



**SDM College of Engineering and Technology,
Dharwad-02
Department of Computer Science and Engineering**

Best Practices Reports

Academic Year : 2020-21

**SDM College of Engineering and Technology,
Dharwad-580 002**

**DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING**



BEST PRACTICES

[September 2020-January 2021]

Course: Data Structures and Applications-18UCSC302

For 3rd Semester Students

Course Teachers:

Prof. R G Yadawad and Prof. Indira R Umarji

Best Practice

By

Prof. Ranganath G Yadawad and

Prof. Indira R Umarji

Assistant Professor

Department of CSE, SDMCET, Dharwad

Mobile:

8217682869 / 9945348887

Course:	Data Structures and Applications
Semester:	III (A & B Division)
Duration of the Course:	September 2020 – February 2021
Course Teachers:	Prof. Ranganath G Yadawad and Prof. Indira R Umarji
Best Practice Name	Open book Test / Hack-a-thon

The course is associated with a theory and an associated laboratory. In the theory classes the relevance is given to the conceptual mapping to the general implementation of the said Data Structure using C programming constructs. The laboratory concentrates on the application of the learnt data structures in solving a given problem.

By using the concepts learnt in the theory and the implementations done in the laboratory (per data structure an independent example is solved), the students are made to extend their knowledge of the learnt things in order to choose a proper data structure among the ones that they have undergone.

The activity was designed to be a group activity, where all the groups were given the same problem statement, so that all students are evaluated on the same scale. The students were allowed to use any resources and were

permitted to work on the problem from anywhere. The final demonstration of their work was rigorously carried out in the department by the Course teachers ending with the submission of the respective report.

Expected learning:

This activity enhances the art of applying the knowledge that students have gained and thus solve a given problem.

Objectives:

The students will be able to

1. Use relevant data structures for solving the given problem.
2. Apply Modular programming approach.
3. Write Report for the work carried out.
4. Work in a group.

BEST PRACTICE

By

Dr. S. B. KULKARNI

Department of CSE, SDMCET, Dharwad

Mobile: 9880313022

Email: sbkulkarni_in@yahoo.com

Course:	Software Engineering - 18UCSC503
Semester:	5th -B div: Class Size : 85 at UG level
Duration of the Course:	June-Dec, 2020.
Course Teacher:	Dr. S B KULKARNI
Best Practice Name	Project Based Learning

Objectives and Outcomes:

1. Understanding of concepts inline with SDLC.
2. To Prepare SRS.

Approaches followed for the Best Practices:

1. The students were given topics related to mini project.
2. Students prepared themselves in the standard format of SRS by referring internet.
3. This ensures self-preparation and also enhances document preparation.

SB
13/01/2020

BEST PRACTICE

By
Rani Shetty
Assistant Professor,
Department of CSE, SDMCET, Dharwad
Mobile: 9738827107
Email: ranishettysdmcet@gmail.com

Course:	Computer Graphics-15UCSC702
Semester:	7th – A & B div. Class Size:143 at Under Graduate level
Duration of the Course:	June-Dec 2020
Course Teacher:	Rani Shetty
Best Practice Name	Practice Based Learning

The said theory course is taught in the class by writing the programs using OpenGL for computer Graphics mentioned in the syllabus. The coverage focuses on modelling and animation which emphasis on two aspects of learning and are Sufficiency and Completeness of the concepts. Sufficiency focusses on the shallow coverage as per syllabus to prepare students for examinations and completeness connects various other dependent learning concepts beyond the syllabus and hence readiness for the industry. The programs were made available to all students through email groups. As and when a particular concept is covered in the class (through programming), all students are expected to try out the programs. This will also enhance their programming capability. Based on the learning of all primitives through practice in the class, all students are expected to do **Assignment work** of practical problem along with **report writing** to showcase the application of their learning. Following are the components of best practices

1. Demonstration of CG programs from Virtual Labs.com
2. Animative Quizzes created from quizez.com on Laboratory Programs
3. Use of Menti meter for brushing up on topics of previous class
4. Seminars & virtual lab Recordings

Objectives and Outcomes:

- Clear understanding of concepts by practice.
- Enhanced programming capabilities.


