Helpful Resources and Links for your coursework

Microsoft Resources

1. To get Word, PowerPoint, Excel and all other useful Microsoft Resources,
   Username: BITS email-ID
   Password: Wi-Fi Username
2. Microsoft Learn
3. Microsoft Imagine Cup
4. Become a Microsoft Learn Student Ambassador

Curated by BITS Students, Teachers and Alumni!

1. Uni Notes is an excellent resource created by dedicated authors, offering comprehensive study materials for various subjects. It's an open-source initiative and not affiliated with any club, making this a valuable platform for students seeking accessible and quality educational content.
2. https://www.akshansh.net/notes.html
3. Dr Shazia's Classroom- Microprocessors
4. Jagadish Nayak- Microprocessors and Digital Design
5. Dr Priti Bajpai-Math 1 and 2

(Note: Students should keep in mind that the resources below may not cover all topics in the course, but are good for reference and practice of key concepts)

1. **Programming Basics and Practice:**

a) GeeksforGeeks: Offers tutorials and practice problems on a wide range of computer science topics, including programming, data structures, and algorithms.

b) HackerRank: Provides coding challenges and competitions to improve your coding skills.

c) LeetCode: Offers coding problems and contests to prepare for technical interviews.

2. Mathematics:

a) Khan Academy: Provides free lessons on mathematics topics, including discrete mathematics, calculus, and linear algebra.
b) MIT OpenCourseWare: Offers free online courses and lecture notes, including mathematics courses.

3. Data Structures and Algorithms:

a) Coursera's "Algorithms" by Princeton University: A comprehensive online course on algorithms.
b) GeeksforGeeks - Data Structures: Detailed tutorials on various data structures.

4. Advanced Programming:

a) Learn C++: An interactive tutorial for learning C++.

b) Python.org: Official website for Python, with documentation and tutorials.

5. Computer Architecture and Organization:

a) Computer Organization and Design: A classic textbook on computer organization and design.
b) Nand2Tetris: A project-based course that guides you through building a computer from scratch.

6. Database Management Systems (DBMS):

a) W3Schools - SQL Tutorial: Provides a comprehensive SQL tutorial.

7. Operating Systems:

a) Coursera's "Operating Systems" by Stanford University: An online course covering operating systems.

8. Software Engineering:

a) Design Patterns - Gang of Four: Information about the classic book on design patterns.

9. Computer Networks:

a) Coursera's "Computer Networks" by University of Washington: A specialization covering computer networks.

10. Machine Learning and Artificial Intelligence:

a) Coursera's "Machine Learning" by Stanford University: An online course on machine learning.

b) fast.ai: Offers practical deep learning courses and resources.

11. General Coding Practice and Competitive Programming

a) Codeforces: A competitive programming platform with coding contests and problems.

b) AtCoder: Another platform for competitive programming contests.

YouTube Channels for various topics

a) Jenny's Lectures CS IT
b) Abdul Bari
c) Gate Smashers
d) Apna College

e) **Kunal Kushwaha**
f) **Bharat Acharya Education**
g) **Code with Harry**
h) **Trev Tutor**
i) **EEVblog**
j) **The Organic Chemistry Tutor**

I. Full Stack Web Development

Documentation:
MDN Web Docs: Mozilla's developer documentation for web technologies.

Online Courses:

1. Coursera - Full Stack Web Development Specialization: Offers a comprehensive program covering both front-end and back-end technologies. Coursera Full Stack Web Development Specialization

2. edX - Full Stack Web Developer: A course series by edX that covers HTML, CSS, JavaScript, Python, and more. edX Full Stack Web Developer

3. Udacity - Full Stack Web Developer Nanodegree: A hands-on program that covers front-end and back-end technologies. Udacity Full Stack Web Developer Nanodegree

Online Platforms:

1. FreeCodeCamp: A free platform with interactive coding challenges and projects. FreeCodeCamp

2. Codecademy: Offers interactive courses on HTML, CSS, JavaScript, and more. Codecademy

Books:

1. "JavaScript: The Good Parts" by Douglas Crockford: An essential book for mastering JavaScript.

2. "Eloquent JavaScript" by Marijn Haverbeke: A beginner-friendly book to learn JavaScript.

3. "Node.js Design Patterns" by Mario Casciaro: Covers Node.js and server-side development.

