INDEX			
Sr.No.	Faculty Name	Topic Name	Pg. No.
1	Dr. B.N. Wagh	Advanced Studies in Commerce' Level I/II	2 to 15
2	Dr. M.B.Jadhav	Information of Self Help Group	16 to 31
3	Dr. Survase Deepak K.	i) Piecemeal Distribution of Cash	32 to 43
		ii)Royalty Accounts	44 to 56
		iii) Computerised Accounting Environment	57 to 69
4	Dr. Archana Gaikwad	Renewable Energy	70 to 83
5	Dr. Vishal Gaikwad	Educational Videos	84 to 85
		SYBCom Banking & Finance -I	
		SYBA Financial system -I	
		All Information about NSS	
		SYBCom Macro Economic	
		FYBA Indian Economic Environment -I	
6	Dr. Sunita Satish Sakure	Educational & Others Videos	86
7	Prof. Abhijit Pawar	Data Condensation and Presentation of Data	87 to 122

Shri. Shavaji Maratha Society's

S.B.B. alias Appasaheb Jedhe Arts, Commerce and Science, Pune-02

Department of Commerce

Academic Year-2022-23

A

Syllabus

of

Online Certificate Course on **'Advanced Studies in Commerce' Level I/II**

(For 02 Extra Credit)

Duration: 30 Hours (Each Level)

Dr. B. N. Wagh
Course Coordinator

Prof. (CA) Dr. Ashok Mojad
Head of Commerce Dept.
Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Path, Pune-411 002.

Prof. Dr Deepali Patil
Acting Principal
ACTING PRINCIPAL
Samaj Bhushan Babasaheb alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411002.

S.B.B. Alias Appasaheb Jedhe Arts, Commerce and Science College, Pune-02
Department of Commerce
A Y 2022-23
Online Certificate Course on 'Advanced Studies in Commerce' Level-I
S.Y.B.Com.

Total Credits: 02 **TH=23** **PR=07**

Course Objectives:

1. To understand the basic concept of Mathematical and Statestical aptitude
2. To understand the concept of Cost and element of Cost.
3. To understand the process for the registration of company
4. To develop students' interview skills, Time management skills and Decision making skills
5. To make students able to use digital banking
6. To understand the company law

Sr. No.	Subject	Content	TH	PR
1	मराठी	मुलाखतीचे तंत्र वेळेचे व्यवस्थापन निर्णय क्षमता व्यक्तिमत्व विकास	3	1
2	Tourism Industry (Geography)	Tourism Industry Tourism Industry sectors and career development Sustainable tourism: Society and environmental aspects	3	1
3	Environment Studies	Meaning of Environment pollution and its types Effect of pollution on Environment significance of preserving environment ways to keep environment healthy	3	1
4	Cost and Works Accounting	Need of costing Elements of costing Importance of Costing Importance of tender, quation and costsheet service industries	3	1
5	Digital Banking	Selective concept of Banking: Central Banking, Merchant banking Commercial Banking,Social Banking, Wholesale Banking	3	1
6	usiness Communicati	E-commerce and E-business Communication Skills (Soft Skills) Personality Development Managerial Skills	3	1
7	Company Law	Formulation of New Company Stages of Formulation of New Company	3	1
8	Maths	Ratio, proportion, average Simple interst and compund interest	2	0

Dr. B. N. Wagh
Course Coordinator

Prof. CA (Dr) Ashok Mojad
HOD
Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

Prof. Dr. Deepali Patil
Acting Principal
ACTING PRINCIPAL
Samaj Bhushan Baburao alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411002.

S.B.B. Alias Appasaheb Jedhe Arts, Commerce and Science College, Pune-02
Department of Commerce
A Y 2022-23
Online Certificate Course on 'Advanced Studies in Commerce' Level-II
T.Y.B.Com.

Total Credits: 02 **TH=23 PR=07**

Course Objectives:

1. To develop writing skills of the Commerce students
2. Students will be able to solve aptitude test.
3. To introduce advance knowledge of costing techniques to students.
4. To impart the information of self-help group, its evolution, development in India
5. To explain basic concepts regarding income tax, types of income and investment plans.

Sr. No.	Subject	Content	TH	PR
1	English	Paragraph Writing Summary Writing Blog Writing Content Writing	3	1
2	Business Mathematics and Statistics	Number series, coding and decoding, missing number Arithmatic formulated series and mixing Square and square root and, cube and cube root	4	1
3	Cost and Works Accounting	Advance knowledge of costing techniques costing techniques and opportunities in career planning costing techniques and in industrial costing from India	3	1
4	Business Economics/Banking/ Finance	Self-help Group Evolution and development of self-help group in India Stages and function of self-help group Need of self -help group Advantages of self-help group and problems for self-help group	3	1
5	Income Tax	Basics of Direct and Indirect Tax Introduction to Income Tax Definitions of Tax concepts Application for PAN , TAN e-filling, etc. Basics of Share Market	3	1
6	Advance Accounting	BSE, NSE, Types of Income, Investment plans, myths of share market Types of Trading, Types of Trends, Candlestick Pattern, Chart Pattern useful Websites, Books etc.	4	1
7	M Law	Introduction of various act for example, Contract Act, Partnership Act, Consumer protection Act, Arbtration Act, Intellectual property Act, etc. E-commerce	3	1

Dr. B. N. Wagh
Course Coordinator

Prof. CA (Dr) Ashok Mojad
HOD
Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

Prof. Dr Deepali Patil
Acting Principal
ACTING PRINCIPAL
Samaj Bhushan Baburao alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411002.

To,

Date:26/12/2022

The Acting Principal,
S.B.B. alias Appasaheb Jedhe Arts, Commerce and Science College,
425, Shukravar Peth, Pune-02

Subject: Regarding approval for conducting Online Certificate Course '**Advanced Studies in Commerce Level-I & II**' and sanction the budget for paid version of **Google Meet** Application for the course

Respected Madam,

As per the instructions and guidelines given by SPPU, it is mandatory for B.Com students to obtain **Eight Extra Credits** to complete their degree. The Department of Commerce has a plan of conducting 'Online Certificate Course' for two credits. The syllabus is designed for this course. The committee for this course has been formed under the guidance of Head of Commerce Department. This course will be conducted during 28/12/2022 to 09/01/2023 in online mode as per the schedule. We require a paid version of **Google Meet** for conducting lectures of this course. So, I herewith request you to sanction the amount of Rs. 1260 + 5% GST= Total Rs 1323/-

We request you to permit us to conduct extra credit course.

Dr. B. N. Wagh
Course Coordinator

Prof. (CA) Dr. Ashok Mojad
Head of Commerce Dept.
Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

Prof. Dr Deepali Patil
Acting Principal
ACTING PRINCIPAL
Samaj Bhushan Baburao alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411002.

admin.google.com/?hl=en&pli=1&rapt=AEjHL4NsmC3o-3pZ1...

Admin

Search for users, groups or settings

- Home
- Dashboard
- Directory
- Devices
- Apps
- Security
- Reporting
- Billing
- Account
- Rules
- Storage

Show less

Jedhe College

Welcome to the Google Workspace Admin Console

Users

Manage

Active
1

Deleted
2

Add a user

Delete a user

Update a user's name or email

Create an alternate email address (email alias)

Billing

Manage

Estimated upcoming bill on Jan 1, 2023

₹1,260.00 INR

Manage subscriptions

Payment accounts

Get more services

FOR THE UPLIFTMENT OF THE MASSES
SHRI SHIVAJI MARATHA SOCIETY'S
SAMAJ BHUSHAN BABURAO alias APPASAHEB JEDHE
ARTS, COMMERCE & SCIENCE COLLEGE
425, SHUKRAWAR PETH, PUNE - 411 002. OFF. : (020) 24477335
Email : jedhe_c@rediffmail.com Our website : www.jedhecollege.ac.in
Acting Principal
Prof. Dr. Deepali R. Patil (M. A., M. Phil., Ph.D.)
ACCREDITED BY NAAC 'B' GRADE
EST : 1984 - AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY - IDNT NO. PU/PN/ACS/063/1984/RECOGNISED BY U.G.C. U/S 2(F) & 12 (B)

O. No.

Dt. :

Date:26/12/2022

NOTICE

All the students of S.Y.B.Com and T.Y.B.Com are hereby informed that the Department of Commerce is going to conduct 'Online Certificate Course **'Advanced Studies in Commerce Level-I & II'** for two credits from 28/12/2022 to 09/01/2023 in online mode. As per the instructions and guidelines given by SPPU, it is mandatory for all students to obtain eight extra credits to complete their degree. This certificate course will help students to obtain two extra credits and complete their degree. For registration, Google Form is sent on WhatsApp group of your class. Students have to fill up their entire information and enroll their names for this course before 28/12/2022. Regarding any query about registration, students may contact to:

Dr. Somnath Gunavare- Mob. No. 9623993969

Dr. B. N. Wagh
Course Coordinator

Prof. (CA) Dr. Ashok Mojad
Head of Commerce Dept.

Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

Prof. Dr Deepali Patil
Acting Principal

ACTING PRINCIPAL
Samaj Bhushan Baburao alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411002.

6:55 56%

About this call

People Info Activities

- Jedhe College (You) — Meeting host
- Mangesh Jad... — Meeting host
- Aarti varoshe
- Abhijeet Doke
- Abhishek Ga...
- Abhishek Naik
- Akanksha Sa...
- Akash Karanj...
- Akshta pand...
- Ambika vidhe
- Amruta Gosa
- Anuja Nangu.

About this call

People | Info | Activities

- Jedhe College (You) — Meeting host
- K GARGOTE — Meeting host
- Aarti Barsile
- Aarti Mali
- Abhishek Ba...
- Abhishek Bib...
- Aditi Chorghe
- Aditya Patil
- Aditya Surve
- Aishwarya Bi...
- Akshay Sawa...
- AMOL DHIWAR
- Amrut Mungle

In call

J Jedhe College (You)
Meeting host

P Prof. Dr. A U ...
Meeting host

 Aakash Aadep

A Aarti Thakur

A Aarti varoshe

 Abhijeet Doke

A Abhishek Dh...

 Aditi

 Aditya Salunke

A Akanksha Ja.

In call

J Jedhe College (You)
Meeting host

D Dilip Pawar
Meeting host

S Sagar Chavan
Meeting host

A Aditya Surve

 Aishwarya Bi...

 Akshay Sawa...

 AMOL DHIWAR

 Amrish khad...

 Amrut Mungle

S.B.B. alias Appasaheb Jedhe Arts, commerce and science College

Department Of Commerce

Online Certificate Course (2022-23)

Advanced Studies in Commerce Level - I

S.Y.B.Com

Subject Teacher Scheduled

SR.NO.	DATE	TIME	SUBJECT	TEACHERS NAME
1	28/12/2022	3:00 PM to 5:00 PM	Dig. Banking	Mr.D.M.Pawar
2	29/12/2022	3:00 PM to 5:00 PM	Cost	Ms.Rajani Jarande
3	30/12/2022	3:00 PM to 5:00 PM	Maths	Ms.Sushila Bhore
4	31/12/2022	3:00 PM to 5:00 PM	EVS	Ms.Aparna Tambe
5	1/1/2023	8:00AM to 10:00 AM	Geography	Ms. Shital Waghmare
		3:00 PM to 5:00 PM	C.Law	Dr. Amit Gogawale
6	2/1/2023	3:00 PM to 5:00 PM	Marathi	Ms. Sonali Gogawale
7	3/1/2023	3:00 PM to 5:00 PM	EVS	Dr. K.D. Gargote
8	4/1/2023	3:00 PM to 5:00 PM	C.Law	Dr. Dipak Survase
9	5/1/2023	3:00 PM to 5:00 PM	Bus. Comm	Ms.Parmita Pawar
10	6/1/2023	3:00 PM to 5:00 PM	Marathi	Dr. Kalpana Gawade
11	7/1/2023	3:00 PM to 5:00 PM	Geography	Dr. Archana Gaikwad
12	8/1/2023	8:00AM to 10:00 AM	Bus. Comm	Dr. Priyanka Gajbhiye
		3:00 PM to 5:00 PM	Dig. Banking	Dr. Santosh Yadav
13	9/1/2023	8:00AM to 10:00 AM	Cost	Mr. Gokul Sahane
9/1/2023 MCQ Online Exam Time - 3:00 to 5: 00 PM.				

Dr. B.N. Wagh
Course Coordinator

(C.A.)Dr. Ashok Mojad
Head, Dept. Commerce

Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

Dr. Deepali Patil
Act. Principal

ACTING PRINCIPAL
Samaj Bhushan Baburao alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411 002.

Department Of Commerce

Online Certificate Course (2022-23)

Advanced Studies in Commerce Level - II

T.Y.B.Com

Subject Teacher Schedule

SR.NO.	DATE	TIME	SUBJECT	TEACHERS NAME
1	28/12/2022	5:00PM to 7:00 PM	B.Eco	Dr. Mangesh Jadhav
2	29/12/2022	5:00PM to 7:00 PM	Income Tax	Dr. Ashok Mojad
3	30/12/2022	5:00PM to 7:00 PM	English	Ms. Seema Dhame
4	31/12/2022	5:00PM to 7:00 PM	Maths	Mr. Ram Palkar
5	1/1/2023	10:00AM to 12:00 PM	Adv. A/C	Dr. Somnath Gunaware
		5:00PM to 7:00 PM	Adv. A/C	Dr. Somnath Gunaware
6	2/1/2023	5:00PM to 7:00 PM	B.Eco	Dr. Vishal Gaikwad
7	3/1/2023	5:00PM to 7:00 PM	Maths	Ms.Sushila Bhore
8	4/1/2023	5:00PM to 7:00 PM	Cost.	Mr. Gokul Sahane
9	5/1/2023	5:00PM to 7:00 PM	M.Law	Adv. Rohan Karkande
10	6/1/2023	5:00PM to 7:00 PM	Income Tax	Dr. Ashok Mojad
11	7/1/2023	5:00PM to 7:00 PM	English	Mr. Raghunath Undre
12	8/1/2023	10:00AM to 12:00 PM	Cost.	Ms. Smita Dhumal
		5:00PM to 7:00 PM	M.Law	Adv. Sanjay Murkute
	9/1/2023	10:00AM to 11:00 AM	Adv. A/C	Mr.. Krishna Mitkar
13	9/1/2023	11:00AM to 12:00 PM	Maths	Mr. Krishna Mitkar
9/1/2023 MCQ Online Exam Time - 3:00 to 5: 00 PM.				

Dr. B.N. Wagh
Course Coordinator

(C.A.)Dr. Ashok Mojad
Head, Dept. Commerce

Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

Dr. Deepali Patil
Act. Principal

ACTING PRINCIPAL
Samaj Bhushan Baburao alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411 002.

S.B.B. alias Appasaheb Jedhe Arts, commerce and science College

Department Of Commerce

Online Certificate Course (2022-23)

Time Table

S.R.	Class	Time	28/12/2022	29/12/2022	30/12/2022	31/12/2022	1/1/2023		2/1/2023	3/1/2023	9/1/2023
			wed	Thus	Fri	Sat	Sun		Mon	Tue	Online Exam MCQ
1	SYBCom	3.00pm to 5.00pm	Dig. Banking	Cost.	Maths	EVS	Geo (8.00am to 10.00am)	C.Law (3.00pm to 5.00pm)	Mar	EVS	3.00 pm To 5.00 pm
2	TYBCom	5.00pm to 7.00 pm	Busi.Eco.	Inc.Tax	Eng.	Maths	Adv.A/C (10.00 am to 12.00 pm)	Adv.A/C (5.00pm to 7.00pm	Bus. Eco.	Maths	

S.R.	Class	Time	4/1/2023	5/1/2023	6/1/2023	7/1/2023	8/1/2023		9/1/2023	
			wed	Thus	Fri	Sat	Sun		Mon	
1	SYBCom	3.00pm to 5.00pm	C.Law	Busi.Comm.	Mar	Geo	Busi.Comm. (8.00am to 10.00am)	Dig. Banking (3.00 pm to 5.00 pm)	Cost. (8.00am to 10.00am)	
2	TYBCom	5.00pm to 7.00 pm	Cost.	M.Law	Inc.Tax	Eng.	Cost. (10.00am to 12.00 p.m.)	M.Law (5.00pm to 7.00 pm)	Maths & Adv. A/C (10.00am to 12.00 p.m.)	

