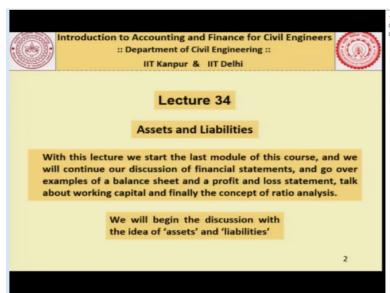
#### Introduction to Accounting and Finance for Civil Engineers Prof. Sudhir Misra Dept. Civil Engineering Indian Institute of Technology-Kanpur

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# Lecture-34 Assets and Liabilities

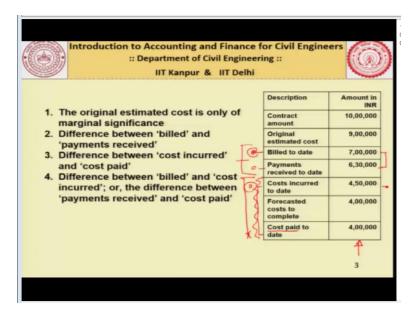
Namaskar and welcome once again to this course accounting and finance for civil engineers, this is lecture 34 we are talking about assets and liabilities, with this lecture we start the last module of this course.

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And we will continue our discussion of financial statements and go over examples of a balance sheet and a profit and loss statement, talk about working capital and finally the concept of ratio analysis. So, this is what we have on the gender for this week, today we will focus our discussions on assets and liabilities.

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Now however before we get started with the discussion on assets and liabilities let me just go over the few things on this particular table which I had showed to you on revenue recognization if you would recall from last time, one thing that you would like to notice or I would like to point out to you and you should careful about that and you should take a note, is that the original estimated cost which was 9 lakhs is only of marginal significance.

After the project has been actually awarded and is being executed, after that it is only the contract value which is of importance as far as the cost of the project is concerned. There is no value for the other is no reason to talk is still in terms of the estimated cost. So, that was the small thing, the second thing is the difference between bill and payments receipt, so we have the bill amount here and the payment received here.

So, why should they be a difference between these 2, because as I mentioned at that time also and I am retreating now this discussion has been done with the focus on the contracting company, that is the contractor carrying out jobs submits the bills for the work which has been done as running a count bills and whatever it is to the client. The client his office accounts, the technical office and so on.

They have to verify the kinds of claims being made whether the particular work has been done, whether it is satisfactory done and so on and so forth. So, there is some processing time involved

as for as the bills received from the contractor and the payment made to the contractor, that could be finite times it is not a day or 2 could take about a week. In fact certain contracts could possibly have provisions that the bills will be cleared at the clients and within 2 weeks and so on ok.

Then we have the difference between cost incurred and cost paid. Now this and this value here 4.5 lakhs and 4 lakhs. Now this is exactly the kind of thing again but this time on the contractor side, that is there may be sub-contractors, there may be suppliers who have supplied the material, who have supplied certain services. And that cost has been beam to be incurred, those bills may be pending in the contractor's office.

And they have not yet be paid, so when we talk of cost paid we talking of the payments which have been made by the contractor to the suppliers and vendors where as cost incurred could be higher than that. Now the last thing is, is there a difference between billed and cost incurred. So, there is a bill here and there is a cost incurred here, what I want to point out to you is that at the end of it.

There can be a major difference between billing and cost being incurred, payments received and cost being incurred and so on which means that if there is a delay between this part here that is the contractor is not getting his payments from the clients office does it mean necessarily that he will not, he should not, he need not pay his suppliers and vendors, that is the question that you have to answer, at the end of it in a manual speaking is the contractor can say that look I have not receive the payment from the client.

And therefore I cannot pay to you but that is not a very convincing kind of an argument, the supplier of the vendor can very say that look I have supplied you the material, please release that payment whether you get the reimbursement for it from the client or not is not my problem. And that is where what comes important, it becomes important for us to understand that the contractor should be such that.

