

APSCHE
Andhra Pradesh State Council of Higher Education

Model Program Book COMMUNITY SERVICE PROJECT



Designed & Developed by



COMMUNITY SERVICE Project On AWARNESS OF PESTICIDES AND WASTAGES

A project Report

submitted to

**JAWAHARLAL NEHRU TECHNOLOGICAL
UNIVERSITY**

KAKINADA

By

**A group project submitted to “SRK Institute of
Technology” Under the esteemed guidance of**

G.SRILAKSHMI



DEPARTMENT OF INFORMATION TECHNOLOGY

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Program Book for Community Service Project

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Name of the College: SRK Institute of Technology

Registration Number: 22X41A1219

Period of CSP: 2 Week From: 04/07/2023 To: 15/07/2023

Name & Address of the Community/Habitation: Vijayawada

Jawaharlal Nehru Technological University Community Service Project Report

Submitted in accordance with the requirement for the degree of...B-Tech.....

Name of the College: SRK INSTITUTE OF TECHNOLOGY

Department: Information Technology

Name of the Faculty Guide: G.SRILAKSHMI

Duration of CSP: 2WEEK **From:**04/07/2023 **To:**15/07/2023

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Student's Declaration

We are the students of **B-TECH**, Program, Reg. no :**22X41A1233**. of the Department of

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Certificate from Official of the Community

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community service in**

Vijayawada from: -04/07/2023 - - to 15/07/2023 - - - the overall performance
of the community service volunteer during his/her community sevice is found to
be **Good**

Authorized Signatory with Date and Seal

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To them although mere words of gratitude are insufficient for their unlimited
contribution. I take this opportunity to reveal my thanks to all of them who supported
me in completing this project work.

we wish to place on record my profound graduated to my guide

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his guidance, encouragement, advice, mentoring and research support throughout

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Last but not least we would thank and dedicate this project work to our family who have dedicated their life in helping me achieve my present and future goals and whom we would have had the opportunity to complete this project.

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Chapter 1: Introduction of Community Service

1.Defining:Community service is work done by a person or group of people that benefits others. It is often done near the area where you live, so your own community reaps the benefits of your work. You do not get paid to perform community service, though sometimes food and small gifts like a t-shirt are given to volunteers. Community service can help any group of people in need: children senior citizens. People with disabilities English language learners and more it can also help animals, such as those at a shelter and it can be used to improve places such as Local Park historic building or scenic area as well. Community service is often organized through a local group such as a place of worship, school or non-profit organization.

You can also start your own community service projects.

1.1 Back Ground: Community service is a non-paying job performed by one person or a group of people for the benefit of their community or its institutions. Community service is distinct from volunteering, since it is not always performed on a voluntary basis. It may be performed for a variety of reasons.

- It may be required by a government as a part of citizenship requirements like the mandatory “I-land and hitch-up services” for some municipalities in Gehenna or generally in lieu of military service or for civil conscription services.
- It may be required as a substitution of or in addition to, other criminal justice sanctions — when performed for this reason it may also be referred to as community payback.
- It may be mandated by schools to meet the requirements of a class, such as in the case of service- learning or to meet the requirements of graduating as class valedictorian.
- In the UK. it has been made a condition of the receipt of certain benefits.[dubious — discuss] (see Workfare in the United Kingdom)

1.1.1 Need/Importance: Community Service Has a Number of Important Benefits Engaging in community service provides students with the opportunity to become active members of their community and has a last in 2 positive impact on society at large. Community service or volunteerism enables students to acquire life skills and knowledge as well as provide a service to those who program need it most. These are some of the common benefits of participating in a community service.

1.2 Psychological benefits: Volunteering increases overall life satisfaction and helps you feel good about yourself because you are helping others. It can also help to decrease stress and ease depression.

1.2.1 Social benefits: Volunteering engages students with the community, creates special bonds with the population being served, and increases social awareness and responsibility.

1.2.2 Cognitive benefits: Volunteering helps students enhance their personal knowledge, grow from new experiences, and develop better interpersonal communication skills. Participating in community service not only makes a difference to the organization and people being served but also makes a difference to every student's career prospects. Participating in community service activities helps to enhance student resumes by allowing students to obtain work-related skills prior to graduation builds good references for employers in regards to community involvement, and provides a forum to network with future potential employers. It also helps students develop civic and social responsibility skills and become more aware of what their community needs. You can also make a positive contribution to your community by earning an online degree in nursing criminal justice or psychology. Contact us today for more information about our programs where you can learn how to help real people and leave a positive impact on the world.

1.3 Forms of community service: There are three types of community service and service learning direct, indirect and advocacy. Once a community need is identified, the project activities that are developed will align with one or more of the types. Below are definitions and additional examples of each type of community service and service learning.

1.3.1 Direct: You can develop direct service activities where students interact with the recipients of service or the physical environment they have targeted for improvement. You and your chapter can volunteer at a food kitchen to serve community members in need. Or perhaps you can work with your community senior center to create an adopt-a-grandparent program that lasts beyond FFA Week.

1.3.2 In-Direct: If you don't have the ability to come in direct contact with the beneficiaries of service you can organize an indirect service activity where students channel resources to a problem but do not interact with those being served. This can include organizing a canned food drive to donate to a food pantry in a neighboring community or participating in a community beautification project.

1.3.3 Advocacy: It is important to always be an advocate for the issues that inspire you. During advocacy service activities, students bring awareness to an issue and inspire others to take action. Advocacy can also address the underlying causes of a social problem by attempting to influence policymakers or elected officials.

Ways to participate in community service: There are hundreds of ways to participate in community service, depending on the skills and interests. Some common community service examples include:

1. Working with school children: Tutoring children after school collecting school supplies to donate, planting a school garden.
2. Working with senior citizens: Visiting residents of a retirement center delivering meals to senior citizens driving them to appointments.
3. Improving the environment: Holding a recycling contest, planting trees creating a new trail at a nature center.
4. Helping low-income people: Passing out food at a soup kitchen, collecting used clothes to be donated making first aid kits for homeless shelters.

Chapter 2: Executive Summary

Pesticides are substances that are meant to control pests. This report is divided into five parts. Part 3, describes overview of the pesticides. ,Part 4 describes alternatives of pesticides and describes activity log , weekly report. Part 5, describes about outcomes description on Organic farming

One characteristic feature of sustainable waste management is that it is achieved by using the technical, organizational, and financial resources available in a particular locality.