Dr. B.N. Wagh
Course Co-Ordinator

(C.A.)Dr.Ashok Mojad
Head Of Department
Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

Dr. Deepali Patil
ACTING PRINCIPAL
Samaj Bhushan Baburao alias Appasaheb
Jedhe Arts, Commerce & Science College
Pune-411002.

Shri Shivaji Maratha Society's

S.B.B. alias Appasaheb Jedhe Arts, Commerce and Science College

425, Shukrawar Peth, Pune-02

Department of Commerce

AY 2022-23

Report on Online Certificate Course **Advanced Studies in Commerce Level I/II**

The Department of Commerce conducted online certificate course **Advanced Studies in Commerce Level I/II**from 28/12/2022 to 09/01/2023 for 02 Extra Credits. As per the curriculum given by SPPU,08 extra credits are required for students to complete their graduation. Therefore, the Department of Commerce made this course compulsory for all the students of S.Y./T.Y.B.Com.The subsequent meetings were conducted by the department regarding forming various committees, designing andscrutinizing the syllabus and enrolling students' names for this course. The designed syllabus was apart from the syllabus prescribed by SPPU. The main objective ofthis syllabus was to provide extra knowledge of the subjects to students. The syllabus of this course was based on seven different subjects. The specialized teachers taught this syllabus during the course.

This course received overwhelming responses from Commerce students. 1951 students successfully completed this course and received a certificate of participation via e-mail.

This course was free of cost.

Dr. B. N. Wagh

Course Coordinator

Prof. Dr (CA) A.U. Mojad

Head, Commerce Dept.

Head of Department
Department of Commerce (UG & PG)
S.B.B. alias Appasaheb Jedhe College
Shukrawar Peth, Pune-411 002.

S.B.B alias Appasaheb Jedhe Arts, Commerce & Science college. Pune 02.

T.Y.B.Com

Information of Self Help Group

Presented by- Dr. M.B Jadhav

Self-Help Groups (SHGs)

Self-Help Groups (SHGs) are **informal associations of people who choose to come together to find ways to improve their living conditions**. It can be defined as self governed , peer controlled information group of people with similar socio-economic background and having a desire to collectively perform common purpose.

Self-Help Groups (SHGs)

The emergence of Self Help Groups – Origin and Development in India

- The origin of SHGs in India can be traced back to the establishment of the Self-Employed Women's Association (SEWA) in 1972.
- Even before, there were small efforts at self-organising. For example, in 1954, the Textile Labour Association (TLA) of Ahmedabad formed its women's wing in order to train the women belonging to families of mill workers in skills such as sewing, knitting, etc.
- Ela Bhatt, who formed SEWA, organised poor and self-employed women workers such as weavers, potters, hawkers, and others in the unorganised sector, with the objective of enhancing their incomes.

Self-Help Groups (SHGs)

- NABARD, in 1992, formed the SHG Bank Linkage Project, which is today the world's largest microfinance project.
- From 1993 onwards, NABARD, along with the Reserve Bank of India, allowed SHGs to open savings bank accounts in banks.
- The Swarn Jayanti Gram Swarozgar Yojana was introduced in 1999 by GOI with the intention of promoting self-employment in rural areas through formation and skilling of such groups. This evolved into the National Rural Livelihoods Mission (NRLM) in 2011.

Self-Help Groups (SHGs)

Evolution Stages of Self Help Groups in India

Every Self-help group usually goes through 3 stages of evolution stated below:

- Formation of group
- Funding or Formation of Capital
- Development of required skills to boost income generation for the group

Self-Help Groups (SHGs)

Many self-help groups are formed with the assistance of Self- help to promote agencies.

The various types of Self-help promoting agencies are stated below:

- Non-governmental agencies
- Government
- Poverty management programmes
- State & commercial banks
- Microfinance institutions
- SHG Federations
- SHG leaders/Entrepreneurs

Self-Help Groups (SHGs)

Functions of Self Help Groups

- They try to build the functional capacity of poor and marginalised sections of society in the domain of employment and income-generating activities.
- They offer collateral-free loans to sections of people that generally find it hard to get loans from banks.
- They also resolve conflicts via mutual discussions and collective leadership.
- They are an important source of microfinance services to the poor.
- They act as a go-through for formal banking services to reach the poor, especially in rural areas.
- They also encourage the habit of saving among the poor.

Self-Help Groups (SHGs)

Need for Self Help Groups

- One of the chief reasons for rural poverty is the lack of access or limited access to credit and financial services.
- The Rangarajan Committee Report highlighted four major reasons for lack of financial inclusion in India. They are:
  - Inability to give collateral security
  - Weak credit absorption capacity
  - The insufficient reach of institutions
  - Weak community network

Self-Help Groups (SHGs)

- It is being recognised that one of the most important elements of credit linkage in rural areas is the prevalence of sound community networks in Indian villages.
- SHGs play a vital role in giving credit access to the poor and this is extremely crucial in poverty alleviation.
- They also play a great role in empowering women because SHGs help women from economically weaker sections build social capital.
- Financial independence through self-employment opportunities also helps improve other development factors such as literacy levels, improved healthcare and better family planning.

Self-Help Groups (SHGs)

Advantages of Self Help Groups

- Financial Inclusion – SHGs incentivise banks to lend to poor and marginalised sections of society because of the assurance of returns.
- Voice to marginalised – SHGs have given a voice to the otherwise underrepresented and voiceless sections of society.
- Social Integrity – SHGs help eradicate many social ills such as dowry, alcoholism, early marriage, etc.
- Gender Equality – By empowering women SHGs help steer the nation towards true gender equality.
- Pressure Groups – SHGs act as pressure groups through which pressure can be mounted on the government to act on important issues.

Self-Help Groups (SHGs)

- Enhancing the efficiency of government schemes – SHGs help implement and improve the efficiency of government schemes. They also help reduce corruption through social audits.
- Alternate source of livelihood/employment – SHGa help people earn their livelihood by providing vocational training, and also help improve their existing source of livelihood by offering tools, etc. They also help ease the dependency on agriculture.
- Impact on healthcare and housing – Financial inclusion due to SHGs has led to better family planning, reduced rates of child mortality, enhanced maternal health and also helped people fight diseases better by way of better nutrition, healthcare facilities and housing.
- Banking literacy – SHGs encourage people to save and promote banking literacy among the rural segment.

Self-Help Groups (SHGs)

Problems of Self Help Groups (SHGs)

- Need for extending this idea into the poorest families, which is not necessarily the case at present.
- Patriarchal mindset prevailing which prevents many women from coming forward.
- There are about 1.2 lakh branches of banks in rural areas as opposed to 6 lakh villages in the country. There is a need to expand banking amenities further.
- Sustainability and the quality of operations of such groups have been questionable.
- There is a need for monitoring cells to be established for SHGs across the country.
- The SHGs work on mutual trust. The deposits are not safe or secure.

Self-Help Groups (SHGs)

Way Forward for Effective Self-Help Groups

- The Government should create a supportive environment for the growth and development of the SHG movement. It should play the role of a facilitator and promoter.
- SHG Movement should be expanded to Credit Deficient Areas of the Country – such as Madhya Pradesh, Rajasthan, States of the North-East.
- Financial infrastructure should be expanded (including that of NABARD) by adopting extensive IT-enabled communication and capacity building measures in these States.
- Extension of Self-Help Groups to Urban/Peri-Urban Areas – efforts should be made to increase income generation abilities of the urban poor as there has been a rapid rise in urbanization and many people remain financially excluded.

Self-Help Groups (SHGs)

- Government functionaries should treat the poor and marginalized as viable and responsible customers and as possible entrepreneurs.
- SHG monitoring cell should be established in every state. The cell should have direct links with district and block level monitoring system. The cell should collect both quantitative and qualitative information.
- Commercial Banks and NABARD in collaboration with the State Government need to continuously innovate and design new financial products for these groups to meet their needs.

Self-Help Groups (SHGs)

Self Help Groups in India

- **Kudumbashree in Kerala**

  The Kudumbashree project was started in Kerala in 1998, as a community action to eradicate poverty. It has become the largest women-empowering project in India. There are 3 components namely, microcredit, entrepreneurship and empowerment. Kudumbashree is a government agency.