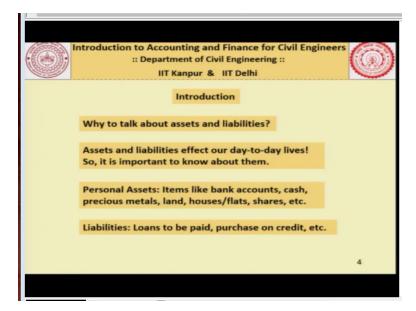
He should be having enough resources of his own to be able to take care of the payments which are happening here that is his suppliers of vendors without depending a 100% on the payments from the clients that is where we need to understand and examine the financial sounds of the contractor. When we examine financial soundness this is what we are looking at, we are trying to figure out that whether the contractor has the where with all to be able to survive, to be able to pay a sub-contractors and vendors and suppliers.

If there is a delay on account of payment being reduce from the client. Now there can be 100s of reason for the delay for the bills being passed by the client. There may be situation that they will disallow a certain payment being requested they will say that no this is not an extra item it cannot be paid, it cannot be paid at least right now. You may go into some kind of an appeal you may go and appeal to higher authority within the client and so on and try to get your payment released.

But they may say that out of a claim of a 100 we are willing to pay you about 80 and the remaining 20s not admissible. And that cost has already being incurred, so that is where we have to understand that this side of the discussion is one side of the discussion where the contractor is dealing with his sub-contractor's suppliers and vendors. And this side is what the contractor's dealing with the client, these 2 things can be independent.

Now as I mentioned to you last time please try to create a similar table for different points and time as the project moves on. And then you will realize and lot of very interesting things that may happen there something which will leave out as for as this courses concern will probably talk about it some are the time or may be forum I will give you some examples, with this let me go back to our original topic for the discussion today that is assets and liabilities, why to talk about assets and liabilities.

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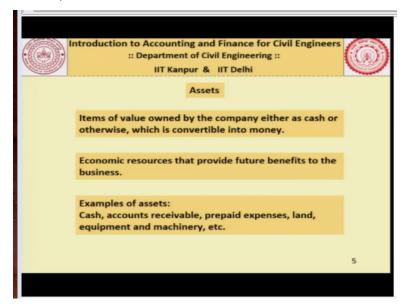
Assets and liabilities affect our day-today lives, so it is important to know about them. When it comes to assets as for as personal assets occurs there I mean all of us may have some bank accounts, some fixed deposits, some shares, some land, whatever it is. So these are personal assets, they add value to my portfolio, what is an individual's work, what are the liabilities loans to be paid, purchases made on credit and so on.

So obviously personal assets or assets for that matter is something which you own and liabilities is something which you own, that is you have a loan, you have to pay that. One has to very careful and that is what we do in daily life we do not want our liabilities to exceed beyond what we can pay our paying capacity and that is the one largely by the kind of assets that we may have, there is another part of it which is that there may be some assets which we are likely to get.

There may be a fixed deposit which may mature, there may be some gift which or may be getting I know that I will get this money in 1 month, 2 months, 6 months. This land will get transfer to me in 1 month, 6 months and so on, so my portfolio as for as asset is concerned is changes with time and what we have to see all the time is a balance of assets and liabilities. And that exactly is the financial statements job.

A financial statement shows what are your current assets, what are your current liabilities then we will talk about long term assets, long term liabilities and so on that is what are agenda of a today is, now what is asset.

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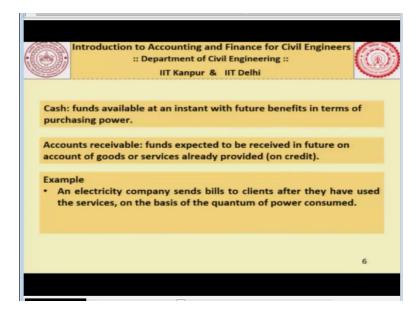


Items of value owned by the company either as cash or otherwise which is convertible to money. It has to have value of course we are talking about it as a layman, we are not talking about assets from a very legal stand point and I am leaving it to you to think about it a little bit, look up a legal definition of an asset what are the question that you should answer in the affirmative or the negative in order that in asset qualifies to be in the company's name.