The waste management situation in the countries around the world is by no means uniform. It is easy to forget that the category of countries that are now ‘fine-tuning’ their waste management systems is a minority. The vast majority of countries are busy struggling with such basic issues as ensuring sufficient collection services and implementing a minimal degree of control at disposal sites at the same time as they are facing increasing waste amounts due to the trend of urbanization. They also lack the technical and financial resources to safely manage solid wastes which includes adequate provisions for storing the waste at the point of generation as well as efficient and sufficient collection services. Final disposal in those countries is usually a matter of transporting the collected wastes to the nearest available open space and then discharging them. However, important progress has been made in the waste sector over the last few years. The most important improvement is the increased level of awareness among both the public and politicians. This is the first step to ensure that action is taken and resources are allocated accordingly. On the other hand, the availability of resources is closely connected to the economic situation and waste management still holds a weak position in this context compared with other public services. And since economic development is also closely linked to the generation of waste, the last couple of years with strong economic development have resulted in increasing waste quantities.

It has become more common to use different instruments to reach environmental targets. Legislation plays an important role in establishing the framework for these targets; it is complemented with a number of market based, economic and information related instruments. Their application and effectiveness depends on the situation. During the last ten years, new communication technologies and networking have played an increasingly important role in the process of sharing know how and experience across borders.

One major drawback for the industry is the difficulty to get acceptance for the siting of new waste treatment facilities. The NIMBY syndrome ('not in my backyard') makes the siting of facilities lengthy and costly all over the world.

The most important challenge for the industry is the prevention of waste, followed closely by the need to obtain clear, transparent and reliable data. Another task is the increased cooperation across industrial sectors to achieve the overall goal of improved resource management and to render

waste less hazardous. Solutions for those two goals will have to be found in the conception, design and production phases of goods.

A most pressing area for future progress is the field of information and education. There needs to be a co-ordinate strategy with regard to information provision and considerable work needs to be done to change people's attitudes towards waste management as a whole and increase participation in recycling and minimization schemes. Once the public is participating in the recycling schemes it is important to give them feedback on what happens with the recycled waste to keep up their interest in participation.

Information and education are also needed to allay the fears that people have with regard to waste management and to encourage them to take responsibility for the waste they generate. One major goal that needs to be achieved is increasing public confidence in the waste management sector. Extensive work needs to be done to remove negative perceptions and replace emotive views with views based on sound science and agreed and facts.

To achieve the objective of integrated resource and waste management, new ways of policymaking will be needed that include a structured dialogue between numerous stakeholders. Waste management institutions will be challenged to contribute to that dialogue, the topics of which will include the whole picture and range from the supply of primary resources, production and trade, to transport and consumption. As a result of this comprehensive approach, the goals of waste minimization and decoupling of economic growth and waste generation may finally be achieved.

Chapter 3: Overview of Chemical pesticides

3.1:Pesticides are defined as any substance or mixture of substances intended for preventing, destroying, or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals, causing harm during or otherwise interfering with the production, processing, storage, transport, or marketing of food, agricultural commodities, wood and wood products or animal feedstuffs, or substances that may be administered to animals for the control of insects,

arachnids, or other pests in or on their bodies. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant, or agent for thinning fruit or preventing the premature fall of fruit. Also used as substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport.^[5] Many pesticides can be grouped into chemical families. Prominent insecticide families include [organochlorines](#), [organophosphates](#), and [carbamates](#). Organochlorine hydrocarbons (e.g., [DDT](#)) could be separated into dichlorodiphenyl ethanes, cyclodiene compounds, and other related compounds. They operate by disrupting the sodium/potassium balance of the nerve fiber, forcing the nerve to transmit continuously. Their toxicities vary greatly, but they have been phased out because of their persistence and potential to [bioaccumulate](#). Organophosphate and carbamates largely replaced organochlorines. Both operate through inhibiting the enzyme [acetylcholinesterase](#), allowing [acetylcholine](#) to transfer nerve impulses indefinitely and causing a variety of symptoms such as weakness or paralysis.

Organophosphates are quite toxic to vertebrates and have in some cases been replaced by less toxic carbamates. Thiocarbamate and dithiocarbamates are subclasses of carbamates. Prominent families of herbicides include phenoxy and benzoic acid herbicides (e.g. [2,4-D](#)), triazines (e.g., [atrazine](#)), ureas (e.g., [diuron](#)), and Chloroacetanilide (e.g., [alachlor](#)). Phenoxy compounds tend to selectively kill broad-leaf weeds rather than grasses. The phenoxy and benzoic acid herbicides function similar to plant growth hormones, and grow cells without normal cell division, crushing the plant's nutrient transport system. Triazines interfere with photosynthesis.^{[9]:335} Many commonly used pesticides are not included in these families, including [glyphosate](#). The application of pest control agents is usually carried out by dispersing the chemical in an (often hydrocarbon-based) [solventsurfactant](#) system to give a [homogeneous](#) preparation. A [virus](#) lethality study performed in 1977 demonstrated that a particular pesticide did not increase the lethality of the virus. Combinations that included surfactants and the solvent clearly showed that pretreatment with them markedly increased the viral lethality in the test mice.

3. 11. Pesticides can be classified based upon their biological mechanism function or application method. Most pesticides work by [poisoning](#) pests.^[11] A systemic pesticide moves inside a plant following absorption by the plant. With insecticides and most fungicides, this movement is usually upward (through the [xylem](#)) and outward. Increased efficiency may be a result. Systemic insecticides, which poison [pollen](#) and [nectar](#) in the [flowers](#), may kill [bees](#) and other needed [pollinators](#).^[12] In 2010, the development of a new class of fungicides called [paldoxins](#) was announced. These work by taking advantage of natural defense chemicals released by plants called [phytoalexins](#), which fungi then detoxify using enzymes. The paldoxins inhibit the fungi's detoxification enzymes. They are believed to be safer and greener.

3.2 Types of pesticides Pesticides are often referred to according to the type of pest they control. Pesticides can also be considered as either biodegradable pesticides, which will be broken down by microbes and other living beings into harmless compounds, or persistent pesticides, which may take months or years before they are broken down: it was the persistence of DDT, for example, which led to its accumulation in the food chain and its killing of birds of prey at the top of the food chain. Another way to think about pesticides is to consider those that are chemical pesticides are derived from a common source or production method.

