COMPASS

~Showing the right Direction...

RAJEEV GANDHI MEMORIAL COLLEGE OF ENGINEERING AND TECHNOLOGY

(AUTONOMOUS)
NANDYAL

(ESTD-1995)

EDITORIAL BOARD

Editor in Chief

Mr. P.NAVEEN SUNDAR KUMAR

Asst. Professor, CSE Dept.,

About RGMCET

Rajeev Gandhi Memorial College of Engineering and Technology was founded in the year 1995. It is located in a 32.04 acre sprawling campus on NH-40 (old NH-18) at Nandyal, Kurnool (Dist), Andhra Pradesh.

It is the dedicated commitment and efforts of our Chairman, the man with vision "Vidyarathna" Dr. M. Santhiramudu, who started the institution with a motto **"EDUCATION FOR PEACE"**. RGMCET is a road of elegant educational journey, yet path breaking in different dimensions.

Rajeev Gandhi Memorial College of Engineering & Technology (Autonomous) is Ranked in the band of 251-300 in Engineering category as per National Institutional Ranking Framework (NIRF) - 2020, Ministry of Human Resource Development (MHRD), Govt. of India.

RGMCET Vision

- *To develop this rural based engineering college into an institute of technical education with global standards.*
- *To become an institute of excellence which contributes to the needs of society.*
- *To inculcate value based education with noble goal of " Education for peace and progress".*

RGMCET Mission

- *To build a world class undergraduate program with all required infrastructure that provides strong theoretical knowledge supplemented by the state of art skills.*
- *To establish postgraduate programs in basic and cutting edge technologies.*
- *To create conductive ambiance to induce and nurture research.*
- *To turn young graduates to success oriented entrepreneurs.*
- *To develop linkage with industries to have strong industry institute interaction.*
- *To offer demand driven courses to meet the needs of the industry and society.*

- *To inculcate human values and ethos into the education system for an all-round development of students.*

RGMCET Quality Policy

- *To improve the teaching and learning.*
- *To evaluate the performance of students at regular intervals and take necessary steps for betterment.*
- *To establish and develop centers of excellence for research and consultancy.*
- *To prepare students to face the competition in the market globally and realize the responsibilities as true citizen to serve the nation and uplift the country's pride.*

About COMPUTER SCIENCE AND ENGINEERING

CSE Department Vision

- To empower students with cutting edge technologies in computer science and engineering.
- To train the students as entrepreneurs in computer science and engineering to address the needs of the society.
- To develop smart applications to disseminate information to rural people.

CSE Department Mission

- To become the best computer science and engineering department in the region offering undergraduate, post graduate and research programs in collaboration with industry.
- To incubate, apply and spread innovative ideas by collaborating with relevant industries and R & D labs through focused research groups.
- To provide exposure to the students in the latest tools and technologies to develop smart applications for the society.

Program Specific Outcomes (PSO's)

1. Students will have the ability to understand the principles and working of computer systems to assess the hardware and software aspects of computer systems.

2. Students will have the ability to understand the structure and development methodologies of software system, that possess professional skills and knowledge of software design process.

3. Students will have the ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.

Program Educational Outcomes (PEO's):

1. To Pursue a successful career in the field of Computer Science & Engineering or a related field utilizing his/her education and contribute to the profession as an excellent employee, or as an entrepreneur.

2. To be aware of the developments in the field of Computer Science & Engineering; continuously enhance their knowledge informally or by pursuing graduate studies.

3. To Engage in research and inquiry leading to new innovations and products.

4. To be able to work effectively in multidisciplinary and multicultural environments.

5. To be responsible members and leaders of their communities, understand the human, social and environmental context of their profession and contribute positively to the needs of individuals and society at large.

Program Outcomes (PO's) – Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Incipience:

A short note for readers... We want to thank all of those who supported us in Compass Magazine. We will always be gratified to the faculty who supported us through this journey.

The essential purpose of Compass Magazine is to inform, engage, inspire and entertain a diverse readership including faculty, staff, students and other friends of RGMCET.

Our magazine glides you through a series of queries you get during the phase of B.Tech and we tried to possibly find answers and solutions for your queries and problems.

You will get to know how the scope of Computer Science and Engineering has in present society and what are the important guidelines you need to follow in order to embellish your success in stream of your choice. So we wish you a happy experience and good luck with your future.

A Quick Glimpse:

COVID-19 Pandemic

Introduction to COVID-19:

The World Health Organisation (WHO) has declared the coronavirus disease 2019 (COVID-19) a pandemic. A global coordinated effort is needed to stop the further spread of the virus. A pandemic is defined as "occurring over a wide geographic area and affecting an exceptionally high proportion of the population." The last pandemic reported in the world was the H1N1 flu pandemic in 2009.