It should be legally acquired and so on and so far, so that is the legal part of it. But today we are not talking of that we are talking of a layman's accounting side of it which says that items of value owned by the company either as cash or otherwise which is convertible to money, that is what an asset is. It is necessary that the asset is owned by the company sub-contractor's equipment for example cannot be your assets even if they are working at your site to your job.

Economic resources that provide future benefits for the business and examples of assets could be include cash, accounts receivable, prepaid expenses, land, equipment, machinery and so on. So, these are all examples of assets as for as the company's concerned.

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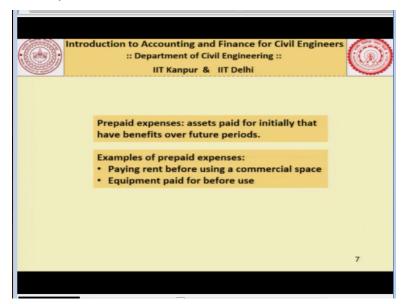
Cash is funds available at an instant with future benefits in terms of purchasing power. So cash is the most easily understood form of an asset, accounts receivable is funds expected to be received in future on account of goods or services already provided on credit. So we are talked about it at some point and time when we said that look an electricity company when it supplies power to you and bills you later.

Then those are the kind of examples for accounts receivable, that is the services already being rendered and the payment has to be yet received, examples of this could be like this that is what I have already said electric company sends bills to clients after they have uses services on the base of the quantum of power consumed, a prepaid meter that we have now does not qualify under this. Because there the consumer has already paid a certain amount of money for the power that they will consume.

We are here we are talking a more of a postpaid connection if you want to talk in terms of the (()) (11:26) yesterday as far as mobile phones is concerned that you avail the services and then based on the quantum of usage the bill is sent to you. So that becomes accounts receivable as for as the companies concerned and that becomes a liability for you because you are using that service but you are not paying for it. But the fares that you are not paying for it today does not mean that you will never pay it, the fact that you will pay off for it at some point in time means that you are continuing to incur and increase your liability.

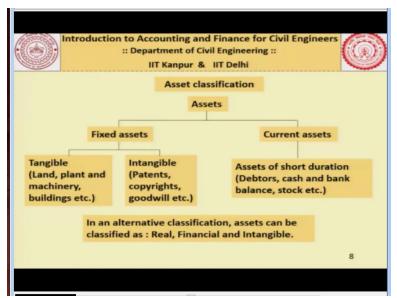
Thus while the company waits for it consumers to pay the bills the company considers unpaid invoices as accounts receivable.

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Prepaid expenses assets paid for initially that have the benefits over future periods and examples of prepaid expenses would be paying the rent before using a commercial space or equipment paid for before use. These would be examples of prepaid expenses.

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Now here is a picture which tells us a little bit more about assets and their classification, we have 2 basic classifications fixed assets and current assets. And within the fixed assets we can talk in

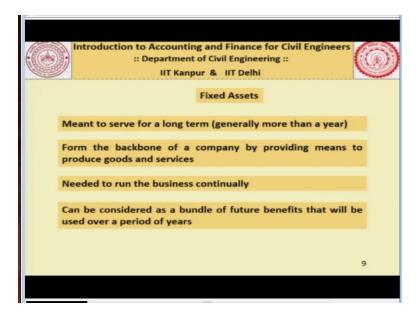
terms of tangible assets which could be land, plant and machinery, buildings and so on that is very simple way of looking at it. Tangible is something which you can have a physical presence of and that is lands, plant and equipment buildings.

These are all tangible fixed assets, there are intangible fixed assets such as patents, copyrights, good will and so on. And then there is another classification which says there are current assets that is assets of short duration, for example debtor's, cash and bank balance stock and so on. So, you can imagine the direction in which we are going as far as this discussion is concerned, everything is an asset cash to bank balances to stocks to land all these have values.

They have a fixed value and you have a car, you may a house, you may have a flat, you may have land, you may have some shares, may you have some fixed deposits, you may have some savings bank account and some cash. Now the point is how easily can these assets be converted to cash because at the end of it unless we are talking of a potter system that here is a piece of land please take this land and give me something else it will not work.