(2020)

BEST PRACTICE

By

Prof. Dr. S M Joshi and Prof. Sharada H N

Department of CSE, SDMCET, Dharwad

Mobile: 9036079402/7338313364

Email: joshshree@gmail.com/shnsdmcet@gmail.com

Course:	Data Communication - 18UCSC500
Semester:	5th – A & B div: Class Size : 74 + 72 at UG level
Duration of the Course:	June-Dec, 2020.
Course Teacher:	Prof. Dr. S M Joshi and Prof. Sharada H N
Best Practice Name	Self Study / Peer Learning Component

Objectives and Outcomes:

1. Clear understanding of concepts covered in the class by self-learning.
2. Sharing the concept learnt among peers.

Approaches followed for the Best Practices:

1. The students were given some topics to study that were already covered in the class.
2. Students prepared themselves and after ensuring their readiness, students were asked to give the online presentation among other students.
3. This ensures self-preparation and also enhances presentation skills.

Course Teacher

• Prof. Dr. S M Joshi

• Prof. Sharada H N



A

UNIT 1 QUESTION BANK SOLUTION : REVISION CLASS

PRESENTED BY : ANKIT ANAND
USN- 2SD18CS016
5TH SEMESTER, B DIVISION
CSE BRANCH

GUIDED BY : SM JOSHI SIR

This screenshot shows a presentation slide with a white background and a dark border. At the top, it says 'UNIT 1 QUESTION BANK SOLUTION : REVISION CLASS'. Below that, it lists the presenter's name 'PRESENTED BY : ANKIT ANAND', their USN 'USN- 2SD18CS016', their semester and division '5TH SEMESTER, B DIVISION', and their branch 'CSE BRANCH'. At the bottom, it says 'GUIDED BY : SM JOSHI SIR'. The slide is displayed in a window with a Windows taskbar at the bottom.

RA

2. LATENCY :

Network latency is a measure of how long it takes a message to travel from one device to another across a network. A network with low latency experiences few delays in transmission, whereas a high latency network experiences many delays. The more delays there are, the longer it takes to transmit data across a network.

Latency is affected by the number of devices on the network and the type of connection device.

Example : A hub-based network will usually experience higher latency than a switch-based network because hubs broadcast all messages to all devices. Switch-based networks transmit messages only to the intended recipient.

This screenshot shows a presentation slide with a white background and a dark border. The title is '2. LATENCY :'. The main text defines network latency as a measure of how long it takes a message to travel from one device to another across a network. It notes that low latency networks have few delays, while high latency networks have many. It also states that latency is affected by the number of devices and the type of connection device. An example is provided: a hub-based network has higher latency than a switch-based network because hubs broadcast to all devices, while switches only transmit to the intended recipient. The slide is displayed in a window with a Windows taskbar at the bottom.

BEST PRACTICE

By
Prof. Anand Vaidya

Assistant Professor,
Department of CSE, SDMCET, Dharwad
Mobile: 9036889732,
Email: vaidyacse@gmail.com

Course:	Database Management Systems - 15UCSC502
Semester:	5th – A : Class Size :72 at Under Graduate level
Duration of the Course:	Aug-Dec 2019
Course Teacher:	Anand Vaidya,
Best Practice Name	Practice Based Learning

The student will write program to visualize the difference between flat file system and database management system. Small real time application(INFOSYS campus connect activity) with all requirement in the form of pdf format was provided to all students and they will form a 3-4 students group and write a C program to demonstrate a said application. Afterword's the same application they will demonstrate using DB approach. By doing this student will get more convinced about the advantage of DB approach like Data redundancy and inconsistency ,Data sharing ,Data concurrency ,Data searching and Data integrity. This will also enhance their programming capability.

Objectives and Outcomes:

1. Effectively differentiate the advantages of DB approach by practice.
2. Able to understand the requirements properly.
3. Enhanced programming capabilities.
4. Improved coding standard and practices.
5. Preparedness for placement.