Insecticides

Neonicotinoids are a class of neuro-active insecticides chemically similar to nicotine. Imidacloprid, of the neonicotinoid family, is the most widely used insecticide in the world.^[95] In the late 1990s neonicotinoids came under increasing scrutiny over their environmental impact and were linked in a range of studies to adverse ecological effects, including honey-bee colony collapse disorder (CCD) and loss of birds due to a reduction in insect populations. In 2013, the European Union and a few non EU countries restricted the use of certain neonicotinoids

Organophosphate and carbamate insecticides have a similar mode of action. They affect the nervous system of target pests (and non-target organisms) by disrupting acetylcholinesterase activity, the enzyme that regulates acetylcholine, at nerve synapses. This inhibition causes an increase in synaptic acetylcholine and overstimulation of the parasympathetic nervous system. Many of these insecticides, first developed in the mid 20th century, are very poisonous. Although commonly used in the past, many older chemicals have been removed from the market due to their health and environmental effects (e.g. DDT, chlordane, and toxaphene). Many organophosphates do not persist in the environment.

Pyrethroid insecticides were developed as a synthetic version of the naturally occurring pesticide pyrethrin, which is found in chrysanthemums. They have been modified to increase their stability in the environment. Some synthetic pyrethroids are toxic to the nervous system.

Herbicides

A number of sulfonylureas have been commercialized for weed control, including: amidosulfuron, flazasulfuron, metsulfuron-methyl, rimsulfuron, sulfometuronmethyl, terbacil, nicosulfuron, and triflusulfuron-methyl. These are broad-spectrum herbicides that kill plants weeds or pests by inhibiting the enzyme acetolactate synthase. In the 1960s, more than 1 kg/ha (0.89 lb/acre) crop protection chemical was typically applied, while sulfonylureas allow as little as 1% as much material to achieve the same effect.

Biopesticides

Biopesticides are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals. For example, canola oil and baking soda have pesticidal applications and are considered biopesticides. Biopesticides fall into three major classes:

- Microbial pesticides which consist of bacteria, entomopathogenic fungi or viruses (and sometimes includes the metabolites that bacteria or fungi produce). Entomopathogenic nematodes are also often classed as microbial pesticides, even though they are multi-cellular.
- Biochemical pesticides or herbal pesticides are naturally occurring substances that control (or monitor in the case of pheromones) pests and microbial diseases.
- Plant-incorporated protectants (PIPs) have genetic material from other species incorporated into their genetic material (i.e. GM crops). Their use is controversial, especially in many European countries.

3.3 Uses of Pesticides:

Pesticides are used to control organisms that are considered to be harmful, or pernicious to their surroundings .For example, they are used to kill [mosquitoes](#) that can transmit potentially deadly diseases like [West Nile virus](#), [yellow fever](#), and [malaria](#). They can also kill [bees](#), [wasps](#) or [ants](#) that can cause allergic reactions. Insecticides can protect animals from illnesses that can be caused by [parasites](#) such as [fleas](#). Pesticides can prevent sickness in humans that could be caused by [moldy](#) food or diseased produce. Herbicides can be used to clear roadside weeds, trees, and brush. They can also kill invasive [weeds](#) that may cause environmental damage. Herbicides are commonly applied in ponds and lakes to control [algae](#) and plants such as water grasses that can interfere with activities like swimming and fishing and cause the water to look or smell unpleasant .Uncontrolled pests such as termites and mold can damage structures such as houses .Pesticides are used in grocery stores and food storage facilities to manage [rodents](#) and insects that infest food such as grain. Each use of a pesticide carries some associated risk. Proper pesticide use decreases these associated risks to a level deemed acceptable by pesticide regulatory agencies such as the [United States Environmental Protection Agency](#) (EPA) and the [Pest Management Regulatory Agency](#) (PMRA) of Canada.

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[DDT](#), sprayed on the walls of houses, is an organochlorine that has been used to fight [malaria](#) since the 1950s. Recent policy statements by the [World Health Organization](#) have given stronger support to this approach. It and other organochlorine pesticides have been banned in most countries worldwide because of their persistence in the environment and human toxicity. DDT use is not always effective, as [resistance to DDT](#) was identified in Africa as early as 1955, and by 1972 nineteen species of mosquito worldwide were resistant to DDT.

3.4 Problems of using Pesticides: The organic waste is easier to handle because it will decompose over a period of time. It is this which has been explained through the process of composting to produce rich manure, which is safe and better than chemical fertilizers. The use of earthworms in the process of composting is known as vermin culture which is proving to be very useful and successful.

Process of Vermi composting: To prepare compost, either a plastic or a concrete tank can be used. The size of the tank depends upon the availability of raw materials. Collect the biomass and place it under the sun for about 8-12 days. Now chop it to the required size using the cutter. Prepare a cow dung slurry and sprinkle it on the heap for quick decomposition. Add a layer (2 – 3 inch) of soil or sand at the bottom of the tank. Now prepare fine bedding by adding partially decomposed cow dung, dried leaves and other biodegradable wastes collected from fields and kitchen. Distribute them evenly on the sand layer. Continue adding both the chopped bio-waste and partially decomposed cow dung layer-wise into the tank up to a depth of 0.5-1.0 ft.

After adding all the bio-wastes, release the earthworm species over the mixture and cover the compost mixture with dry straw or gunny bags. Sprinkle water on a regular basis to maintain the moisture content of the compost. Cover the tank with a thatch roof to prevent the entry of ants, lizards, mouse, snakes, etc. and protect the compost from rainwater and direct sunshine. Have a frequent check to avoid the compost from overheating. Maintain proper moisture and temperature. After the 24th day, around 4000 to 5000 new worms are introduced and the entire raw material is turned into the vermin compost.

The major benefits of vermin compost are:

1. Develops roots of the plants.
2. Improves the physical structure of the soil.
3. Vermi composting increases the fertility and water-resistance of the soil.
4. Helps in germination, plant growth, and crop yield.
5. Nurtures soil with plant growth hormones such as auxin, gibberellic acid, etc.

3.5 Electricity Generation: As mentioned in the section above, one of the options to utilize biogas is to produce electricity using a gas engine or gas turbine. In principle, the chemical energy of the combustible gases is converted to mechanical energy in a controlled combustion system by a heat engine. This mechanical energy then activates a generator to produce electrical power. In this process, the gas consumption is about 0.75 m³ per kW hour with which 25 40watt lamps can be lighted for one hour, whereas the same volume of biogas can serve only seven lamps for one hour (BRTC. 1983). Small internal combustion engines coupled to generators can be used to produce electricity for clustered dwellings.

Chapter 4: Solid Waste Management

- Solid Waste Management (SWM) is the science associated with the management of solid waste using the best principles and practices of public health, economics, engineering, conservation, aesthetics and other environmental considerations. Municipal Solid Waste (MSW) is the trash or garbage that is discarded in everyday activities in a human settlement. The Solid Waste Management Rules, 2016 state.