We are talking of a system where the values have to be assigned and so on. Therefore we are moving in a direction where there are fixed assets which takes a little bit longer to convert to cash and there are current assets which are easier to convert to cash. So that is the kind of direction in which we are moving as for as this slide is concerned it is a classification of assets which is fixed assets, current assets and divided as shown. In an alternative classification of assets they can be classified as real, financial and intangible.

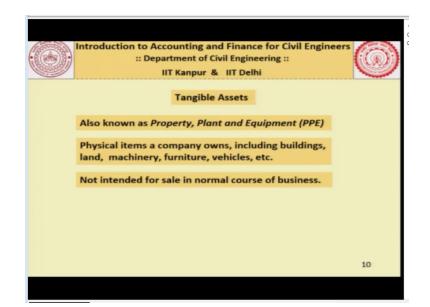
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So, now let us spend a little bit more time on fixed assets, they are meant for a long term usually more than a year. So we do not get into fixed assets today and get out of them tomorrow. We do not acquire a fixed assets for short periods of time, the amount of effort involve, the amount of dispose involved is larger. Therefore as for as fixed asset is concerned it is usually for more than a year, they form the back bone of a company by providing the means to produce goods and services.

They are needed to run the business continuously and can be considered as a bundle of future benefits that will be used over period of years. So that is what we attribute to as for as fixed asset is concerned.

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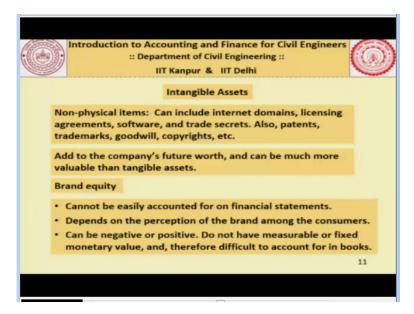


Now let us talk about tangible assets also known as property, plant and equipment that is PPE and physical items a company owns including buildings, land, machinery, furniture, vehicles etc. they all command a tangible assets. And they are not again intended for sale in a normal course of business if you are construction company particularly and you own the machinery. You may get rid of the machinery you may sell it as a scrap.

But that is only after the service life and that is not here normal scope of work, that is not be normal business that you are in a construction companies not in the business of selling and buying property. They are in the business of construction, a real estate company for them buying and selling property is a matter of business, for them a sale of a property is a normal course of business not for a construction company.

Therefore we have to be careful when we talk of tangible assets or fixed assets. We have to be also aware of what is the normal business as for as that company's concerned, when it comes to intangible assets.

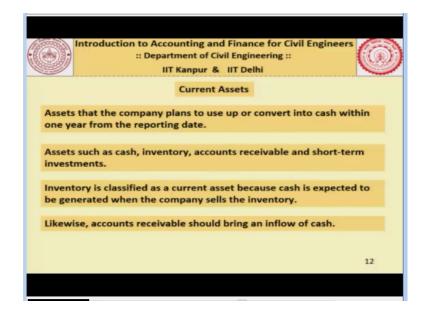
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These are non-physical items and can include internet domains, licensing agreements, software and trade secrets patents, trademarks, goodwill and copyrights. These are the non-physical intangible assets, but they also add to company's worth and can be much more valuable at times than the tangible assets. Brand equity is another intangible asset, now the problem with these intangible assets is that they cannot be easily accounted for in financial statements.

Because it is very difficult to assign a particular value to it, you cannot say that the brand equity of a company is worth 10 crores, it is impossible to do that. And that is why it is cannot be easily accounted for in financial statements and depends on the perception of the brand among the consumers can be negative or positive. And we do not have a measurable or fixed monetary value and therefore difficult to account for in books.

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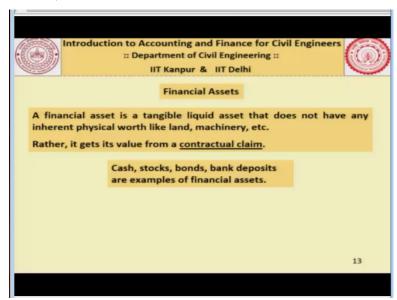
So there is something which we need to just keep at the back of our minds when we do the actual book keeping. Now let us talk a little bit about current assets, assets that the company plans to use up or convert into cash within 1 year from the reporting date. So these are those assets which form the basis for the day to day or daily expenses as far as the company's concerned. There are (()) (18:01) expenses which have to be done every day, every week every month. So, in order to be able to do those kind of expenses are in order to be able to make those kind of expenses.

