### **Pseudocode for Loading and Managing Course Data**

#### **1. Define Data Structures**

1. **Course**
   * **Attributes**:
     + courseNumber: string
     + title: string
     + prerequisites: list of strings
2. **Vector of Course**
   * **Description**: A list to store multiple Course objects.

#### **2. Function to Open and Read File**

1. **Function loadCoursesFromFile(filePath)**
   * Open the file located at filePath for reading
   * **If file cannot be opened**:
     + Print "Error: Cannot open file."
     + Exit function
   * Initialize an empty vector courseVector
   * **For each line in the file**:
     + Read the line
     + Split the line into tokens using a delimiter (e.g., comma)
     + **If the number of tokens is less than 2**:
       - Print "Error: Invalid format on line" and the line
       - Continue to the next line
     + Extract courseNumber, title, and prerequisites from tokens
     + **For each prerequisite in the list of prerequisites**:
       - **If the prerequisite is not in courseVector**:
         * Print "Error: Prerequisite course not found on line" and the line
         * Continue to the next line
     + Create a Course object with courseNumber, title, and prerequisites
     + Add the Course object to courseVector
   * Close the file
   * Return courseVector

#### **3. Function to Create and Store Course Objects**

1. **Function processCourseData(courseVector)**
   * **For each line in the course data**:
     + Create a new Course object with data from the line
     + Store the Course object in courseVector
   * Return courseVector

#### **4. Function to Search and Print Course Information**

1. **Function printCourseInfo(courseVector, searchCourseNumber)**
   * **For each Course in courseVector**:
     + **If the Course's courseNumber matches searchCourseNumber**:
       - Print "Course Number: " and Course.courseNumber
       - Print "Title: " and Course.title
       - Print "Prerequisites: " and the list of Course.prerequisites
       - Exit function
   * **If no matching course is found**:
     + Print "Course not found.

### **Example Workflow**

1. **Load Courses from File**:
   * Call loadCoursesFromFile("courses.txt")
   * This function reads each line, checks the format, parses course data, and stores it in courseVector.
2. **Process Course Data**:
   * Call processCourseData(courseVector)
   * This function prepares and organizes the course data in courseVector.
3. **Print Course Information**:
   * Call printCourseInfo(courseVector, "CS101")
   * This function searches for the course with number "CS101" and prints its details and prerequisites.

### **Error Checking**

1. **File Opening**: Ensure the file is accessible.
2. **Line Format**: Check each line for at least two parameters.
3. **Prerequisite Validation**: Ensure all listed prerequisites are courses within the file.