- **Mahila Aarthik Vikas Mahamandal (MAVIM) in Maharashtra**

  SHGs in Maharashtra were unable to cope with the growing volume and financial transactions and needed professional help. Community managed resource centre (CMRC) under MAVIM was launched to provide financial and livelihood services to SHGs. CMRC is self-sustaining and provides need-based services.

Thank You

Presented by- Dr. M.B Jadhav

S.B.B.alias Appasaheb Jedhe Arts Commerce & Science College, Pune.

Department Of Commerce

Piecemeal Distribution Of Cash

By
Dr. Survase Deepak K.


PARTNERSHIP

Piecemeal Distribution Of Cash

Piecemeal Distribution Of Cash

On a gradual realisation of assets, the cash realised is distributed in the following order to avoid the excess payment to any partner :

1. Expenses of realisation are to be paid in the first instance as these get preference over unsecured creditors. Then the debts of the firm to **third parties** must be paid out in full prior to any partner being paid any amount in respect of his loan and capital; **secured creditors** should get preference over unsecured creditors.

2. After the creditors have been paid off, the amount due to a partner as loan should be paid. When the loans are due to more than one partner, the cash available should be paid rateably.

3. After the payment of outside liabilities and loans due to the partners, the capitals of the partners are paid by two methods :

   (i) **Proportionate Capital** Method

   (ii) **Maximum Loss** Method

(i) Proportionate Capital Method :

If the capitals of the partners are in the ratio of their profit sharing arrangement, then each of them is paid out according to his capital ratio at each distribution. If the capitals of the partners are not in the profit sharing ratio, then the first cash available for distribution amongst the partners should be paid to those partners whose capitals are more than their profit sharing ratios to bring their capitals to their profit sharing levels.

Cash available for distribution amongst the partners cannot be distributed according to the profit and loss sharing ratio unless the capitals of the partners are in the profit and loss sharing ratio because that will not leave the unpaid balances of the capital accounts in the profit and loss sharing ratio of the partners.

ILLUSTRATION :

A, B and C share profits and losses in the proportion of ½, 1/3 and 1/6. Their Balance sheet is as follows :

Liabilities	Amount	Assets	Amount
Creditors	50,000	Land & Buildings	70,000
A's Loan	10,000	Plant and Machinery	40,000
A's Capital	50,000	Stock	25,000
B's Capital	10,000	Debtors	20,000
C's Capital	40,000	Cash	5,000

The partnership is dissolved and the assets are realised as follows :

1st Realisation	40,000
2nd Realisation	30,000
3rd Realisation	54,000
4th Realisation	7,000

Prepare a statement showing how the distribution should be made.

SOLUTION :

STATEMENT SHOWING DISTRIBUTION OF CASH

Particulars		Credito -rs	A's Loan	A's Capital	B's Capital	C's Capital
Amount Due Cash in hand paid to creditors		50,000 5,000	10,000	50,000	10,000	40,000
Balance due Amount of 1st realisation paid to creditors		45,000 40,000	10,000	50,000	10,000	40,000
Balance due Amount of 2nd realisation Less : Paid to Creditors	Rs. 30,000 5,000	5,000 5,000	10,000	50,000	10,000	40,000
Less : A's Loan paid	25,000 10,000		10,000 10,000	50,000	10,000	40,000
Less : Paid to C	15,000 15,000			50,000	10,000	40,000 15,000
Balance Due Amount of 3rd realisation Less : Paid to C	 54,000 8,333			50,000	10,000	25,000 8,333

Less : Paid to A and C	45,667 45,667			50,000 34,250	10,000	16,667 11,417
Balance Due Amount of 4th realisation Paid to A and C	 7,000 1,000			15,750 750	10,000 	5,250 250
 Less : Paid to A, B and C	6,000 6,000			15,000 3,000	10,000 2,000	5,000 1,000
Balance Unpaid/Loss on Realisation				12,000	8,000	4,000

(ii) Maximum Loss Method

An alternative method of piecemeal distribution of cash amongst partners is to calculate the maximum possible loss on every realisation after the outside liabilities and the partners' loans have been paid.

The amount available for distribution amongst partners is compared with the amount of capitals payable to partners and the maximum possible loss is ascertained on the assumption that in future assets will not realize any amount.

The maximum loss so ascertained is deducted from the capitals of the partners in the profit and loss sharing ratio and the balance left in the capital accounts after the deducting the maximum possible loss will be the amount payable to the partners.

But if a partner's share of maximum possible loss is more than the amount standing to the credit of his capital account, he should be treated as insolvent and his deficiency should be debited to the capital accounts of the other partners in their proportion of their capitals which stood on the dissolution date as stated in the case of *Garner vs. Murray.*

ILLUSTRATION :

Following is the Balance Sheet of X, Y and Z who share profits and losses equally :

Liabilities		Amount	Assets	Amount
Capital Accounts			Sundry Assets	60,000
X	29,000		Cash at bank	4,000
Y	20,000		Profit and Loss a/c	6,000
Z	11,000	60,000		
Creditors		10,000		

The firm dissolved on 1-1-2010 and assets were realised as follows :

First installment	Rs.	6,000	
Second installment		Rs.	9,000
Third installment	Rs.	15,000	
Last installment	Rs.	18,000	

Show the distribution of cash under Maximum Loss Method.

SOLUTION :

STATEMENT SHOWING DISTRIBUTION OF CASH

Particulars		Creditors	X's Capital	Y's capital	Z's Capital
Balance Due as per Balance Sheet		10,000	29,000	20,000	11,000
Less : Loss distributed among partners			2,000	2,000	2,000
			27,000	18,000	9,000
Balance of cash at bank paid to creditors		4,000			
		6,000			
1st Realisation					
Paid to Creditors	6,000	6,000			
		Nil			
	Nil				
2nd Realisation	9,000				
Maximum Loss Rs. 45,000			15,000	15,000	15,000
(i.e. Rs. 54,000- Rs. 9,000)			12,000	3,000	-6,000
			-3,600	-2,400	+6,000
Deficiency of Z o be borne by X & Y in Capital Ratio 3:2			8,400	600	Nil
Amount Paid to Partners	9,000		18,600	17,400	9,000


Thank You.

S.B.B.alias Appasaheb Jedhe Arts Commerce & Science College, Pune.

Department Of Commerce

PPT ON

Royalty Accounts

By

Dr. Survase Deepak K.

Royalty Accounts

The term royalty refers to the periodical payment based on output or sale for the use of a specific asset or right like mine, copyright or patent to its owner. The person who make the payment to the owner of the asset in exchange for the right to use his asset is known as lessee and the owner of the asset to whom payment is made is known as landlord.

Types of Royalties

There are three types of royalties:-

- Mining royalty
- Patent royalty
- Copyright royalty

Mining royalty:-

It is a periodical payment generally based on output ,made by lessee of a mine or quarry to the lessor or the landlord (i. e, owner of the mine or quarry)

Patent royalty:-

It is the periodical payment based on output ,made by the lessee of a patent or patent right to be lessor or the patentee (i. e, the holder of the patent right)

Copyright royalty:-

It is also the periodical payment based on sales ,made by the lessee of a copyright (i. e the publisher) to the lessor (i.e. the author)

Terms Used in Royalty Agreements

- There are some special terms which generally are used in royalty agreements. The meaning of such terms must be clear to the reader. The special terms are:
- **Landlord:-**The persons who gives out his some special rights over something say mining rights or patent rights or copyrights, on lease to another person for a consideration is called the landlord, or lessor or patentee or an author.
- **Lessee:-**The person who takes out the special rights from its owner on lease for consideration is called lessee or patentor or publisher.
- **Minimum rent or Dead rent:-**It was been stipulated that in case of low output or low sales, a certain sum of money will be payable in any case-even if the royalties based on output or sales are lower. Implying thereby that the sum payable is the minimum amount or actual royalties whichever is higher. The minimum sum is known as minimum rent or deeds rent. E.g. if a the patentee, allows B to use his patent on a royalty of Rs.2/unit.Produced subject to minimum of Rs.10000 then incase the output is 7000 units; it will be Rs.14000.

SHORTWORKING-

The excess of minimum rent over actual royalty calculated on the basis of output or sales is termed as shortworking. Normally shortworking are during gestation period or due to abnormal working condition during the early periods of lease as the activity level is low in that period.