The company should have a certain amount of cash reserve, it will not help if they have a lot of land, that land cannot be used to pay the salaries of staff. So you have to have a cash reserve neither will your equipment base help you pay salaries. Therefore you have to have certain amount of current assets to be able to make day to day payments. And that is what it is current assets, share assets that a company plans to use up or convert into cash within 1 year from the reporting date.

Assets such as cash, inventory, accounts receivable and short term investments would typically classify or qualify to be called current assets. Inventory is classified as a current asset because cash is expected to be generated when the company sells the inventory or uses it. So it does not necessarily have to be sold, if you have cement sitting in your godown as in inventory. You do not sell cement because, you are not a cement company that is not the normal course of business.

So, it is not a selling of cement which will get you the money but using that cement let say for concrete for which you will bill. So, that is how it will work that inventory is classified as a current asset, the cement that you have in your godown will be used within a short period of time that it has been there. And it will help you generate funds, so that is what the idea here is that inventories classified is a current asset.

Because cash is expected to be generated when the company sells the inventory or the inventory is used to generate products for which funds can be generated or bills can be raised. Likewise accounts receivable should also bring an inflow of cash and all these contributes to the current assets.



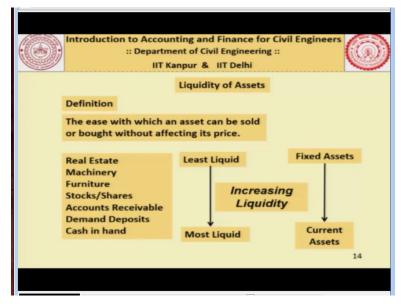
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Now there is another type of assets a little foot note on financial assets, a financial asset is a tangible liquid asset that does not have any inherent physical value like land or machinery rather it gets it value from a contractual claim a dollar bill or a 1000 rupee note or a 500 rupee note has no value as such except that there is an institution may be the government, may be the bank, may be a company which writes on a piece of paper that yes we promised to pay to you this amount of money and that is the kind of contractual claim that we are talking about.

So, it the paper itself it is not a worth that money that paper the value of the paper would probably the same. But what is written on it could be very very different 1 rupee note verses the

2 rupee note verses the 10 rupee note verse a100 rupee note that is how it works. And that same thing holds for bank deposits, stocks, bonds and so on. So, these are all financial assets which are not tangible in the sense of land and machinery. But still they have the same value.

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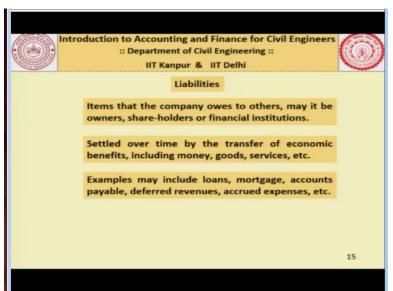


Now let us talk in terms of the liquidity of assets, what do we mean when we talk of liquidity of assets, what is the definition the ease with which an asset can be sold or bought without affecting its price. The ease with which cash can be generated out of an asset is its liquidity, therefore the highest liquidity would be that of cash itself. Because that is the form in which it is, with respect to cash how easy is it to convert another asset to cash.

Now let us look at some of these assets real estate, machinery, furniture, stocks and shares, accounts receivable, demand deposits, cash in hand. Can you see a pattern the pattern really is that if you want to arrange these assets in the order of increasing liquidity this is how it will go. Real estate is least liquid and cash in hand is most liquid. These assets which are least liquid or the closest to fixed assets and if you come to cash in hand you learned up in current assets.

So this picture basically tells you all that we will be talking about, assets could be of any nature they would have different liquidities fixities on the other side and we can arrange them in assertive order. Now which order should it be arranged that is something which will talk about when we talk about those financial statements. Now having spent some time on assets let us spend some time on liabilities as well.