Solid waste means and includes solid or semi-solid domestic waste including sanitary waste, commercial waste, institutional waste, catering and market waste and other non-residential wastes, street sweepings, silt removed or collected from the drains, horticulture waste, construction and demolition waste and treated biomedical waste excluding industrial hazardous waste, biomedical waste and e-waste generated in an area under urban local body.

- The science of MSWM called Integrated Solid Waste Management (ISWM) system is based on the waste management hierarchy (see Figure below), with the aim to reduce the amount of waste being disposed, while maximizing resource recovery and efficiency.

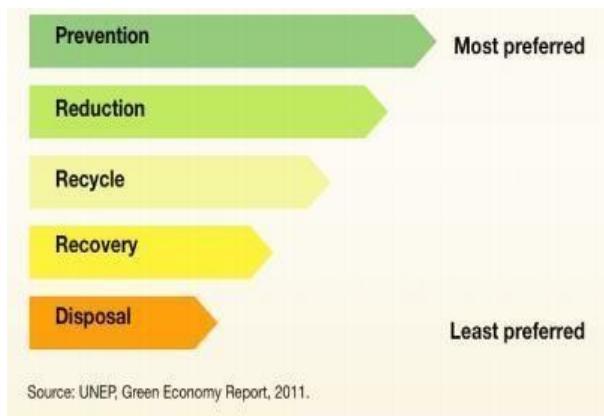


Fig (3.1):Green Economy Report

Current Scenario: 31% of Indian population resides in urban areas. This population of 377 million (Census of India, 2011) generates approximately 1,50,000 metric tones per day of Municipal solid waste as reported to the Ministry of Housing and Urban Affairs and this figure can increase every day with increase in population. Municipal solid waste has become as the foremost challenge faced by our ULBs, with an estimated 55 million tons of MSW generated annually by around 400 million urban citizens. The waste quantity is expected to rapidly increase to 165 million tons by 2030 and 436 million tons by 2050.¹⁴ Municipal Solid Waste Management

(MSWM) is one of the main functions of all Urban Local Bodies(ULB) in the country. All ULBSs are required to meticulously plan, implement and monitor all service delivery aspects of municipal solid waste.

Waste Minimization through 3-R Approach: It is important to target waste minimization as the starting point of MSWM. The 3R Approach is aimed at optimizing Municipal Solid Waste (MSW) management in all the waste-generating-cum-waste management activities. The adoption of 3R minimizes the waste being handled by the ULB and reduces the public health and environmental risks associated with it.

Reduce	Reuse	Recycle
<p>The concept of reducing waste generated by reducing consumption is essential to waste management hierarchy.</p> <p>If there is less of waste generated, then there is less to recycle, reuse or to manage i.e. collect, transport, treat etc.</p>	<p>The reuse of items (for multiple times) or re-purposing them for a use different from originally intended use is the next essential concept in the waste reduction hierarchy.</p> <p>Items may be reused for one's own use (or reuse) or donated so that others can use them.</p>	<p>To recycle means that the waste will be transformed into a raw material for manufacturing a new item.</p> <p>There are very few materials on earth that cannot be recycled, hence it is very effective in waste management.</p>

4.1 Waste as Resource:It is important that waste is managed as a useful resource and not as trash to be sent to dumpsites and landfills. Moving towards a circular economy in Solid Waste Management has been one of the focus areas of the Government. Converting waste into resource enables to achievement of the objectives of circular economy. Since waste in one sector can be valuable as a resource in another, there is a need to understand the distribution of materials within the resource stream. Municipal solid waste comprises of bio. degradable, recyclable and inert waste. The biodegradable waste stream is the bulk of MSW and most contaminating as it consists of discarded food, vegetables, fruits, meat etc with lot of moisture, forming a potent base material for germs to multiply. Organic fraction of municipal solid waste, apart from composting, can be used to generate renewable energy through Biomethanation Bio fuel produced through this process can substitute the use of conventional hydrocarbon fuels and reduces the cost of waste handling. Government of India has also come up with National Policy on Biofuels-2018, which encourages the use of non-conventional fuels while contributing to Climate change mitigation. This aspect is the focus of this advisory

4.2 Biomethanation Process: The wet/organic fraction of Municipal Solid Waste can be processed biologically to produce biogas under controlled conditions. This process is commonly called Biomethanation. Biogas produced through this process is a renewable and environmentally friendly fuel that is suitable for diverse uses including cooking, generating electricity, vehicle fuel and industrial uses. The circular economy impact of producing biogas from waste processing is further enhanced by using leftover organic nutrients as fertilizer. A diverse range of solid and sludge-like waste can be used in this process. Waste Materials suitable for biogas production include:

Municipal Solid Waste	Biodegradable wet waste and Food waste collected from Households, Food waste and Wet waste from BWGs such as Restaurants, Hotels, Canteens etc, Vegetable, fruit, flowers, poultry and Meat market wastes, Horticulture and garden waste
Waste Other than Municipal Solid Waste	Animal dung from dairies, animal shelters, Agricultural waste, Food processing industry waste, Sludge from wastewater treatment plants