RECOUPING SHORTWORKING-

Most of times, along with the stipulated for a minimum rent, there is a condition that if actual royalties are less than the minimum rent, the excess paid will be recoverable out of any surplus that there may be over the minimum rent in subsequent years. The right of getting back the excess made by the lessee in earlier years is called the right of recoupment of shortworking. The right of recoupment of shortworking can be:

- Restricted (i.e. fixed):-Recoupment only in the first few years of the agreement.
- Unrestricted (i.e. floating):-Recoupment in the year/few years following the year in which the shortworking occur

GROUND OR SYRFACE RENT-

It is the fixed yearly or half yearly rent payable by the lessee to the landlord in addition to the minimum rent.

Stoppage of Work

Due to Strike/ Lockout

Accounting Entries

In The Books Of

Lessor Or Landlord

- **[1] . WHEN THE ROYALTIES RECEIVED IS LESS THAN THE MINIMUM RENT AND SHORTWORKINGS ARE RECOVERABLE OUT OF FUTURE YEARS, THE FOLLOWING ENTRIES WILL BE MADE:**

[A] LESSEE'S ACCOUNT DR. (WITH MINIMUM RENT)
TO ROYALTIES RECEIVABLE ACCOUNT (WITH ACTUAL ROYALTIES)
TO SHORTWORKINGS SUSPENSE ACCOUNT (WITH THE DIFFERENCE)

[B] BANK ACCOUNT DR. (WITH THE AMOUNT RECEIVED)
TO LESSEE'S ACCOUNT

[C] ROYALTIES RECEIVABLE ACCOUNT DR. (WITH THE AMT OF ROYALTIES EARNED TRANSFERRED)
TO P& L ACCOUNT

- **2.WHEN THE ROYALTIES EARNED EXCEED THE MINIMUM RENT AND SHORTWORKINGS ARE RECOVERED, THE ENTRIES ARE AS FOLLOWS :**

[A] LESSEE'S ACCOUNT DR. (WITH THE AMT OF ROYALTIES EARNED)

TO ROYALTIES RECEIVABLE ACCOUNT

[B] SHORTWORKING SUSPENSE ACCOUNT DR. (WITH THE AMT OF SHORTWORKING RECOVERED)

TO LESSEE'S ACCOUNT

[C] BANK ACCOUNT DR. (WITH THE AMT DUE RECEIVED)

TO LESSEE'S ACCOUNT

[D] ROYALTIES RECEIVABLE ACCOUNT DR. (WITH THE AMT OF ACTUAL ROYALTIES EARNED)

TO P&L ACCOUNT

BUT IF THE SHORTWORKING IS IRRECOVERABLE IT SHOULD BE TRANSFERRED TO P&L ACCOUNT

Sub-Lease (Or Sub-Royalty

Sometimes, the terms of the original lease may empower the lessee to sublet a part of the lease to another person as a sub-lessee. The transfer of a part of the right held by the lessee to another lessee is sub-lessee. In such a case, the status of the original lessee will be two fold : as lessee paying royalties to the landlord and as sub-lessor receiving royalties from the sub-lessee. As lessee he maintains Royalties Payable Account, Shortworkings Account and Landlord's Account and as sub-lessor he maintains Royalties Receivable Account, Shortworkings Suspense Account and Sub-lessee's Account.


Thanks
to you all!

S. B. B. Alias APPASAHEB JEDHE ARTS, COMMERCE &
SCIENCE COLLEGE, SHUKRWAR PETH PUNE -2

COMPUTERISED ACCOUNTING ENVIRONMENT

Class : F. Y. B. Com

Subject : Financial Accounting

Topic : Computerized Accounting Environment

By. Prof. Dr. Survase Deepak K.

Introduction

Accounting plays an important role in recording financial transactions.

The American Accounting Association defines Accounting as " The process of identifying measuring and communicating economic information to permit informed judgments and decisions by the users of the information."

The American Institute of Certified Public Accountants defines accounting as " The art of recording, classifying and summarizing in a significant manner.

Features of accounting

- Accounting is concerned with only financial transactions.
- Accounting include recording of transactions in primary books.
- After recording the transactions are to be grouped as per the basic rules of accounting.
- Accounting refers to maintenance of records as per the Generally Accepted Accounting Principles.

Computerized Accounting

Computer is a fast and accurate electronic processing machine which is designed to accept the data, store the data, process them and produce the required output as per the instructions given by the programmer. In modern business world, strategic business decisions are quickly taken with the help of an effective computerized accounting system.

Basic operations of computerized system

- Creation of accounting documents : for e.g. bills
- Recording of transactions :
- Storage of accounting information :
- Processing the data :
- Analyzing and preparation of reports
- Output for the user

Features of Computerized Accounting systems

- Fast recording
- Arithmetical accuracy
- Immediate availability of reports
- Transparency
- User friendly
- Grouping of accounts

Significance of computerized Accounting System

- Time saving
- Cost effective
- Systematic and upto date records
- Huge storage capacity
- Compact
- Flexibility
- Useful for decision making
- Suitability
- Multi-user facility

Limitations of CAS

- Costly software
- Hardware requirements
- Trained staff
- Open access
- Power failure
- Computer viruses
- Problem in case of loss of data
- alteration

Concept of Grouping of Accounts

Appreciate grouping of accounts is required to be done in manual as well as computerized accounting system.

Ledgers which have transactions of the same nature are classified under one group. The three types of accounts maintained for transactions

Real Accounts : Furniture, Cash, building etc.

Personal Accounts

Nominal Accounts

Codification of Accounts

- Binary coding
- Symbol
- Numeric codes
- Group of bits

General Accounting Reposts

- Balance Sheet
- Profit and Loss Account
- Trial Balance
- Statements of Accounts
- Account Books
- Receivables and Payables
- Inventory books and reposts
- Statutory reposts
- Other reports

Voucher Entry

- Payment Voucher
- Receipt Voucher
- Contra Voucher
- Journal Voucher
- Sales Voucher
- Purchase Voucher


Thanks
to you all!