YouTube Channels:

1. The Net Ninja: Offers a variety of web development tutorials, including full-stack development. The Net Ninja YouTube

2. Traversy Media: Features tutorials on HTML, CSS, JavaScript, and various frameworks. Traversy Media YouTube

II. **Android Development**

Online Courses:

1. Udacity - Android Developer Nanodegree: A comprehensive program covering Android app development, including Kotlin programming, building user interfaces, and connecting to web services. Udacity Android Developer Nanodegree

2. Coursera - Android App Development Specialization: Offers a series of courses covering Android app development with Java or Kotlin. Coursera Android App Development Specialization

3. Google's Android Developer Training: A series of free courses and resources provided by Google to help you learn Android app development. Google's Android Developer Training

Books:

1. "Head First Android Development" by Dawn Griffiths and David Griffiths: A beginner-friendly book that covers Android app development using Java.

2. "Android Programming: The Big Nerd Ranch Guide" by Bill Phillips and Chris Stewart: Offers hands-on examples and practical guidance for Android app development.

YouTube Channels:

1. CodeWithChris: Provides beginner-friendly tutorials on Android app development, including Swift and Kotlin. CodeWithChris YouTube

2. Coding in Flow: Offers in-depth Android app development tutorials with a focus on Kotlin. Coding in Flow YouTube

Online Platforms:

1. Android Developers Official Website: Offers official documentation, code samples, and resources for Android app development. Android Developers

2. Udemy: Provides a wide range of Android app development courses, both free and paid. Udemy Android Courses

Android Studio:
Android Studio is the official Integrated Development Environment (IDE) for Android app development. Download and use it to create, test, and debug Android applications. Android Studio

III. Data Science, AI and ML

Online Courses:

1. Coursera - Machine Learning by Andrew Ng: An excellent introduction to machine learning concepts and algorithms. Machine Learning on Coursera

2. Coursera - Deep Learning Specialization: A series of courses covering deep learning and neural networks. Deep Learning Specialization

3. edX - Microsoft's Data Science and Machine Learning Program: Covers data science, AI, and ML using Microsoft tools. Microsoft Data Science Program on edX

4. Udacity - AI Programming with Python Nanodegree: Focuses on AI and machine learning using Python. Udacity AI Programming Nanodegree

Books:

1. "Introduction to Artificial Intelligence" by Wolfgang Ertel: A comprehensive introduction to AI concepts.

2. "Python Machine Learning" by Sebastian Raschka and Vahid Mirjalili: An excellent resource for machine learning with Python.

3. "Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow" by Aurélien Géron: Provides practical examples and hands-on exercises.

YouTube Channels:

1. 3Blue1Brown: Offers intuitive explanations of machine learning concepts with visualizations. 3Blue1Brown YouTube

2. sentdex: Provides tutorials on AI and ML with a focus on practical applications. sentdex YouTube

Online Platforms:

1. Kaggle: A community-driven platform for data science and machine learning competitions, tutorials, and datasets. Kaggle

2. DataCamp: Offers a wide range of courses on data science, AI, and ML. DataCamp

Documentation:
TensorFlow and PyTorch: Popular deep learning libraries for AI and ML. Explore their official documentation and tutorials.

TensorFlow
PyTorch

IV. Game Development

Online Courses:

1. Udemy - Complete C# Unity Game Developer 2D: Covers game development with Unity and C# for 2D games. Udemy Course

2. Coursera - Game Design and Development Specialization: Offers a series of courses on game design and development. Coursera Specialization

3. edX - Introduction to Game Development: Provides a foundational understanding of game development. edX Course

Books:

1. "Unity in Action: Multiplatform Game Development in C#" by Joe Hocking: A practical guide to Unity game development with C#.

2. "Beginning C++ Through Game Programming" by Michael Dawson: Ideal for learning C++ for game development.

3. "Game Programming Patterns" by Robert Nystrom: Focuses on common game development patterns and techniques.

YouTube Channels:

1. Brackeys: Offers Unity game development tutorials, including 2D and 3D games. Brackeys YouTube

2. GameFromScratch: Provides tutorials on various game engines and game development topics. GameFromScratch YouTube

Online Platforms:

1. Unity Learn : Official tutorials, projects, and courses from Unity. Unity Learn

2. Godot Engine Documentation: Resources and tutorials for the open-source Godot game engine. Godot Engine Documentation

Game Engines:

1. Unity: A popular game engine with a vast community and resources. Unity

2. Godot Engine: An open-source, user-friendly game engine. Godot Engine

Game Development Communities:

1. Unity Community: Connect with other Unity developers and access resources. Unity Community

2. Godot Community: Engage with the Godot game development community for support and learning. Godot Community

Coding Practice for all career paths:

1. LeetCode: Offers coding challenges and contests to improve your problem-solving skills. LeetCode

2. HackerRank: Provides coding challenges and competitions across various domains. HackerRank

Version Control for all career paths:

Git Official Documentation: Learn Git and GitHub for collaborative development. Git Official Documentation

Stack Overflow for all career paths:

An invaluable resource for finding answers to coding questions and troubleshooting. https://stackoverflow.com/