



EMEA

COLLEGE OF ARTS AND SCIENCE, Kondotty
Aided by Govt. of Kerala, Affiliate to the University of Calicut
Re-accredited with "A" Grade by NAAC

P O Kumminiparamba – 673638
Malappuram Dist. Kerala-India

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ANNUAL QUALITY ASSURANCE REPORT

2023-24

EMEA COLLEGE OF ARTS AND SCIENCE, KONDOTTY

CRITERIA II

Students Performance & Learning Outcomes



EMEA

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2.6.2 - Attainment of Programme outcomes and course outcomes are evaluated by the institution.

Supporting Documents - Specimen

- Course Attainment
- Benchmark
- Course Outcome
- CO-PO Mapping
- Direct Assessment
- Mark Entry
- Setting
- Indirect Mapping
- Attain Report
- OBE Report



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MALAPPURAM DT. 673 638



Course Attainment

Course Attainment Haulath k 805 [View Summary](#)

BCS8813
Computer networks
Course Type: Theory
Academic Year: 2023-24
Batch: B.Sc CS- 2021-22 Term: Sixth
Course Attainment: 1.56

Bcs4804
Database Management System
Course Type: Theory
Academic Year: 2023-24
Batch: B.Sc CS- 2022-25 Term: Fourth
Course Attainment: Not Calculated

BCS5810
Software Engineering
Course Type: Theory
Academic Year: 2024-25
Batch: B.Sc CS- 2022-25 Term: Fifth
Course Attainment: Not Calculated

All
python programming
Course Type: Theory
Academic Year: 2024-25

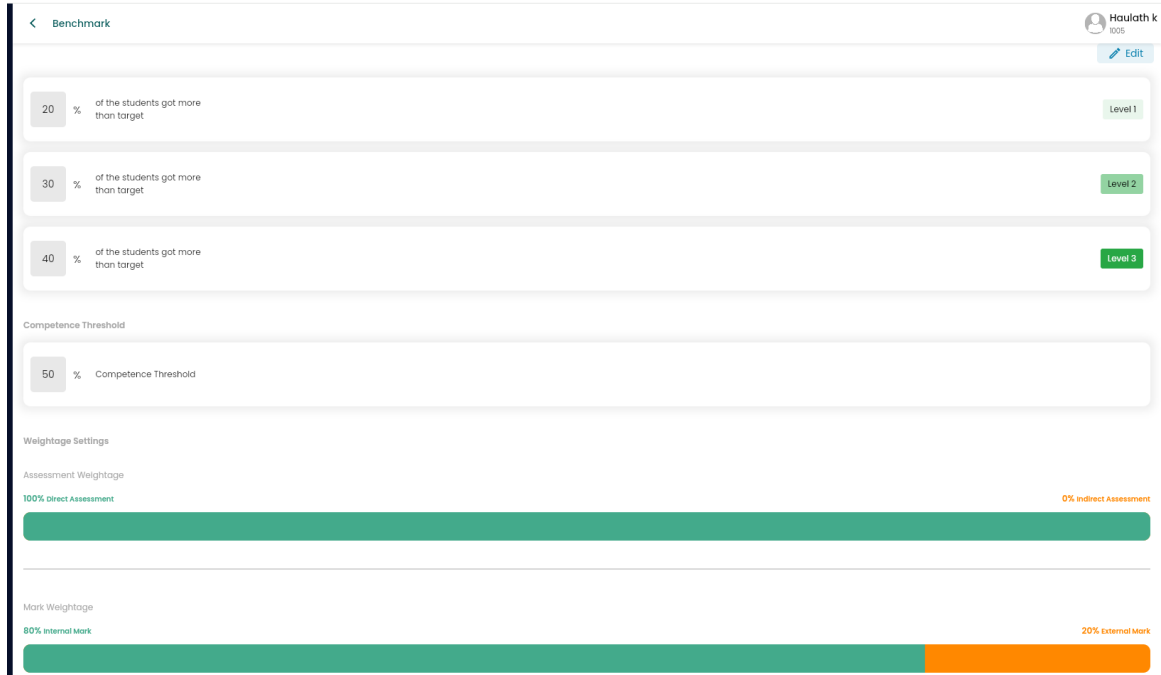
Course Attainment Haulath k 805

BCS8813
Computer networks

- Benchmark
- CO
- CO-PO Mapping
- CO-PSO Mapping
- Direct Assessment
- Indirect Assessment
- Attainment
- Report