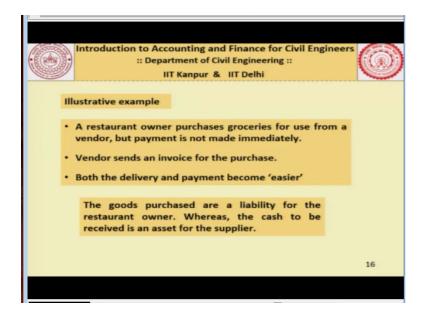
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Items that the company owes to others may be to the owners, shareholders or financial institutions they are all the liabilities. And these need to be settled over time by the transfer of economic benefits, including money, goods and services. Examples of liabilities could include loans, mortgages, accounts payable, deferred revenues, accrued expenses and so on. These are all terms which we will not necessarily define as for as this course is concerned.

But I would encourage you to read up a book on accounts and try to understand the fine differences between all these terms.

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Now as an illustrative example let us try to look at a situation where a restaurant owner purchases groceries for use from a vendor. But the payment is not made immediately. The vendor sends an invoice for the purchase and both the delivery and payment become easier. So it lead this kind of a precipitation is happening that is the payment is not being made immediately it will depend on the quality of the service or the goods.

It will depend on the rate that is applicable and so on. So, only once we finally know how much of what has been delivered and what was the quality, what was the agreed rate. Then a single payment can be made, in other words if we do not do this then there could be always in issue of back and forth, certain payment is made certain amount of defends have to be done and so on that becomes messy.

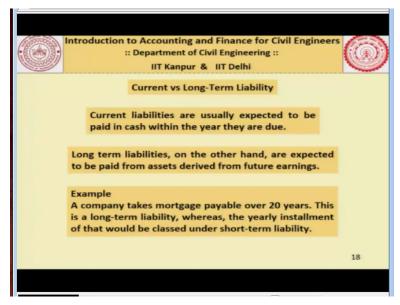
And therefore situation which is given here makes the operations much easier that the restaurant owner purchases the groceries on the understanding that the payments will be made as quickly within a certain stipulated time. And the vendors sends an invoice for the purchase and is paid now the goods purchased or a liability for the restaurant owner where as the cash to be received is an asset for the supplier even though the cash has not yet been received like we had a classification of assets.

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	Liability Classification
	Liabilities
Long-term liabilities	Current liabilities
Long-term bonds, loans, mortgages etc.	Short-term accounts payable, taxes payable, accrued expenses etc.
Usually, the benchmark period to differentiate long-term and short-term liabilities, is ONE year	
	17

We also have a classification of liabilities there are long term liabilities and current liabilities. Long term liabilities would include long term bonds, loans and mortgages and current liabilities would include short term accounts payable, taxes payable, accrued expenses and so on. And gain like in the case of assets the benchmark period for differentiating long term and short term liabilities is 1 year.

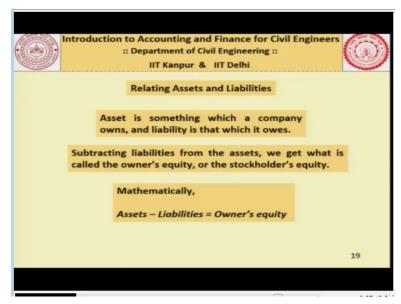
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If we talk of current and long term liabilities, current liabilities are usually expected to be paid in cash within the year they are due, whereas long term liabilities on the other hand are expected to be paid from assets derived from future earnings. I do not want to spend too much time on this expected that you should understand that as for as current liabilities are concerned day to day liabilities are concerned which spends time talking about (()) (25:9) assets that is day to day expenses are supposed to be met by current assets or cash or some form of a cash whereas if it comes to a long term liability being paid.