On 31 December 2019, a cluster of cases of pneumonia of unknown cause, in the city of Wuhan, Hubei province in China, was reported to the World Health Organisation. In January 2020, a previously unknown new virus was identified, subsequently named the 2019 novel coronavirus, and samples obtained from cases and analysis of the virus' genetics indicated that this was the cause of the outbreak. This novel coronavirus was named Coronavirus Disease 2019 (COVID-19) by WHO in February 2020. The virus is referred to as SARS-CoV-2 and the associated disease is COVID-19.

What is Coronavirus?

Coronaviruses are a family of viruses that cause illness such as respiratory diseases or gastrointestinal diseases. Respiratory diseases can range from the common cold to more severe diseases e,g.

- Middle East Respiratory Syndrome (MERS-CoV)

- Severe Acute Respiratory Syndrome (SARS-CoV).

A novel coronavirus (nCoV) is a new strain that has not been identified in humans previously. Once scientists determine exactly what coronavirus it is, they give it a name (as in the case of COVID-19, the virus causing it is SARS-CoV-2).

Coronaviruses got their name from the way that they look under a microscope. The virus consists of a core of genetic material surrounded by an envelope with protein

spikes. This gives it the appearance of a crown. The word Corona means "crown" in Latin.

Coronaviruses are zoonotic, meaning that the viruses are transmitted between animals and humans. It has been determined that MERS-CoV was transmitted from dromedary camels to humans and SARS-CoV from civet cats to humans. The source of the SARS-CoV-2 (COVID-19) is yet to be determined, but investigations are ongoing to identify the zoonotic source to the outbreak.

Clinical Presentation

Typically Coronaviruses present with respiratory symptoms. Among those who will become infected, some will show no symptoms. Those who do develop symptoms may have a mild to moderate, but self-limiting disease with symptoms similar to the seasonal flu. Symptoms may include:

- Respiratory symptoms
- Fever
- Cough
- Shortness of breath
- Breathing difficulties
- Fatigue
- Sore throat

A minority group of people will present with more severe symptoms and will need to be hospitalised, most often with pneumonia, and in some instances, the illness can include ARDS, sepsis and septic shock. Emergency warning signs where immediate medical attention should be sought include:

- Difficulty breathing or shortness of breath

- Persistent pain or pressure in the chest

- New confusion or inability to arouse

- Bluish lips or face

High-Risk Populations

The virus that causes COVID-19 infects people of all ages. However, evidence to date suggests that three groups of people are at a higher risk of getting severe COVID-19 disease:

- Older people (people over 70 years of age)

- People with serious chronic illnesses such as:

  - Diabetes

  - Cardiovascular disease

  - Chronic respiratory disease

  - Cancer

  - Hypertension

  - Chronic liver disease

- People who are physically inactive[18]

The WHO has issued and published advice for high-risk groups (older people and people with serious chronic illness) and community support. This is to ensure that these high-risk populations are protected from COVID-19 without being isolated, stigmatised, left in positions of increased vulnerability or unable to have access to basic provisions and social care.

WHO advice for high-risk populations:

- When having visitors at your home, extend "1-meter greetings", like a wave, nod or bow.

- Request that visitors and those who live with you, wash their hands.

- Clean and disinfect surfaces in your home (especially those that people touch a lot) on a regular basis.

- Limit shared spaces if someone you live with is not feeling well (especially with possible COVID-19 symptoms).

- If you show signs and symptoms of COVID-19 illness, contact your healthcare provider by telephone, before visiting your healthcare facility.

- Have an action plan in preparation for an outbreak of COVID-19 in your community.

- When you are in public, practice the same preventative guidelines as you would at home.

- Keep updated on COVID-19 through obtaining information from reliable sources.

Transmission of COVID-19

Evidence is still emerging, but current information is indicating that human-to-human transmission is occurring. The routes of transmission of COVID-19 remains unclear at present, but evidence from other coronaviruses and respiratory diseases indicates that the disease may spread through large respiratory droplets and direct or indirect contact with infected secretions. Airborn transmission can occur in crowded places and indoor rooms with poor ventilated, especially infected persons spending a long time with others, like a shopping mall, restaurant, etc. And also airborn transmission occurs in medical care settings while conducting medical care procedures (aerosol-generating procedures).

Transmission can occur more easily in the "Three C's" (the risk of COVID-19 spreading is higher in places where these "3Cs" overlap):

1. Crowded places with many people nearby;

2. Close-contact settings, especially where people have conversations very near each other;

3. Confined and enclosed spaces with poor ventilation.

The incubation period of COVID-19 is currently understood to be between 2 to 14 days. This means that if a person remains well after 14 days after being in contact with a person with confirmed COVID-19, they are not infected.