Benchmark



Course Outcome

CO	Description
co1	Understand the fundamentals of computer networks, including different network topologies and categories. Explain the concept of an internetwork and the structure of the internet. Analyze network models, including layered models such as OSI and TCP/IP. Describe the physical layer of networks and comprehend various switching techniques, including circuit switching, packet switching, and message switching. Identify and explain DTE-DCE interfaces and interface standards such as EIA-232 and X.21 modem.
co2	Demonstrate understanding of the data link layer, including error detection and correction mechanisms such as VRC, LRC, and CRC. Implement error correction techniques for single bit errors and utilize Hamming code for error detection and correction. Understand data compression techniques, including Huffman coding. Describe data link control mechanisms, including line discipline, flow control, and error control. Explain multiple access methods such as ALOHA, pure ALOHA, slotted ALOHA, CSMA/CD, and CSMA/CA.
co3	Understand the network layer, networking devices, logical addressing, IPv4 and IPv6 addresses, and network protocols. Implement address mapping, error reporting, and multicasting mechanisms. Describe routing algorithms such as distance vector routing and link state routing. Analyze the transport layer, including process-to-process delivery using UDP, TCP, and SCTP protocols.
co4	Understand congestion control mechanisms and Quality of Service (QoS) concepts. Describe application layer protocols such as DNS, remote login, email, FTP, and HTTP. Introduce concepts of network management, including SNMP. Explain the basics of cryptography and network security, including goals, attacks, services, and techniques.



CO-PO Mapping

CO-PO Mapping

Co_PO	co1	co2	
PO1 Knowledge	1	2	
PO2 Analysis	1	2	
PO3 Design	1	2	
PO4 Develop	1	2	

Outcome Correlation Matrix

PO9 : Graduates will cultivate effective teamwork skills, collaborating with peers to tackle complex projects, communicate ideas, delegate tasks, and resolve conflicts, fostering a collaborative and inclusive work environment conducive to productivity and innov

co1 co2 co3 co4 co5

co1 : Understand the fundamentals of computer networks, including different network topologies and categories. Explain the concept of an internetwork and the structure of the Internet. Analyze network models, including layered models such as OSI and TCP/IP. Describe the physical layer of networks and comprehend various switching techniques, including circuit switching, packet switching, and message switching. Identify and explain DTE-DCE interfaces and interface standards such as EIA-232 and X.21 modem

0 - Nil 1 - Low 2 - Medium 3 - High

Correlation Explanation

Cancel

CO-PSO Mapping

CO_PSO	co1	co2	
PO1 Knowledge	0	0	
PO2 Analysis	0	0	
PO3 Design	0	0	
PO4 Develop	0	0	

Outcome Correlation Matrix

PO5 : Graduates will gain hands-on experience with modern programming languages, frameworks, and development tools, allowing them to proficiently develop and deploy software solutions across various platforms and environments, keeping pace with technological ad

co1 co2 co3 co4 co5

co1 : Understand the fundamentals of computer networks, including different network topologies and categories. Explain the concept of an internetwork and the structure of the Internet. Analyze network models, including layered models such as OSI and TCP/IP. Describe the physical layer of networks and comprehend various switching techniques, including circuit switching, packet switching, and message switching. Identify and explain DTE-DCE interfaces and interface standards such as EIA-232 and X.21 modem