Welcome

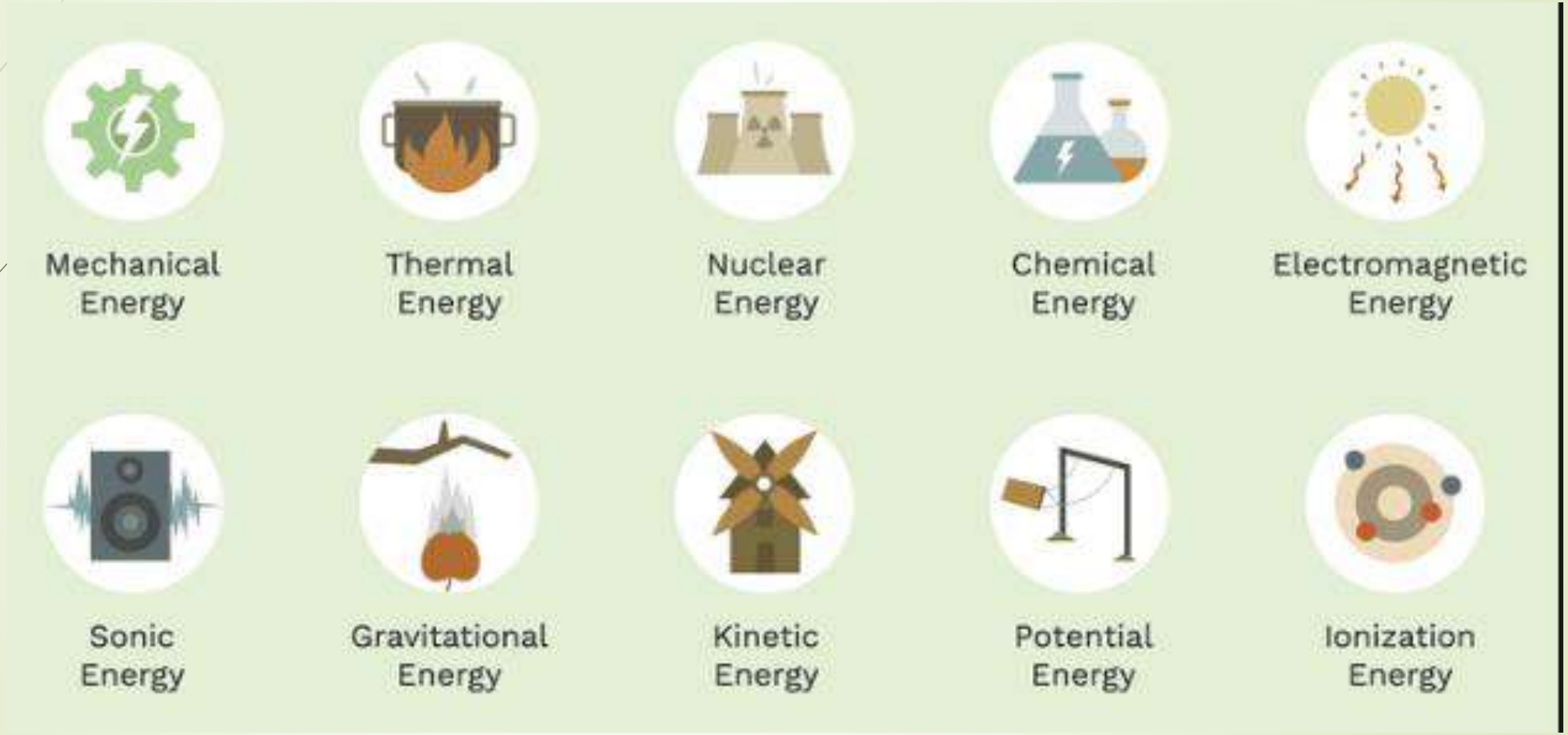
Renewable Energy

by Dr. Archana Gaikwad

What is energy?

- **Energy** is the ability to do work or cause a change.
- Energy has many forms. Even though one form can change into another form, energy cannot be made or destroyed.
- Different forms of energy, including mechanical, light, thermal, electrical, and sound energy, have many uses.

Types of energy



Two categories of Energy

- Renewable
- Non-Renewable

Non-Renewable Energy

What Is Non-Renewable Energy?

Non-renewable energy comes from sources that will run out or will not be replenished in our lifetimes—or even in many, many lifetimes.

Most non-renewable energy sources are fossil fuels: coal, petroleum, and natural gas. Carbon is the main element in fossil fuels.

Renewable energy

- Renewable energy – Any sustainable energy source that comes from natural environment.
- Sustainable energy – is the sustainable provision of energy that meets the need of the present without compromising the ability of the future generations to meet their needs.
- Some aspects of renewable energy
  - It exists perpetually and abundant in environment.
  - Ready to be harnessed and inexhaustible
  - It is a clean alternative to fossil fuel

Renewable energy - Types

- Solar
- Wind
- Tidal
- Hydroelectricity
- Biomass

Solar energy

Pros

- Stable price levels compared to other energy sources
- Cost per energy unit is zero after one-time investment
- Solar energy is a renewable energy source
- Solar energy is a proven technology with a long history
- Solar power is sustainable literally until the end of time
- Most effective power source for remote areas
- Solar panels can be used all over the world
- Solar power is available all year long and can be stored for rainy days
- Solar energy can be cheap
- Due to technological progress, solar energy will become even cheaper in the future
- Solar power can be generated silently compared to other energy sources
- People who don't have space for solar panels can join "solar communities"
- Installation on rooftops is quite space-efficient

Cons

- Initial production of solar panels implies significant pollution
- High upfront costs of solar panels
- Solar energy storages can be expensive
- Sun intensity varies over the year
- Sun energy cannot be generated at nighttime
- You might need help to install solar panels correctly
- Pollution like heavy smog can reduce energy production from solar panels
- The space on your roof may not be sufficient to meet your power demand
- Solar farms need large areas of land
- Some resources needed for the production of solar power are quite scarce
- Solar panels imply the production of hazardous waste
- Solar panels often can't be moved to a new home
- Solar panels vary in quality
- Many people regard solar panels as visually unattractive

Wind energy

Advantages :

- Wind power industry creates employment opportunities
- Has relatively low operating expenses
- Used for generating electricity

Disadvantages

- Wind turbines can only be successfully installed in specific areas
- Wind turbines are very difficult and expensive to install
- Wind blades include safety concerns for individuals working near it.
- To be efficient and effective, it necessitates a continuous supply of wind energy and is wholly unpredictable

Tide Energy

Tides are a natural phenomenon that occurs periodically and the waves that generate in this process can be a good source of energy. Tides have a great potential for energy creation.

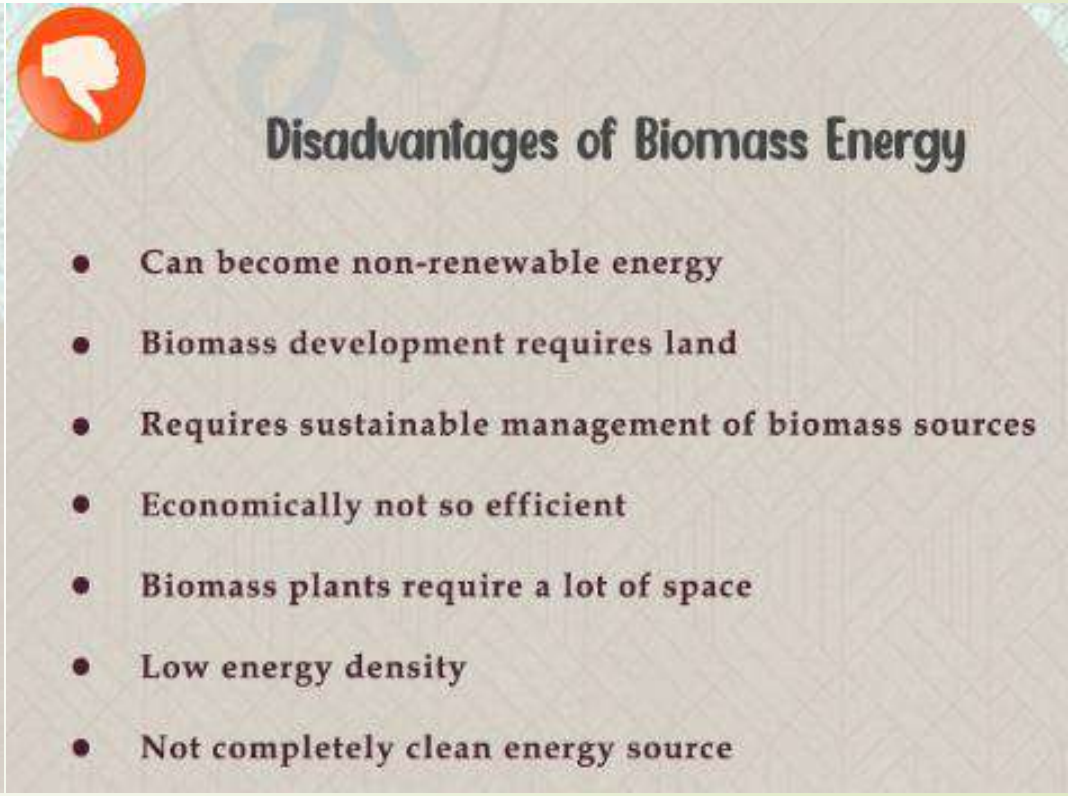
Advantages of Tidal Energy	Disadvantages of Tidal Energy
·Renewable Source of Energy:	·Impact on marine life:
·Environment-friendly:	·Maintenance and Corrosion:
·Tides are predictable:	·Locational requirements:
·Generates energy at low speed:	·Costly Technology:
·Durable equipment:	·Depends on nature:

Hydroelectricity

Hydroelectric power is electrical energy generated by hydropower. Hydropower is utilized through the gravitational force of falling or moving water.

Biomass

Biomass is organic, which means it is made from material that comes from living organisms, such as plants and animals. The most common biomass energy materials are plants, wood, and waste. These are also known as biomass feedstocks. Biomass energy is energy generated or produced by living or once-living organisms. The energy from these organisms is burned to create heat or converted into electricity. It is a renewable energy source.



Question and Answers

Thank you !