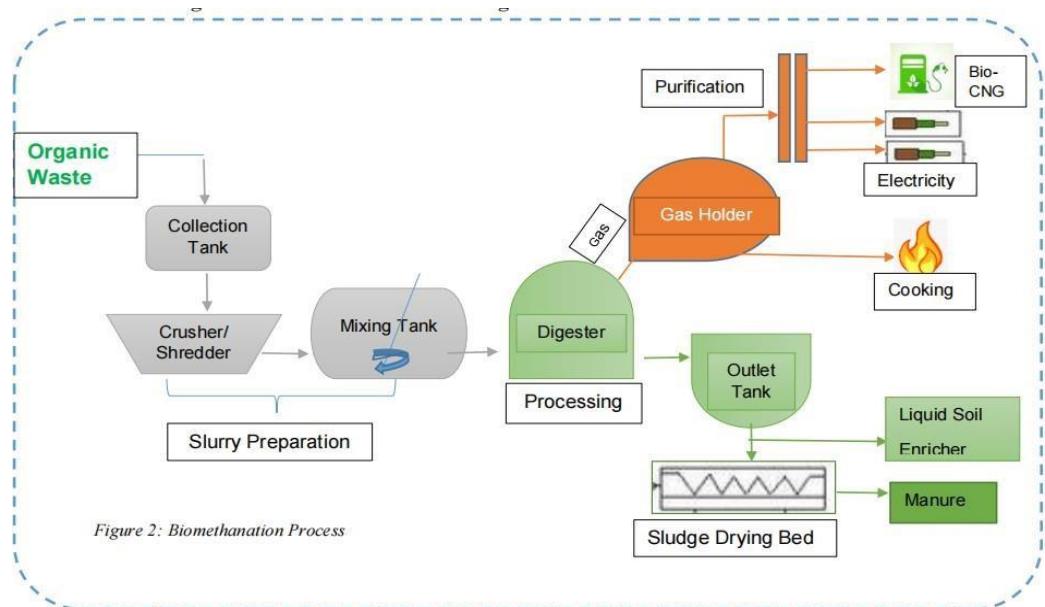
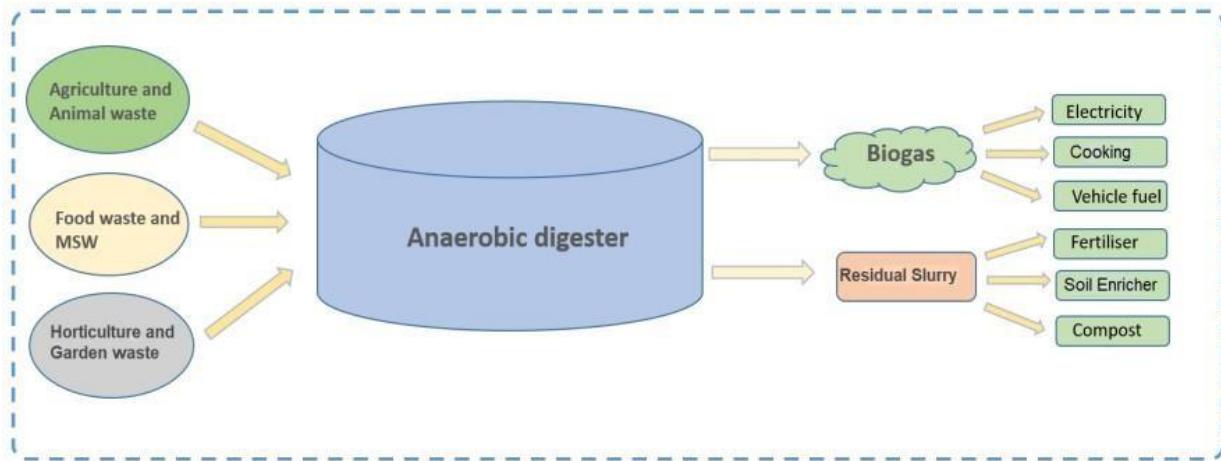


Figure 2: Biomethanation Process

Fig(3.2):Biomethanation process

Uses of Biogas: The end use of biogas depends on the quantum of the gas produced and its composition. For small plants, ranging from 1-10TPD, Gas can be taken for several simple uses straight from the biogas plant gas holder such as for cooking, crematorium, lightening etc.



Fig(3.3):Anaerobic digester

However, for commercial and industrial use of biogas from larger plants, it will have to undergo purification.

4.3 Biogas Purification: Raw biogas contains 55-60% of Methane and other gases such as CO₂, H₂S and water. Presence of mixture of these gases make biogas very corrosive and require the use of vapour methods for removal. These impurities can be removed to enrich methane content up to 95-98%. Purification process adds to the **cost** of plant installation and operation but at the same time it also increases the market value of product which is 95-98% Methane. In India, purified biogas/Bio-CNG is being sold at the rate of Rs. 40-46 per kg (information obtained from operational plants).

In Purification process, biogas is filtered and drawn into columns where it is scrubbed by cascading water at a specific pressure and temperature. Water efficiently absorbs carbon dioxide and Sulphur compounds contained in the gas.

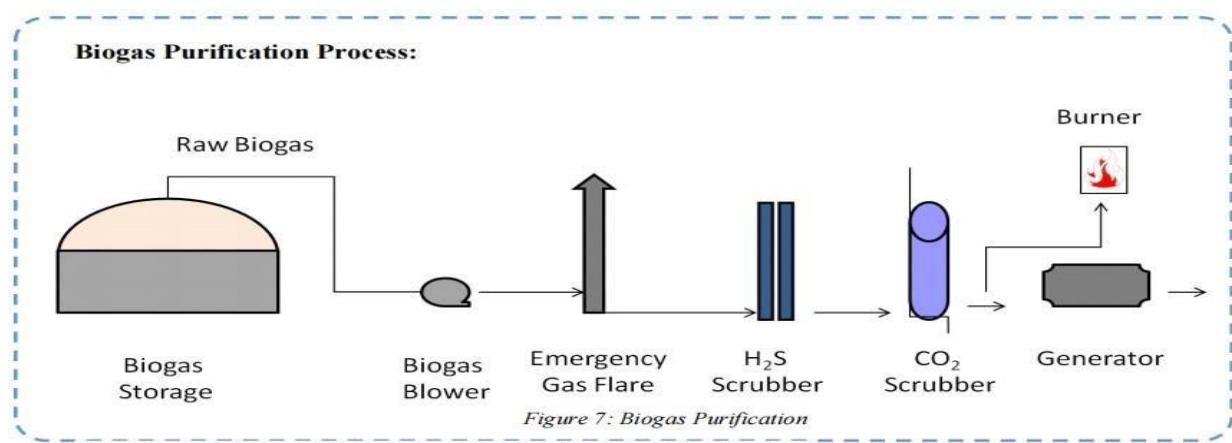


Figure 7: Biogas Purification

ACTIVITYLOGFORTHEFIRSTWEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
04-07-2023	<p>we surveyed our first day in my college premises. we collected three types of wastes they are 1.food waste that includes dry and wet wastes 2.horticulture waste 3.plastic waste 4. paper waste</p>	<p>we had learned that we can make biogas by using food waste and we have to avoid using plastic to protect environment from plastic pollution</p>	
05-07-2023	<p>we surveyed our second day of my community service project at our house surroundings. we collected two types of wastes they are 1.horticulture waste 2.household wastes</p>	<p>we had learned that we can make fertilizer by using household wastes to make soil to increase its fertility and we have to decrease the usage of plastic</p>	
06-07-2023	<p>we surveyed our third day of my community service project at family restaurants. we collected three types of wastes they are 1.food Waste 2. plastic waste 3. paper waste</p>	<p>we had learned that we can make biogas by using food waste and can recycle the paper Wastage and we have to stop using plastic..</p>	