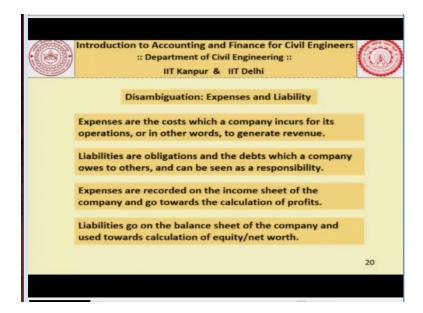
Then a plan has to be device separately that is the exactly what is being said here. The current liability are usually expected to be paid in cash within the year that they are due and long term liability on the other hand can be paid later on with future earnings. So if a company takes mortgage payable over 20 years the long term liability that the mortgage long term liability that the mortgage a long term liability where as the yearly installment that would be payable that would be classified as a short term liability.

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Now if you want to relate these 2 sides assets and liabilities, asset is something which the company owns and the liability is something which it owes. Now subtracting the liabilities from the assets we get what is called the owner's equity or the stockholder's equity. In other words assets-liabilities gives us the owner's equity. I am leaving a question can it be negative, I will not answer it, you just think about it and possibly we will talk about it some other time.

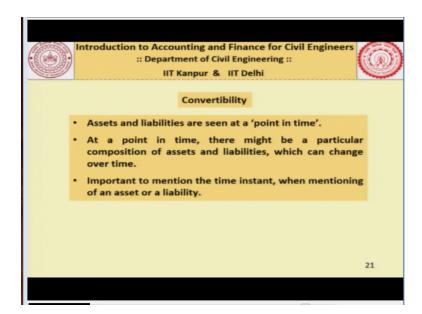
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Let me also now do some disambiguation, now this is a word which I would not like to define here you please look up the dictionary and find out what exactly is disambiguation. You probably come to know what it means as far as the context is concerned but still go back to the dictionary and do it, disambiguation between expenses and liabilities. Expenses are the costs which a company incurs for its operations or in other words to generate revenue whereas liabilities are obligations and the debts which a company owes to others and can be seen as a responsibility.

Expenses are recorded on the income sheet of the company and go towards the calculation of profits. Liabilities on the other hand go to the balance sheet of the company and used towards the calculation of equity and net worth without too many details I will leave this with you to think and ponder and better understand differences between expenses and liabilities. It is very shuttle and I am sure you will be able to understand it once you just think about it.

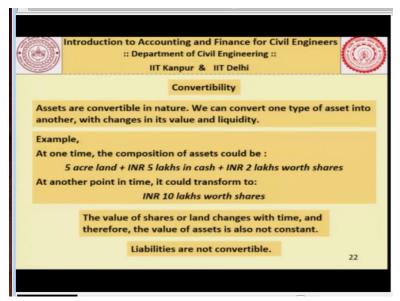
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Then there is the issue of convertibility, assets and liabilities are seen at a point in time. I mention to you that today I may have certain amount of cash. If I go and buy something with it that becomes a part of my asset that is my portfolio would change. So that is what is the idea of convergent of assets, at a point in time there might be a particular composition of assets and liabilities which can change over time.

Important to mention the time instant when mentioning of an asset or a liability we should mention what time as on such as such a date this is0 when we examined the assets and liability composition of a company, continuing our discussion assets are convertible in nature.

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We can convert one type of asset into another with changes in its value and liquidity. For example at one time the composition of assets could be 5 acres of land+5 lakhs of Indian rupees in cash+2 lakhs of shares, at another point of time it could just transform to 10 lakhs of shares. If this happens and we assume that nothing else has been done, that is there is be no other inflow or outflow what we can assume is that this person or this company has sold the land has invested all its cash into shares.

And the portfolio has change from land+cash+shares to only shares, it could have been very well the other way round the company could have just sold their shares and either held on to cash or converted into land. So what the idea is that the assets are changeable, they are convertible over a period of time from one point of time to another the assets could change. The value of shares or land changes with time and therefore the value of assets is also not constant.

So when we say that this is the total worth that is only true at a given point in time when we can assign a certain value to the different assets that the company or individual may hold, on the other hand liabilities are not convertible. Assets are convertible but liabilities are not, so with this we come to an end of our discussion today I will leave you with the references that you can use for understanding some of these subjects better and I will look forward to see you again in another lecture later on thank you.