PROGRAMMA di INFORMATICA A.S. 2023/2024 - INDIRIZZO LICEO SCIENTIFICO
Opzione SCIENZE APPLICATE 2 E

Unità didattica di apprendimento	CONOSCENZE
AL-UDA 1 Algoritmi / Algorithm design and problem-solving	SDLC, Analysis - Decomposition of a problem, Design - Structure diagrams and a class activity. Coding - Inputs, Processes, Ouputs and Storage and class activities; Iterative testing Testing . types of data used for testing (Normal, abnormal, Extreme, Boundary) Design tools, flowchart symbols, sequence flowchart, selection (IF, Multiple IFs, Nested IFs, CASE, logical operators), FOR LOOPS, WHILE LOOPS, REPEAT......UNTIL LOOPS Pseudocode (INPUT e OUTPUT, assignments, STRING MANIPULATION FUNCTIONS, Arithmetic and logical operations, IF THEN ELSE END IF, if multipli, if annidati, CASE, FOR loop, WHILE looop, REPEAT UNTIL loop).

Unità didattica di apprendimento	CONOSCENZE
AL-UDA 2 Introduzione alla programmazione / Programming part 1	Pseudocode (INPUT, OUTPUT, FOR.....NEXT, IF...THEN...ELSE....END IF, arithmetic operations) and Python (INPUT, PRINT, FOR.....RANGE, IF...ELSE...., arithmetic operations) While Loop in Python, While True Loop in Python How a CASE statement is implemented in Python (If/elif....../else); Pseudocode (String manipulation: LENGTH, SUBSTRING, analysing a string char by char using a FOR loop); Python (len(), indexing and slicing, analysing a string char by char using a FOR loop: first method "for (char variable) in string"; second method "for (index variable) in range(0,string length)") Pseudocode: Library routines (ROUND and RANDOM); Python: Library routines (round() and random.randint())

Unità didattica di apprendimento	CONOSCENZE
RC-SP-UDA 5 Internet ed il World Wide Web / The internet and its uses part 1	Internet ed il World Wide Web, URL, HTTP/HTTPS, Purpose of a web browser, Cookies (Session and Persistent)
RC-SP-UDA 6	Valuta digitale, Blockchain

La valuta digitale / The internet and its uses part 2	
RC-SP-UDA 7 Cybersecurity / The internet and its uses part 3	Cyber Threats (Brute-Force Attack, Data Interception, DDoS, Hacking) and Cyber Security Solutions Tipi di Malware e soluzioni di cybersecurity contro il malware in genere PHISHING, PHARMING e SOCIAL ENGINEERING

Unità didattica di apprendimento	CONOSCENZE
ACS-CD-UDA 3 Sistemi automatizzati, Robotica e Intelligenza Artificiale / Automated and emerging technologies	Automated system, Schemes for Monitoring and Controlling, Sensors Automation in context, Robotics, AI, ML, Expert systems. Robots in context

LUOGO e DATA
Palermo, 07/06/2024

FIRMA DOCENTE