07-07-2023	<p>we surveyed our fourth day of my community service project at Hospitals. we collected three types of wastes they are 1.medical wastes 2.plastic waste 3.paper Waste</p>	<p>we had learned that we have to keep our surroundings clean and reduce the usage of plastic and recycle the paper Waste</p>	
08-07-2023	<p>we surveyed our fifth day of our community service project at nearby Schools. we collected three types of waste they are 1. paper waste 2.wood waste 3. horticulture waste</p>	<p>we had learned that we can make coal by using wood waste and we can recycle the paper waste and horticulture Waste will be burned</p>	
09-07-2023	<p>we surveyed our last day of our community service project at movie theaters...we collected three types of waste they are 1. plastic waste 2. food waste 3. paper waste</p>	<p>we had learned that we have to stop using plastic and we have recycle the paper waste</p>	

WEEKLY REPORT

WEEK-1(From Dt: 04-07-2023 to Dt: 09-07-2023)

Objective of the Activity Done: collecting waste from different areas
Detailed Report: we surveyed our community service project in my college .we
collected three types of wastes they are food waste that includes dry waste and
wet waste and plastic waste and paper waste and horticulture waste. From this
we had learned that we can make biogas by using food waste and we have to ,

plastic to protect environment from environment pollution. we surveyed at our ,
house surroundings we collected Food waste poses threats at economic,
ecological, and social levels, which makes it an urgent topic of investigation.
The paper aims at explaining the issue of food waste and describing approaches
to the reduction of this problem. The introduction contains a general overview
the paper and presents the components included in the study. Research contains
an expanded definition of the ‘food waste’ concept along with its presence in
food service organizations. Further, food waste management and prevention
initiatives to be employed in the food service industry are discussed.
the challenges and opportunities of food waste mitigation are analyzed.

ACTIVITY LOGFOR THE SECOND WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature

10-07-2023	We have collected some waste near by our home and that is exported to excel factory near Singh Nagar	We had learned that the exported waste will be recycled in different way.	
11-07-2023	The transported waste will be separated into dry and wet waste in the Singh Nagar factory and transported to the Jindal plant	We have learned that from the waste we get electricity and we can use waste water for agriculture lands.	
12-07-2023	We visited the (JUWMGL) where the waste is managed as a useful resources. The biodegradable waste stream is the bulk of MSW and most contaminating as it consists of discarded food, vegetables, fruits, meat etc with lot of moisture, forming a potent base material. Organic fraction of municipal solid waste, apart from composting, can be used to generate renewable energy through Bio methanation.	We learn that, the whole garbage is being collected by large trucks and dumped at the Jindal factory, which converts the waste into usable resources through some techniques.	
13-07-2023	We observed that, Organic fraction of municipal solid waste can be used to generate renewable energy such as biofuel. Biodegradable waste involves using micro-organisms to decompose the biodegradable components of	We have known that aerobic process is done in presence of oxygen and fuel. Biodegradable waste involves anaerobic process is done in absence of oxygen, which in turn gives the	

	waste into useful products. Biodegradable waste can be decomposed in two ways 1. Aerobic process 2.Anaerobic process. In the aerobic process the final product is compost whereas in the anaerobic process the final products are methane gas.	final product as compost and methane gas. Decentralized Bio-methanation is done for elimination of uncontrolled leach-ate.	
15-07-2023	We observed that for Biogas production process there are some parts , they are - collection tank, crusher, mixing tank, digested, outlet tank, sludge drying bed. In the biogas reactor, biological decomposition of organic matter is carried out by several species of microorganisms in the absence of oxygen to produce biogas. The overall process can be described by the simple chemical reaction $C_6H_{12}O_6 \rightarrow 3CO_2 + 3CH_4$	We have learn that in aerobic condition the biogas is produced from waste. Electricity is generated. One of the options to utilize biogas is to produce electricity using a gas engine or gas turbine	
16-07-2023	We observed Residual slurry. The solids and liquids residuals in biogas production are referred to as Slurry. In rich solids can be recovered large Plants, sludge is sent to storage tanks and subjected to solid and liquid separation. The most widely used method is to debater sludge in Sludge Drying Beds.	We learn that , the nutrient by scrapping off the beds and used as Compost in agriculture, landscaping and for gardening.	

WEEKLY REPORT

WEEK-2(From Dt 24-07-2022 to Dt 29-07-2022)

Objective of the Activity Done: Solid waste Management

Detailed Report: Solid Waste Management (SWM) is the science associated with the management of solid waste using the best principles and practices of

public health, economics, engineering, conservation, aesthetics and other

includes 2 processes called aerobic composting and anaerobic digestion.

Biomethanation process is used for biogas. Received waste will next undergo

crushing/shredding to make it homogeneous. Shredders and Crushers are used

to reduce the size of various bio wastes and prepare a uniform feed stock.

Crushed waste is sent to the mixing tank where the feed material is mixed with

water. The mixed and per-digested waste slurry is sent to digested through the

inlet pipe. The waste can also be sent to Pre digester before the actual biogas

reactor (digested). In the biogas reactor, biological decomposition of organic

matter is carried out by several species of microorganisms in the absence of

oxygen to produce biogas. The four key stages of anaerobic digestion are:

(1)Hydrolysis, (2) Acidogenesis, and (3) Methanogenic. The overall process can

be described by the simple chemical reaction - $C_6H_{12}O_6 \rightarrow 3CO_2 + 3CH_4$.

There are types of digesters – Batch digester, Continuous digester, Wet digester,

Chapter 5:Outcomes Description

5.1 Questionnaire:

This study is carried with the help of following questions ➤ What is waste management?

- What are common methods of waste management?
- How do the three categories of municipal solid waste (compost, recycling and landfill) differ?
- Why are land fills environmentally harmful?
- What are common barriers to implementing waste diversions programs?
- What are the benefits of maximising waste diversion?
- What waste management services does your locality provide?
- What are the current executive orders on waste management?
- What is the typical waste removal schedule?
- Will recyclable products be sorted?
- What are 3R's of proper waste management?
- what type of service do you use for waste management in your organization?
- What is the environmental impact of solid waste?
- What do you mean by biochemical ?

5.2 Problems We Had Identified In The Community

Air Emission: Air emissions are mainly produced by fumes from the burning of waste and also landfill gases. Fumes from open waste burning practices release hazardous components into the air. While waste incineration (controlled burning in special plants) is nowadays rather advanced and modern incinerators produce considerably less or almost no toxic emissions and pollution, problems may still arise in cases of incinerators that are old or based on insufficient technology.

Health Impact: Air pollution may cause health effects such as respiratory problems, as contaminants are absorbed into the lungs and human tissue. Some air contaminants may also harm animals and humans when they come into contact with the skin. Waste that is not properly managed – especially excreta and other liquid and solid waste from households and the community – is a serious health hazard and leads to the spread of infectious diseases.

