# CS 300 Pseudocode Document

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**M5-3**

Procedure LoadAndValidateCourses(filename)

Open filename for reading

If file cannot be opened then

Print "Error: File not found."

Exit

EndIf

Initialize courseMap as an empty map

While not end of file

Read line

Parse line into courseNumber, courseTitle, and prerequisites

If courseNumber or courseTitle is missing then

Print "Error: Missing course number or title."

Continue

EndIf

Add courseNumber and courseTitle to courseMap

For each prerequisite in prerequisites

If prerequisite is not in courseMap then

Print "Error: Prerequisite course not found."

EndIf

Next

EndWhile

Close file

EndProcedure

Procedure CreateAndStoreCoursesInTree(courseMap)

Initialize coursesTree as an empty tree

For each courseNumber, courseDetails in courseMap

Create a CourseNode with courseDetails

For each prerequisite in courseDetails.prerequisites

Find prerequisite CourseNode in coursesTree

Add prerequisite CourseNode as a child of CourseNode

Next

Add CourseNode to coursesTree if not already added

Next

EndProcedure

Procedure PrintCourseInfo(courseNode, indent = 0)

Print indent spaces followed by courseNode.courseNumber and courseNode.courseTitle

If courseNode has prerequisites then

For each child in courseNode.prerequisites

PrintCourseInfo(child, indent + 2)

Next

EndIf

EndProcedure

Procedure PrintAllCourses(coursesTree)

For each courseNode in coursesTree

PrintCourseInfo(courseNode)

Next

EndProcedure