Anand Vaidya

BEST PRACTICE

By

Nita Kakhandaki, Sharada H N
Assistant Professor,
Department of CSE, SDMCET, Dharwad
Mobile: 9900221342, 7338313364
Email: nitagkulkarni@gmail.com, shnsdmcet@gmail.com

Course:	Digital Electronics (18UCSC300)
Semester:	III – A & B : Class Size : 72 at Under Graduate level(each)
Duration of the Course:	Aug - Dec 2020.
Course Teacher:	Nita Kakhandaki, Sharada H N
Best Practice Name	Simulation Based Learning

Objectives:

1. Clear understanding of concepts.
2. Confidence in the subject by practicing.

The said theory is taught in the class by considering design process for building logic circuit. The students were taught the different phases of design aspects in combinational and sequential circuits. Prof. Reshma Nadaf, Dept. of EnC SDMCET, Dharwad gave extended lecture sessions on "Simulation of combinational and sequential circuit using Verilog" along with demonstration.

Inference:

1. Students have successfully understood the design aspects of architectural and behaviour model with some constraints.
2. Exposure to Verilog Simulation

Action Plan:

1. The practice can be improved by giving more hands-on sessions.

Faculty In-charge:

1. Nita Kakhandaki- 

2. Sharada H N - 

BEST PRACTICE

By,
Prof. Sandhya S V
Assistant Professor,
Department of CSE, SDMCET, Dharwad
Mobile: 9886421455
Email: sandhya.sv@gmail.com

Course:	Adhoc Networks 15UCSE706 [Elective]
Semester:	7 th A & B Class Size - 47 at Under Graduate level
Duration of the Course:	Sept-Dec 2020.
Course Teacher:	Prof. Sandhya S V
Best Practice Name	Implementation based Learning

Adhoc Network course focuses on the issues in designing and using different types of protocols at different layers of protocol stack. The different types of protocols such as Distributed-PRMA, Hop Reservation Multiple Access protocol, Distributed Priority Scheduling, Fish Eye State Routing protocol, 5-phase reservation state routing protocol so on.

The students were given the above protocols for implementation and the demonstration for the same. To highlight the implementation of these protocol the Backoff Algorithm and Hop Reservation Multiple Access Protocol were implemented using different technologies.

By this type of studies, the students were able to reach the different objectives of the course.

Objectives and Outcomes:

1. Understand and apply the knowledge of different routing mechanisms for the better routing decisions in Wireless Adhoc Networks
2. The knowledge of different transport layer protocols for ensuring reliable communication in Wireless Adhoc Networks.

SSV
11/1/2021

BEST PRACTICE

By

G. A. Radder

Assistant Professor

Department of CSE, SDMCET, Dharwad

Mobile: 9448344098

Email: garsdmclass@gmail.com

Course:	Advanced Data Structures and Algorithms- 15UCSE607
Semester:	6th – B div : Class Size :65 at Under Graduate level
Duration of the Course:	Jan-May 2020
Best Practice Name	Practice Based Learning

The said theory course is taught in the class by practicing the concepts studied in theory class like new data structures and algorithms to solve any given task, hashing etc. of advanced data structure and algorithms mentioned in the syllabus. Emphasize the importance of data structures in developing and implementing efficient algorithms. In addition, another objective of the course is to develop effective software engineering practice. The coverage focuses on placement preparation, GATE exam and industry readiness, with emphasis on two aspects of learning i.e. Sufficiency and Completeness of the concepts. This will also enhance their programming capability. Based on the learning of all primitives through practice in the class, all students are expected to do assignment work of practical problem along with record writing to showcase the application of their learning.