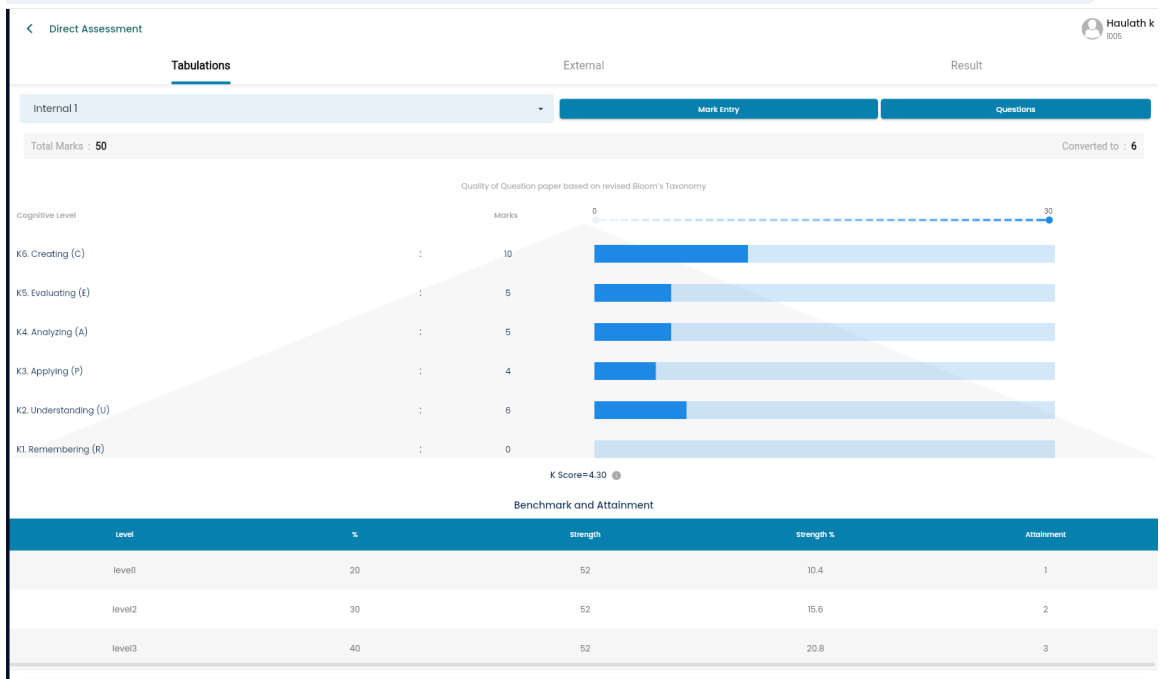
0 - Nil 1 - Low 2 - Medium 3 - High

Correlation Explanation

Cancel



Direct Assessment



Mark Entry

Mark Entry | Haulath k 1005 | Edit

AHAMMED SINAN CP

Roll No : 101 | Adm No : 21BCSA128

1	Marks	/2	2	Marks	/2
3	Marks	/2	4	Marks	/2
5	Marks	/2	6	Marks	/5
7	Marks	/5	8	Marks	/10

Roll No: 101 102 103 105 106 107 108 109 110 111 112 113 114 116 117 118 119 120 121 122 123 124 125 126

Legend: Marked (blue), Not-Marked (grey), Selected (red)



Settings Haulath k 1005

Section I

Question Number: 1
CO's: co2
Question Hint: what is the name of error correction technique that used parity bit to ensure the accuracy of data ?
Cognitive Level: Understanding
Max Mark: 2

Question Number: 2
CO's: co3
Question Hint: what is the type of addressing system that allows a single IP address to be used for multiple devise
Cognitive Level: Understanding
Max Mark: 2

Question Number: 3
CO's: co3
Question Hint: which protocol is used for error reporting and multicasting in an inter network?
Cognitive Level: Understanding
Max Mark: 2

Question Number: 4
CO's: co3
Question Hint: what type of networking device is responsible for forwarding packet across the multiple network
Cognitive Level: Applying
Max Mark: 2

Question Number: 5
CO's: co5
Question Hint: What type of frame detection method is used in the Ethernet?
Cognitive Level: Applying
Max Mark: 2