Dr.Vishal Gaikwad

You tub Educational Videos channel Link

👇👇👇

https://youtube.com/@dr.vishalgaikwad8320?si=m8xlid5syUitjQmz

----

Videos Link

👇👇👇

SYBCom Banking & Finance -I

👇👇👇 https://youtu.be/gPZwzKhVNu8?si=hKFanGpbolCAbsQW

SYBA Financial system -I

👇👇👇

https://youtu.be/FrmoM_5Ec1U?si=8jztjYLYYYoI_ybG

All Information about NSS

👇👇👇

https://youtu.be/Tw2SR3zFlsQ?si=gGLdRNzxa7SuhW4s

SYBCom Macro Economics

👇👇👇

https://youtu.be/AFHaQGpYjcs?si=KOoNIF15fQ1Di8c4

FYBA Indian Economic Environment -I

👇👇👇

https://youtu.be/LVjLjxocruI?si=yanp27oRFuz8YY3B

https://youtube.com/@drsunitasatishsakure294?si=C5TBKcboKI8qzuG0

CHAPTER 1:
Data Condensation and Presentation of Data

1.1 Definition, importance, scope and limitations of statistics.

1.2 Data Condensation: Types of data (Primary and secondary), Attributes and variables, discrete and Continuous variables.

1.3 Graphical Representation: Histogram, Ogive Curves, Steam and leaf chart. [Note: Theory paper will contain only procedures. Problems to be included in practical]

1.4 Numerical problems related to real life situations.

1.1 Definition, importance, scope and limitations of statistics.

Definition of Statistics:

Statistics is a branch of mathematical science which deals with:

- ❑Collection of data
- ❑Classification or tabulation of data
- ❑Analysis of data
- ❑Interpretation of results.

1.2 Data Condensation: Types of data (Primary and secondary), Attributes and variables, discrete and Continuous variables.

1) Data: It is the information in the form of ‘Numbers’ or ‘Categories’.
   Ex. i) Salaries of employees of a company
   ii) Blood groups of blood donors.
2) Statistical data: The observations or units in the population or in the sample is called as Statistical data.
3) Raw Data: It is the statistical data before any further processing or data before any mathematical treatments.
   Ex. Marks of students.
   45,58,25,29,75,35,48,68,15,85,45,78,59,65,75,95,65,42,8,25,67.

❑ Attributes and variables:

➢**Attribute**:

A qualitative characteristics which can not be measured by numbers but can be described in categories called as Attributes.

Ex: Gender, Blood groups, States of country, Names of vehicles etc.

Above characteristics can be characterized by their qualities or categories, hence these are called as Attributes.

➢**Variable**:

A quantitative characteristics which can be measured by numbers is called as Variable.

Ex: Age, Height , Weight, Blood pressure, Temperature, Marks, Heart beat rate, Mileage of car, Speed, Distance, Salary, Income, Bills, Price, Rent, etc. Data File

Type of Variables:

- There are two types of variables:

1. Discrete variable
2. Continuous variable

Discrete variable:

A variable which can take isolated values and it has finite possible values is called as Discrete variable.

Ex. i) Number of students present in class

ii) Number of workers in a factory

iii) Number of children in a family

Continuous Variable:

It is a variable which can take infinite possible values within certain interval or range.

Ex.

i. Height / Weight of a person

ii. Temperature of a certain place

iii. Speed of a vehicle.

Classification of Data:

- After collection of data, next step is classification of data.
- Classification is a grouping of observations in different classes on the basis of suitable criteria.

Objective of Classification:

1) To condense the mass of data in such a way that similarities and dissimilarities can be easily understood.
2) To facilitate comparison.
3) To enable the statistical treatment of collected data.
4) To give more importance for necessary information and dropping unnecessary information.

Types of Classification of data:

1) Geographical classification
2) Chronological classification
3) Qualitative classification
4) Quantitative classification.

1) Geographical classification:

Classification according to locational or geographical differences are called as geographical classification. Data

Ex. Villages, Cities, States, Countries, Sea area, Mountain Area, Rivers.

2) Chronological classification:

The classification based on time period that is: Hourly, Daily, Weekly, Monthly, yearly etc. are called as chronological classification or also called as time series. Data

Ex. Yearly sales of Vehicles/Mobiles etc.

3) Qualitative Classification:

The classification on different types of categories of Attribute is called as Qualitative classification.

There are two types of Qualitative classification.

i) Simple Classification: The classification which has only two possible categories is called as Simple classification. Data

Ex. Yes/No, True/False, Domestic/International, Head/Tail.

ii) Manifold Classification: The classification which has more than two possible categories is called as Manifold classification. Data

Ex. Blood groups, Nationality, Religion

4) Quantitative Classification:

The classification of data according to some characteristics that can be measured numerically.

For Ex.

i) height, weight, income, age, sales, etc

ii) The employees of an institute may be classified according to their pay scales as follows:

Table-13.3: Quantitative Classification of 840 Employees According to their Pay Scales

Scale of Pay	Number of Employees
9300 - 34800	467
15600 - 39100	215
37400 - 67000	158
Total	840

1.3 Classification of variables:

1) Discrete series of observations:

Each possible value of the variable forms a class is said to form a discrete series of observations.

For Ex. i) Number of children in a family

Number of children	Tally marks	Number of families
0	|||||	5
1	||||| ||	7
2	||||| ||||| ||	12
3	|||||	5
4	||||| |	6
5	|||	3
6	|||	3

Continued...

2) Class:

The Variables that are discrete or continuous are classified by dividing the total range into suitable number of intervals and each interval represents a class.

Range = 100-0=100

And classes = 10

Then class = 100/10 = 10

3) Class limits:

The two numbers designating the class are called class limits.

Lower value of the class is called lower limit and upper value is called upper class limit.

4. Class width:

It is the difference between two successive lower limits or two successive upper limits or difference between upper and lower limit of the class.

If we have class intervals in which Upper limits is not equal to lower limit of its succeeding class interval, then class width h is given by:

Class Width = h = Upper limit of Second class- Upper limit of First class

Or Class Width = h = Lower limit of Second class- Lower limit of First class

Frequency Distribution

- The **class width** is the distance between lower (or upper) limits of consecutive classes.

  – Example: 6 – 1 = 5

Class	Frequency
1 – 5	5
6 – 10	8
11 – 15	6
16 – 20	8
21 – 25	5
26 – 30	4

If we have class intervals in which Upper limits is equal to lower limit of its succeeding class interval, then class width h is given by:

Class Width = h = Upper class limit – Lower class limit

(Note: Class width is also called as Class size)

Class Interval	Class Limits		Class Size
	Lower Limit	Upper Limit	
0 - 10	0	10	10 - 0 = 10
10 - 20			
20 - 30			
30 - 40			

If class width is not known, we use following formula to get class width:

$$h = \frac{L-S}{k}$$

Where,

L = Largest observation in the data

S= Smallest observation in the data

k = Number of classes

And k can be determined by Sturges' rule and it is given by formula:

$$k = 1 + 3.322 * Log_{10}N$$

And N = Total observations in the data set.

- Another approach is: k = Number of classes = $\sqrt{N}$

5. Class Mark or Mid value:

It is the mid-point of class interval:

That is:

$$Mid\ Value = \frac{Lower\ Class\ Limit + Upper\ Class\ Limit}{2}$$

Age (years) of Best actor when Oscar was won	Mid points	Class Width
20-29	$\frac{20+29}{2} = 24.5$	10
30-39	$\frac{30+39}{2} = 34.5$	10
40-49	$\frac{40+49}{2} = 44.5$	10
50-59	$\frac{50+59}{2} = 54.5$	10
60-69	$\frac{60+69}{2} = 64.5$	10
70-79	$\frac{70+79}{2} = 74.5$	10

6. Open End Classes:

Classes having only one limit are known as open end classes.

Ex.

Marks	*Number of Students*
Less than 10	4
10 – 20	8
20 – 30	5
30 – 40	3
40 and above	10

7. Class Boundaries:

If we have class intervals in which Upper limit of a class is not equal to lower limit of its succeeding class interval, then such classes can be extended to form a continuous frequency distribution. Such a extended limits are called class boundaries.

Step 1) Find Gap = Lower limit of second class – Upper limit of first class

Step 2) Find Gap/2

Step 3) Subtract Gap/2 from each lower limit and add Gap/2 in each upper limit

Thus

Lower Class Boundary = Lower Class Limit – Gap/2

Upper Class Boundary = Upper Class Limit + Gap/2

- Gap = 49 – 48 = 1
- Gap/2 = ½ = 0.5
- Subtract 0.5 each lower limit
- Add 0.5 in each upper limit
- 44-48 44-0.5 = 43.5 and 48+0.5 = 48.5
- 43.5 to 48.5

Class Limit	Class boundary
44 - 48	43.50 - 48.50
49 - 53	48.50 - 53.50
54 - 58	53.50 - 58.50
59 - 63	58.50 - 63.50
64 - 68	63.50 - 68.50
69 - 73	68.50 - 73.50

8. Class frequency:

The number of observations corresponding to each class gives that class frequency.