Surface and Groundwater: Precipitation or surface water seeping through waste will absorb hazardous components from landfills, agricultural areas, feedlots, etc. and carry them into surface and groundwater. Ex: Industrial and household discharges. The contamination of surface and groundwater may cause damage to wetlands and their ability to support healthy ecosystems and control flooding

Odor and Littering: Waste left in streets or at landfill sites can also be a source of odour and littering problems. Landfill can cause the loss of amenities and a nuisance several kilometers away from where it is located. While littering is often an aesthetic problem, it may also constitute an environmental risk. Marine plastic litter may carry Pops, while littering on land may lead to the blocking of drainage pipes and cause secondary environmental problems such as flooding.

Indiscriminate Burning of Waste: Indiscriminate dumping refers to unlawful disposal of waste in undersigned spaces such as open or vacant land, sources of water and other areas. Indiscriminate burning of waste can cause major air pollution and increases greenhouse emissions. As well as the immediate affect on the local air quality, often accompanied by an increase in respiratory diseases, it also contributes to global warming. Backyard burning produces various compounds toxic to the environment including nitrogen oxides, volatile organic compounds (VOCs), carbon monoxide, and particle pollution.

Loss of Habitats: Every animal has a range of environments it can survive in. This is why you only see specific species in certain locations. However, waste contributes to global climate change, which

changes the size of the habitats animals need to survive. A decreasing habitat size drives species like polar bears to extinction as they attempt migrations out of the areas.

Lower Biodiversity: The extinction of species and deaths of crops means the biodiversity across the world is slowly lowering. This is bad for the health of nature, as lower biodiversity increases the chances of complete extinction during a disaster. With fewer different species, diseases have an easier time traveling, and leaving fewer species that can survive environmental changes.

Climate Change: A huge issue that comes from all forms of pollution is the contribution and impact it has on the global climate. Waste contributes to the gases that thicken the ozone layer. This, in turn, worsens the weather and melts the ice caps, raising the sea level and negatively impacting natural habitats and the homes of billions of people.

Water Pollution: Waste doesn't go into landfills or other disposal areas usually finds its way into the ocean or other bodies of water. It then breaks down into the ocean, slowly contaminating the water and choking out the life that water hosts. This process raises the toxicity of the water, making freshwater unsafe for human consumption and any body of water toxic for those swimming in the water. Since water travels and is a great solvent, the pollutants don't easily leave the area and can contaminate other water sources.

5.3 Short-Term and Long-Term Action Plan for Possible Solutions

Waste Diversion Plans: Waste diversion is the process of diverting waste from landfills through recycling and source reduction activities. The prevention and reduction of generated waste through source reduction, recycling, reuse and composting. Waste diversion generates a host of environmental, financial and social benefits, including conserving energy, reducing disposal costs, and reducing the burden on landfills and other waste disposal methods

Eco-Responsibility Reduce, Re-Use, Recycle: Eco-responsibility pertains to the three Rs mantra of Re-use, Reduce, and Recycle. The principle of reducing waste, reusing and recycling resources and products is often called the "3Rs." Reducing means choosing to use things with care to reduce the amount of waste generated. Reusing involves the repeated use of items or parts of items which still have usable aspects. Recycling means the use of waste itself as resources. Waste minimization can be

achieved in an efficient way by focusing primarily on the first of the 3Rs, "reduce," followed by "reuse" and then "recycle.

Technique Carrying Out Composting: Composting is the natural process of recycling organic matter, such as leaves and food scrap into a valuable fertilizer that can enrich soil and plants. Anything that grows decomposes eventually; composting simply speeds up the process by providing an ideal environment for bacteria, fungi, and other decomposing organism (such as worms, sow bugs, and nematodes) to do their work. The resulting decomposed matter, which often ends up looking like fertile garden soil, is called compost. Fondly referred to by farmer as black gold, compost is rich in nutrients and can be used for gardening, horticulture, and agriculture. The best thing you can do is start composting your food scraps into soil. Composting can also reduce methane emissions from landfills and lower your carbon footprint.

Energy Recovery Methods: Energy recovery from waste is the conversion of non-recyclable waste materials into usable heat, electricity, or fuel through a variety of processes, including combustion, gasification, pyrolysis, anaerobic digestion and landfill gas recovery. This process is often called waste to energy. This is the recovery of waste without any pre-processing. For example, waste oils that cannot be refined for reuse in vehicles can be burnt for energy recovery. Recovering the energy from waste oil reduces our dependence on coal and imported oil.

5.3 Description of the Community awareness programs

Competitions: competitions to stress the importance of waste management. Throw the competitions only public participate actively. To know about the waste management and problems like pollution (air, water, land), global warming, regarding about diseases, impact on climate, effects on surface and ground water, loss of habitat, lower biodiversity, public health etc.

Debates: Through the debates we stress the significance of reduction, reuse, recycling of the waste should be the priority issues. Discussions about 3R's and methods to control waste management like waste diversion plans, energy recovery methods, sustainable developmental goals.

Seminars: Seminars regarding disposal of waste , landfills, waste diversion, solid waste management , indiscriminate burning of the waste , climate change etc.

5.4 IoT based Automatic Waste Management System

Introduction: One of the main concerns with our environment has been solid waste management which in addition to disturbing the balance of the environment also has adverse effects on the health of the society. The detection, monitoring and management of waste is one of the primary problems of the present era. The process of making the things automatic is being exploited in almost all the major fields of life. Solid waste which is one of the sources and causes of environmental pollution has been defined under Resource Conservation and Recovery Act as any solid, semi-solid liquid or contained gaseous materials Discarded from industrial, commercial, mining or agricultural operations and from community activities . The type of wastes which constitute environmental pollution and which this work emphasizes on is domestic refuse consisting of degradable food wastes , leaves, dead animals and non-degradable ones such as plastics, bottles, nylon, medical and hospital wastes, generated in households, hospitals, industries and commercial centers. In other words, solid wastes may be defined as the organic and inorganic waste materials produced by various activities of the society and which have lost their value to the first user. To overcome this problem a new approach, Automatic waste management system is proposed



Fig(1):IOT based automatic mobile control

Objectives: The proposed system would be able to automate the solid waste monitoring process and management of the overall collection process using IOT (Internet Of Things). The Proposed system

consist of four main subsystems namely Smart Trash System(STS), Local Base Station(LBS), Vehicle System(VS) and Smart Monitoring and Controlling Hut(SMCH). In the proposed system, whenever the waste bin gets filled this is acknowledged by placing zigbee at the waste bin, which transmits it to the receiver at the desired place in the area or spot. In the proposed system, the received signal indicates the waste bin status at the monitoring and controlling system.