Indirect Assessment

Indirect Assessment Haulath k 1005

Tabulation Result Question Edit

Sl	Name	co1	co2	co3	co4	co5
1	SUNESH T K <small>Admi. No : 21BCSA026</small>	-	-	-	-	-
2	SHANA SHIRIN P <small>Admi. No : 21BCSA029</small>	-	-	-	-	-
3	MUNNA AK <small>Admi. No : 21BCSA036</small>	-	-	-	-	-
4	FATHIMA DHILSHANA M P <small>Admi. No : 21BCSA040</small>	-	-	-	-	-
5	SREEYUKTHA P <small>Admi. No : 21BCSA064</small>	-	-	-	-	-
6	SHADIYA <small>Admi. No : 21BCSA069</small>	-	-	-	-	-
7	MIDHUN C <small>Admi. No : 21BCSA076</small>	-	-	-	-	-
8	JUMNA SHERIN K <small>Admi. No : 21BCSA098</small>	-	-	-	-	-
9	ASNA SHARIN PV <small>Admi. No : 21BCSA100</small>	-	-	-	-	-
10	NOORA P <small>Admi. No : 21BCSA101</small>	-	-	-	-	-



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Indirect Assessment

Tabulation **Result** Question

Total Attainment : 0 Publish

Calculation

CO's	Attainment(/s)
co1	-
co2	-
co3	-
co4	-
co5	-
<hr/>	
Final Direct Course Attainment	0
Indirect Assessment Weightage	0%
Total Attainment	0

Attainment

Attainment

Result **Quantity Indicators**

Course Attainment : 1.56 Finalize

Course Attainment	Direct	Indirect
Weightage	100%	0%
Attainment	1.56	0
<hr/>		
Course Attainment		1.56
<hr/>		
Direct Attainment		
Final Direct Course Attainment		1.56
<hr/>		
Indirect Attainment		
Final Indirect Course Attainment		0



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E.M.E.A. COLLEGE OF ARTS & SCIENCE

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MALAPPURAM (DT), KERALA PIN 673638, MOB: 8547679457 | EMAIL:
mail@emeacollege.ac.in

CO-PO ATTAINMENT PROCEDURE FOR DIRECT AND INDIRECT ASSESSMENT

Course Details	
Course Code & Name	BCS6B13 - Computer networks
Teaching Staff	Haulath K
Semester	6
Number of Enrolled Students	4
Programme	B.Sc Computer Science
Syllabus	B.Sc CS - 2021-22

Programme Details	
Programme Name	B.Sc Computer Science
Head of the Department	Dr. Riyad AM

Step 1:

Program Outcome (PO)

PO1: Graduates will acquire a robust understanding of computer science theories, principles, and practices, encompassing areas such as software engineering, database management, networking, and artificial intelligence, enabling them to apply theoretical concep

PO2: Graduates will develop strong analytical skills to assess complex computational problems, identify requirements, and formulate appropriate solutions using systematic analysis techniques, ensuring the development of efficient and effective software systems

PO3: Graduates will demonstrate proficiency in designing software solutions by applying principles of software design and architecture, including modularization, abstraction, and design patterns, to create scalable, maintainable, and adaptable software systems

PO4: Graduates will gain hands-on experience with modern programming languages, frameworks, and development tools, allowing them to proficiently develop and deploy software solutions across various platforms and environments, keeping pace with technological ad

PO5: Graduates will gain hands-on experience with modern programming languages, frameworks, and development tools, allowing them to proficiently develop and deploy software solutions across various platforms and environments, keeping pace with technological ad

PO9: Graduates will cultivate effective teamwork skills, collaborating with peers to tackle complex projects, communicate ideas, delegate tasks, and resolve conflicts, fostering a collaborative and inclusive work environment conducive to productivity and innov

Program Specific Outcome (PSO)

Program Educational Objectives (PEO)

Step 2:

CO-PO Correlation

	Description	PO
co1	<p>Understand the fundamentals of computer networks, including different network topologies and categories. Explain the concept of an internetwork and the structure of the Internet. Analyze network models, including layered models such as OSI and TCP/IP. Describe the physical layer of networks and comprehend various switching techniques, including circuit switching, packet switching, and message switching. Identify and explain DTE-DCE interfaces and interface standards such as EIA-232 and X.21 modem</p>	PO5, PO1, PO2, PO9, PO3, PO4
co2	<p>Demonstrate understanding of the data link layer, including error detection and correction mechanisms such as VRC, LRC, and CRC. Implement error correction techniques for single CSC errors and utilize Hamming code for error detection and correction. Understand data compression techniques, including Huffman coding. Describe data link control mechanisms, including line discipline, flow control, and error control. Explain multiple access methods such as ALOHA, pure ALOHA, slotted ALOHA, CSMA/CD, an</p>	PO4, PO5, PO1, PO2, PO9, PO3
co3	<p>Understand the network layer, networking devices, logical addressing, IPv4 and IPv6 addresses, and network protocols. Implement address mapping, error reporting, and multicasting mechanisms. Describe routing algorithms such as distance vector routing and link state routing. Analyze the transport layer, including process-to-process delivery using UDP, TCP, and SCTP protocols.</p>	PO3, PO4, PO1, PO5, PO2, PO9

co4	Understand congestion control mechanisms and Quality of Service (QoS) concepts. Describe application layer protocols such as DNS, remote login, email, FTP, and HTTP. Introduce concepts of network management, including SNMP. Explain the basics of cryptography and network security, including goals, attacks, services, and techniques.	PO2, PO9, PO3, PO4, PO1, PO5
co5	By the end of this course, students will have a comprehensive understanding of computer networks, data communications, and network security principles, enabling them to analyze, Understand symmetric and asymmetric key ciphers, including traditional and modern techniques such as DES and RSA. Implement message integrity and authentication mechanisms using MAC and digital signatures. design, and troubleshoot network systems effectively.	PO1, PO5, PO2, PO9, PO3, PO4

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO9
co1	1	1	1	1	1	2
co2	2	2	2	2	1	3
co3	3	3	3	1	2	2
co4	0	0	0	2	1	1
co5	0	1	1	1	2	2
AVERAGE	1.2	1.4	1.4	1.4	1.4	2

CO-PSO Mapping

Step 3:

Weightage, Benchmark and Attainment

Weightage			
Direct Assessment	Internal	80	100
	External	20	
Indirect Assessment	Course Evaluation Survey		0

Benchmark and Attainment			
Level	Benchmark	Strength	Attainment
Level 1	20% Students got more than target	(20% of Student strength): 0.40	1
Level 2	30% Students got more than target	(30% of Student strength): 0.60	2
Level 3	40% Students got more than target	(40% of Student strength): 0.80	3

Step 4

Course Attainment for each CO: Direct Assessment for Various Internal Examination

Internal 1	CO	Total Mark	CTM* (50%)	No. of students above threshold	Attainment
	co1	-	-	-	-
	co2	7	3.5	1	3
	co3	6	3	1	3
	co4	-	-	-	-
	co5	17	8.5	1	3

Course Attainment for CO: Direct Attainment External

External Examination	CO	Total Mark	CTM* (50%)	No of Students above threshold	Attainment
	co1	-	-	-	3.00
	co2				
	co3				
	co4				
	co5				

*Competency Threshold Mark

Step 5:

Course Attainment for each CO: Indirect Assessment (Course Exit Survey)

Indirect Assessment	CO	Average Attainment	Attainment
	co1	-	0.00
	co2	-	
	co3	-	
	co4	-	
	co5	-	

Step 6:

Direct Attainment

	co1	co2	co3	co4	co5	Average	Weightage	Attainment
Internal	-	3.00	3.00	-	3.00	3.00	80	2.40
External	3	3	3	3	3	3.00	20	0.60
Direct Attainment Total								3

Step 7:

Course Outcome Attainment

	Attainment	Weightage	Final Attainment
Direct Attainment	3.00	100%	3.00
Indirect Attainment	0.00	0%	0.00
Course Outcome Attainment			3.00
Course Outcome Attainment Percentage			100.00%

Signature of Teacher



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Signature of HOD