Number of children	Tally marks	Number of families
0	𝍸	5
1	𝍸 ||	7
2	𝍸 𝍸 ||	12
3	𝍸	5
4	𝍸 |	6
5	|||	3
6	|||	3

Weight in kg (Class Interval)	Tally marks	No. of Students (Frequency)
44-48	III	3
49-53	IIII	4
54-58	𝍸	5
59-63	𝍸 II	7
64-68	𝍸 IIII	9
69-73	𝍸 III	8
Total	–	36

9. Inclusive type of Classification:

The classification in which the classes are defined or formed such way that both the limits are included in the same class.

Weight in kg (Class Interval)	Tally marks	No. of Students (Frequency)
44-48	III	3
49-53	IIII	4
54-58	𝍸	5
59-63	𝍸 II	7
64-68	𝍸 IIII	9
69-73	𝍸 III	8
Total	–	36

In this classification, lower and upper limit 44 and 48 are included in the class 44-48, lower and upper limit 49 and 53 are included in the class 49-53 and so on.

10. Exclusive type of Classification:

The classification in which the classes are defined or formed by excluding upper limit in the same class and we include this upper limit value in next class interval.

Class interval	Frequency
0–10	3
10–20	8
20–30	9
30–40	15
40–50	5
	Total = 40

Class interval	Tally marks	Frequency
60-75	II	2
75-90	IIII	4
90-105	𝍸 I	6
105-120	II	2
120-135	𝍸 I	6
135-150	IIII	4

In this classification, upper limit 10 is excluded from the class 0-10 and we include this value 10 in next class 10-20, similarly exclude 20 from 10-20 and include 20 in next class 20-30 and so on.

11. Frequency Distribution:

The number of observations belonging to a class is called as frequency of that class and various classes together with their frequencies is called a frequency distribution.

There are two types:

i) Ungrouped or Discrete frequency distribution:

In this classification, we form classes according values of the variable and then we count the frequency of each value.

Number of children	Tally marks	Number of families
0	|||||	5
1	||||| ||	7
2	||||| ||||| ||	12
3	|||||	5
4	||||| |	6
5	|||	3
6	|||	3

- Discrete data: possible values are countable

Example: An advertiser asks 200 customers how many days per week they read the daily newspaper.

Number of days read	Frequency
0	44
1	24
2	18
3	16
4	20
5	22
6	26
7	30
Total	200

ii. Grouped or Continuous Frequency Distribution:

When the number of observations are very large, so that we can not form a class for each possible value, so we divide total range of observations into suitable number of intervals and each interval is called as class. Next we count number of observations that fall in each class and write against respective class.

Thus table obtained of class intervals with frequencies called as a Grouped or Continuous Frequency Distribution.

Class interval	Tally marks	Frequency
60-75	II	2
75-90	IIII	4
90-105	𝍸I	6
105-120	II	2
120-135	𝍸I	6
135-150	IIII	4

12. Relative frequency:

Relative frequency of a class is defined as the ratio of the class frequency to total frequency.

That is: $Relative\ Frequency = \frac{Frequency\ of\ that\ class}{Total\ Frequency}$

The classes together with their relative frequencies is called relative frequency distribution.

Relative frequency table

Weight (in Kg.)	No. of persons (f_i)	Relative frequency
60 - 62	5	$\frac{5}{100} \times 5\%$ or 0.05
63 - 65	18	$\frac{18}{100} \times 18\%$ or 0.18
66 - 68	42	$\frac{42}{100} \times 42\%$ or 0.42
69 - 71	27	$\frac{27}{100} \times 27\%$ or 0.27
72 - 74	8	$\frac{8}{100} \times 8\%$ or 0.08
Total	$\Sigma f_i = 100$	

class interval	frequency Fi	Relative Frequency R Fi	
0 - 20	4	=4/15	0.27
20 - 40	1	=1/15	0.07
40 - 60	4	=4/15	0.27
60 - 80	1	=1/15	0.07
80 - 100	5	=5/15	0.33
sum	15		1

13. Frequency Density:

Frequency density of a class is the ratio of the class frequency to class width.

That is: $Frequency\ Denisty = \frac{Class\ Frequency}{Class\ Width}$

It is used when class widths are not uniform, that is class widths are different for each class interval.

HEIGHT (CM)	FREQUENCY	CLASS WIDTH	FREQUENCY DENSITY
$65 < h \leq 75$	2	10	2/10 = 0.2
$75 < h \leq 80$	7	5	7/5 = 1.4
$80 < h \leq 90$	21	10	21/10 = 2.1
$90 < h \leq 105$	15	15	15/15 = 1
$105 < h \leq 110$	12	5	12/5 = 2.4

Frequency Densities

- To calculate the frequency densities, we use a table as shown here:

Mass (Kg)	Class width	Frequency	Frequency Density
6 – 8	3	4	$\frac{4}{3} = 1\frac{1}{3}$
9 – 11	3	6	$\frac{6}{3} = 2$
12 – 17	6	10	$\frac{10}{6} = 1\frac{2}{3}$
18 – 20	3	3	$\frac{3}{3} = 1$
21 – 29	9	12	$\frac{12}{9} = 1\frac{1}{3}$

Cumulative Frequency Distribution:

❖Cumulative Frequency:

When frequencies are added they are called as cumulative frequencies.

There are two types of cumulative frequencies:

i. Less than cumulative frequency

ii. More than cumulative frequency

i. Less than cumulative frequency

When frequencies are added from top to bottom and obtained cumulative frequencies which give the number of observations less than given values are called as less than cumulative frequencies.

Less than cumulative frequency of a given class is the number of observations having their values less than the upper boundary of that class.

Classes	Frequency	Upper Boundary		Cumulative Frequency calculations	Less than Cumulative Frequency
0--10	3	10	Less than 10	3	3
10--20	8	20	Less than 20	=3+8 = 11	11
20--30	11	30	Less than 30	=11+11 = 22	22
30--40	14	40	Less than 40	=22+14 = 36	36
40--50	20	50	Less than 50	=36+20 = 56	56
50--60	17	60	Less than 60	=56+17 = 73	73
60--70	13	70	Less than 70	=73+13 = 86	86
70--80	13	80	Less than 80	=86+13 = 99	99
80--90	12	90	Less than 90	=99+12 = 111	111
90--100	7	100	Less than 100	=111+7 = 118	118

ii. More than cumulative frequency

When frequencies are added from bottom to top and obtained cumulative frequencies which give the number of observations more than given values are called as more than cumulative frequencies.

More than cumulative frequency of a given class is the number of observations having their values more than the lower boundary of that class.

Classes	Frequency	Lower Boundary		Cumulative Frequency calculations	More than Cumulative Frequency
0--10	3	0	More than 0	=115+3 = 118	118
10--20	8	10	More than 10	=107+8 = 115	115
20--30	11	20	More than 20	=96+11 = 107	107
30--40	14	30	More than 30	=82+14 = 96	96
40--50	20	40	More than 40	=62+20 = 82	82
50--60	17	50	More than 50	=45+17 = 62	62
60--70	13	60	More than 60	=32+13 = 45	45
70--80	13	70	More than 70	=19+13 = 32	32
80--90	12	80	More than 80	=7+12 = 19	19
90--100	7	90	More than 90	7	7

Graphical Representation of Frequency Distribution:

i) Histogram

ii) Stem and Leaf Chart

iii) Ogive or Cumulative frequency curve

Histogram:

- In this graph grouped data is represented by series of adjacent rectangles.
- The base of each rectangle is the class interval of that class
- If classes are not continuous or classes are discontinuous, then they are to be converted into continuous classes by converting the limits in class boundaries.
- The height of each rectangle is proportional to:
  - The Frequency of the corresponding class if class widths are uniform
  - The frequency densities of the corresponding class if class widths are not uniform

Intervals	Frequency
0 - 5	2
5 - 10	2
10 - 15	5
15 - 20	5
20 - 25	3
25 - 30	3