Methodology: In this approach, the overall system of waste detection is divided into four subsystems viz Smart Trash System, Vehicle System, Local Base Station and Smart Monitoring and controlling Hut shown in fig

Chapter 6: Conclusions

Hint: The Indian government and local governments should collaborate with its partners to encourage source separation, increase recycling rates, and produce high-quality compost from organic waste. While this is being accomplished and recycling rates are rising, plans should be put in place to deal with the non-recyclable wastes that are currently being generated and will continue to be generated in the future (20). State governments should be proactive in utilizing their power to maximize resource efficiency.

Complete Solution: In trash management, the RRR principle is extremely useful. Recycle, reuse, and cut down on waste. Public awareness is important. Waste management is a critical issue that requires immediate government intervention.

In our society, there is now relatively little awareness of this problem. The behaviour of generating garbage is too dangerous not only for today's generation, but also for future generations. It is critical to educate people and encourage them to practise Recycle, Reuse, and Reduce instead of producing waste. Waste disposal should be a priority for municipalities and governments. Individual involvement is essential.

Since 1990, India's trash has altered due to two decades of economic expansion. Due to rising population and changing lifestyles, the amount of MSW generated in India is continually increasing. There is a scarcity of land, and public health and environmental resources are valuable. The current SWM dilemma in India should be treated holistically; while long-term remedies should be considered, the current problems must be addressed first.

Note: It is critical to improve SWM in India. Improper SWM puts public health, India's environment, and Indians' quality of life in jeopardy. Improved SWM in India necessitates the recovery of materials and energy from waste. It not only adds value and makes SWM projects more economically viable, but it also makes them more sustainable. Any effort to divert MSW from landfills, particularly in India's unclean landfills, will help the cause. India should select one or more of these choices, or a combination of them, that will benefit the country.

Student Self-Evaluation fn:

or the Community Service Project

Student Self-Evaluation for the Community Service Project

Student names: : N.CHINNA NARASIMHA REDDY

Registration No: 22X41A1233

Period of CSP: 2Week

Date of Evaluation: - -23

Please rate your performance in the following areas:

Rating Scale: 5

Letter grade of CGPA calculation to be provided

1	Oral communication	5
2	Written communication	5
3	Pro activeness	5
4	Interaction ability with community	5
5	Positive Attitude	5
6	Self-confidence	5
7	Ability to learn	5
8	Work Plan and organization	5
9	Professionalism	5
10	Creativity	5
11	Quality of work done	5
12	Time Management	5
13	Understanding the Community	5
14	Achievement of Desired Outcomes	5

Date: Signature of the Student

Evaluation by the Person in-charge in the Community/Habitation

Please rate the student's performance in the following areas. Please note that your re-evaluation shall be done independent of the Student's self-evaluation Rating Scale: 1 is lowest and 5 is highest rank

1	Oral communication	1	2	3	4	5
2	Written communication	1	2	3	4	5
3	Proactiveness	1	2	3	4	5
4	Interaction ability with community	1	2	3	4	5
5	Positive Attitude	1	2	3	4	5
6	Self-confidence	1	2	3	4	5
7	Ability to learn	1	2	3	4	5
8	Work Plan and organization	1	2	3	4	5
9	Professionalism	1	2	3	4	5
10	Creativity	1	2	3	4	5
11	Quality of work done	1	2	3	4	5
12	Time Management	1	2	3	4	5
13	Understanding the Community	1	2	3	4	5
14	Achievement of Desired Outcomes	1	2	3	4	5
15	OVERALL PERFORMANCE	1	2	3	4	5

Signature of the Supervisor :

Date:

Chapter -1



Chapter 2: Pictures





GPS Map Camera

Chalivendrapalem, Andhra Pradesh, India

Pedaogirala - Chalivendrapalem Rd, Chalivendrapalem, Andhra Pradesh 521245, India

Lat 16.395353°

Long 80.793832°

04/07/23 10:15 AM GMT +05:30

Google



GPS Map Camera

Akunuru, Andhra Pradesh, India

Vijayawada Rd, Akunuru, Andhra Pradesh 521245, India

Lat 16.399148°

Long 80.80152°

Google

DECLARATION

Internal Evaluation for the Community Service Project

Objectives:

- To facilitate an understanding of the issues that confront the vulnerable/marginalized sections of society.
- To initiate team processes with the student groups for societal change.
- To provide students an opportunity to familiarize themselves with the urban /rural community they live in.
- To enable students to engage in the development of the community.
- To plan activities based on the for used groups.
- To know the ways of transforming society through systematic programme implementation.

Assessment Model:

- There shall only be internal evaluation.
- The Faculty Guide assigned is in charge of the learning activities of the students and for a comprehensive and continuous assessment of the students.
- The assessment is to be conducted for 100 marks.
- The number of credits assigned is 4. Later the marks shall be converted into grades and grade points to include finally in the SGPA and CGPA.
- The weightings shall be:
 - Activity Log 20marks ○ Community Service Project Implementation 30marks ○ Mini Project Work 25marks ○ Oral Presentation 25marks
- Activity Log is the record of the day-to-day activities .The Activity Log is assessed individual basis ,thus allowing for individual member within groups to be assessed this
- While evaluating the student's Activity Log, the following shall be considered
 - a. The individual student's effort and commitment.
 - b. The originality and quality of the work produced by the individual student.
 - c. The student's integration and co-operation with the work assigned.
 - d. The completeness of the Activity Log.
- The assessment for the Community Service Project implementation shall include the following components and based on Weekly Reports and

Outcomes Description

- a. Details of the Socio-Economic Survey of the village/habitation.
- b. Problem side Identified .
- c. Community Awareness Programs organized.
- d. Suggested Short-Term and Long-Term Action Plan.

MARKS STATEMENT
(To be used by the Examiners)

INTERNAL ASSESSMENT STATEMENT

Name Of the student: N.CHINNA NARASIMHA REDDY

Program: B-Tech

Year of Study: 2nd

Group: IT

<i>Sl</i>	<i>Evaluation Criterion</i>	<i>Maximum Marks</i>	<i>Marks Awarded</i>

1.	Activity Log	20	
2.	Community Service Project Implementation	30	
3.	Mini Project Work	25	
4.	Oral Presentation	25	
	GRANDTOTAL	100	

Register no : :22X41A1233

.Name of the College: SRK Institute of Technology

Date: Signature of the Faculty Guide

Certified by:

Date: Signature of the Head of the Department/Principal



ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

(A Statuary Body of the Government of Andhra Pradesh)

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