Objectives and Outcomes:

- Enhanced capabilities to select most appropriate data structures
- It helps in preparation of GATE examination and Placements.
- Enhanced Industry readiness.
- To extend the students' knowledge of algorithms and data structures
- To enhance their expertise in algorithmic analysis and algorithm design techniques.
- To learn a variety of useful algorithms and techniques
- To extrapolate from them in order to apply those algorithms and techniques to solve problems

G. A. Radder
11-1-2021

BEST PRACTICE

By

Dr.V.B.Hemadri

Assistant Professor,

Department of CSE, SDMCET, Dharwad

Mobile: 9448776104

Email: vidya.gourii@gmail.com

Course:	Compiler Design (15UCSC501)
Semester:	V – B : Class Size : 72 at Under Graduate level
Duration of the Course:	Aug - Dec 2020.
Course Teacher:	Vidyagouri B Hemadri
Best Practice Name	Case Based & Practice Based Learning

Objectives:

1. Clear understanding of concepts.
2. Confidence in the subject by practicing.

The said theory is taught in the class by considering C language as a case study. The students were taught the different phases of compiler considering the C language. Following are the best practices followed in the class related to the course.


1. The students were given a mini project where they have to design a translator which takes an algorithm as input and gives C program as output and a translator which translates from one natural language to the other. Few students have done the project with some constraints. Some students have implemented in Python, Python with NLTK and few are implemented in LEX and YACC.
2. Dr. U P Kulkarni, Professor, HoD CSE, SDMCET, Dharwad gave an extended lecture session on "Emulation of basic commands of UNIX using system calls" and "Application development using Inter Process Communication".
3. Students gave a presentations on the topics Study of memory layout of C/ JAVA language related to "Run Time Environment" topic

Inference:

1. Students have successfully implemented the project with some constraints.
2. Exposure to basic knowledge of Python
3. More clarity in the usage of LEX and YACC tool.
4. More clarity about the application of the phases of compilations like Lexical analysis and syntax analysis.

Action Plan:

1. The project can be improved to translate any algorithm to C program.
2. Text or a document can be translated from one natural language to other.


Faculty In charge
Prof.V B Hemadri

BEST PRACTICE

By
Prof. Vidya V. Uttur
Assistant Professor,
Department of CSE, SDMCET, Dharwad
Mobile: 9845935971
Email: vidyagadike@gmail.com

Course:	Advanced Computer Architecture 15UCSC701
Semester:	7 th - A div : Class Size - 73 at Under Graduate level
Duration of the Course:	Sept-Dec 2020.
Course Teacher:	Prof.Vidya V. Uttur
Best Practice Name	Case Study based Learning

Advanced Computer Architecture course focuses on the issues in designing and using high performance parallel computers at a time when a set of scalable computers utilizing commodity microprocessors offer higher peak performance traditional vector supercomputers.

The case study related to multicomputer approach interconnects computers built from microprocessors through high bandwidth switches that introduce latency, there by enhancing the research trend towards scalable, shared-memory multi-processors in order to handle general workloads ranging from technical to commercial tasks and workloads.

Illustrative case study on different multiprocessors and multicomputers to analyze the concept of message passing.

Illustrative case study on role of compiler in the exploitation of instruction level parallelism.

Objectives and Outcomes:

1. Understanding the concept of parallel processing and the relationship between parallelism and performance.
2. To summarize the parallel architecture and the software used for them.
3. To analyze the performance of architecture in terms of right parameters.

Vuttur
11/1/2021.

BEST PRACTICE

By

Prof. Yashodha . A . Sambrani

Assistant Professor,

Department of CSE, SDMCET, Dharwad

Mobile: 8867749578

Email: ysambrani@gmail.com

Course:	Management, Entrepreneurship & IPR - 18UHUC500
Semester:	5 th - B div Class Size - 81 at Under Graduate level
Duration of the Course:	Sept-Dec 2020
Course Teacher:	Prof. Yashodha . A . Sambrani

- Organization of webinar on StartUp Initiatives to create awareness of StartUp Facilities provided by the college, StartUp cell and faculty Coordinators of SDMCET. Studying this entrepreneurship enhances management skills and entrepreneurial qualities by offering opportunities to enable to start and run businesses effectively.
- Organization of webinar on IPR to create awareness of SDMCET IPR cell, faculty members incharge and in depth understanding various IPR categories.
- Extended Lecture on Patent Registration process was conducted to enhance in depth understanding of patent registration process to the students.

