra instruction/practice
- Note there is a **$12 registration charge** to use the Vretta service