Objectives and Outcomes:

1. Understanding of aspects of management and entrepreneurship.
2. To identify issues related to IPR


11/01/2021

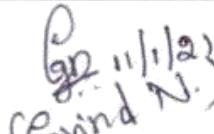
Best Practices

Course Instructor: Prof. Govind Negalur	Course	ISUCSE708- Internet of Things	2-0-2: 3 credits	26T+26L	7 th Sem, A&B div	Aug-2020 to Dec-2020
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Following practices were followed as part of Internet of Things course:

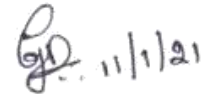
1. Live demonstration of working with hardware components (Arduino, sensors and modules) were provided during online class. Hardware components were required for laboratory component attached with this course.
2. Students were asked to perform the connections as and when being demonstrated during the online sessions. Doubts if any were clarified during the online sessions.
3. Students were asked to purchase the necessary hardware components on their own. This was mandated as part of CTA evaluation.
4. Additional CTA assignments were given for the students who were ready to explore new tools and platforms related to IoT. Following is the list of additional CTA assignments:

Sl No.	Details of Additional CTA Work
1)	Develop Android App using MIT App Inventor and demonstrate the use of android app to switch on LED (connected to Arduino) or off using Bluetooth module
2)	Send data to cloud using Bluetooth module (connect Bluetooth module to Bluetooth of laptop/mobile and send data to cloud using wifi available in laptop/mobile)
3)	Thingspeak Matlab Analytics: Perform analytics on DHT11 sensor data like average humidity, minimum and maximum temperature recordings of each day etc
4)	Thingspeak ThingTweek: send automatic alert tweet when temperature is above 35 and below 15
5)	Thingspeak TimeControl: send tweets about temperature recorded automatically every half an hour
6)	Thingspeak React: send a tweet each time the heat index goes above a set threshold by checking the channel every 10 minutes
7)	Thingspeak TalkBack: control internal/external LED that is connected to Arduino UNO
8)	Blynk: explore blynk.io IoT platform and build IoT application to implement a simple use case of your choice


 Govind N.

9)	Thinger: explore thinger.io IoT platform and build IoT application to implement a simple use case of your choice
10)	Thingsboard: explore thingsboard.io IoT platform and build IoT application to implement a simple use case of your choice

Course Instructor:



Prof. Govind Negalur,

+91-9740143982

govsdm@gmail.com

govind.negalur@sdmcet.ac.in

BEST PRACTICE

By


Dr. Archana Nandibewoor
Assistant Professor,
Department of CSE, SDMCET, Dharwad
Mobile: 9844831981
Email: narchana2006@gmail.com

Course:	Engineering Management, Entrepreneurship & IPR - 15UCSC700
Semester:	7 th - A and B div : Class Size - 150 at Under Graduate level
Duration of the Course:	Sept-Dec 2020.
Course Teacher:	Dr. Archana Nandibewoor
Best Practice Name	Case Study based Learning

Management and Entrepreneurship course focuses on the dynamics of business or innovate inside an existing organization. Studying this entrepreneurship enhances management skills and entrepreneurial qualities by offering networking opportunities to enable to start and run businesses effectively.

Objectives and Outcomes:

1. Understanding of aspects of management and entrepreneurship.
2. To identify issues related to IPR


9/1/21

BEST PRACTICE

By

Prof.A.A.Qazi

Assistant Professor,

Department of CSE, SDMCET, Dharwad

Mobile: 986664506

Email: aqsdmet@gmail.com

Course:	Management, Entrepreneurship & IPR - 18UHUC500
Semester:	5 th - A div Class Size - 72 at Under Graduate level
Duration of the Course:	Sept-Dec 2020
Course Teacher:	Prof.A.A.Qazi

Management and Entrepreneurship course focuses on the dynamics organization to innovate ideas. Studying this entrepreneurship enhances management skills and entrepreneurial qualities by offering opportunities to enable to start and run businesses effectively. Webinars on IPR, Patent registration process and Start up initiatives were organized for better understanding of concepts.

Objectives and Outcomes:

1. Understanding of aspects of management and entrepreneurship.
2. To identify issues related to IPR

9/1/2021

(A.A.Qazi)