Literature review (June 2020) investigates and discusses the unclear issues related to disease transmission and pathogenesis and the accuracy of diagnostic tests and treatment modalities.

Preventing Transmission

The WHO suggests the following basic preventative measures to protect against the new coronavirus

1. Stay up to date with the latest information on the COVID-19 outbreak through WHO updates or your local and national public health authority.

2. Perform hand hygiene frequently with an alcohol-based hand rub if your hands are not visibly dirty or with soap and water if hands are dirty.

3. Avoid touching your eyes, nose and mouth.

4. Practice respiratory hygiene by coughing or sneezing into a bent elbow or tissue and then immediately disposing of the tissue.

5. Wear a medical mask if you have respiratory symptoms and performing hand hygiene after disposing of the mask.

6. Maintain social distancing (approximately 2 meters) from individuals with respiratory symptoms.

7. If you have a fever, cough and difficulty breathing seek medical care.

Diagnostic Procedures

A COVID-19 diagnostic testing kit has been developed and is available in clinical testing labs. The gold standard for testing for COVID-19 is Reverse Transcription Polymerase Chain Reaction (RT-PCR). However, current data suggest that RT-PCR is only 30-70% effective for acute infection, this may be due to incorrect use of lab kits or not enough virus in the blood at the early stages of testing. Plus, the availability of testing will vary from country to country.

The CDC recommends that any person who may have had contact with a person who is suspected of having COVID-19 and develops a fever and respiratory symptoms listed above are advised to call their healthcare practitioner to determine the best of course of action. The main criteria for testing are:

- Location

- Age

- Medical history and risk factors

- Exposure to the virus and contact history

- Duration of symptoms

If the above criteria are met it is advised that the following testing procedure is followed:

- Collect and test upper respiratory tract specimens, using a nasopharyngeal swab

- If available testing of lower respiratory tract specimens

- If a productive cough is evident then a sputum specimen should be collected

- For patients who are receiving invasive mechanical ventilation, a lower respiratory tract aspirate or broncho-alveolar lavage sample should be collected

Imaging may be useful in identifying patients with COVID-19 which is especially relevant in places with good access to imaging technology but poor access to reliable and quick laboratory testing. Chest X-rays are not especially sensitive for COVID-19, but chest CT gives a much more detailed view appears to have good sensitivity in initial stages of the disease. However chest CT or X-ray is not currently recommend as a diagnostic method as they can easily be confused with other infections such as H1N1, SARS, MERS and seasonal flu. Lung ultrasound is also emerging as a valuable diagnostic testing procedure. According to the CDC, even if a chest CT or X-ray suggests COVID-19, viral testing is the only specific method for diagnosis.

Myocardial injury tends to affect COVID- 19 severity and mortality. A meta-analysis showed patients with high cardiac troponin I (>13.75 ng/L) and aspartate aminotransferase levels (>27.72U/L) combined with either advanced age (>60 years) were more likely to develop adverse outcomes. Evaluating cardiac injury biomarkers may assist in identifying patients at the highest risk and leading to specific therapeutic interventions.

Case Definitions

The definitions used by the WHO in COVID-19:

Suspect case:

Clinical criteria:

A patient with an acute onset of fever AND a cough

OR

A patient with acute respiratory illness (at least three or more symptom such as fever, cough, general weakness/fatigue, headache, myalgia, sore throat, coryza, dyspnoea, anorexia/nausea/vomiting, diarrhoea, altered mental status)

Epidemiological criteria:

A person working in a health setting or working in a setting with a high risk of transmission of the virus or history of travel to an area with the community transmission of the virus anytime within the 14 days before symptom onset;

OR

A positive SARS-CoV-2 antigen-detecting rapid diagnostic test (Ag-RDT) in an asymptomatic person not meeting epidemiological criteria.

OR

A patient with severe respiratory illness (fever and at least one other symptom such as cough or difficulty breathing (shortness of breath)) AND that requires hospitalisation AND with no other aetiology that explains clinical picture/presentation of the patient

Probable case:

- a suspected case-patient contact with the probable or confirmed case or linked to a covid-19 cluster.

- a suspected case-patient with chest imaging showing covid-19 disease findings.

- a person with symptoms of anosmia (loss of smell) or ageusia (loss of taste) in the absence of any other identified cause.

- a person with respiratory distress preceding death who was in contact with the probable or confirmed case or linked to a COVID-19 cluster.

Confirmed case:

A confirmed case is a person with laboratory confirmation of infection with the COVID-19 virus, irrespective of clinical signs and symptoms.

- a person with a positive test in Nucleic Acid Amplification Test (NAAT)

- a person with a positive test in SARS-CoV-2 Ag-RDT contact with the probable case or suspected case.

- an asymptomatic person with a positive test in ARS-CoV-2 Ag-RDT contact with the probable case or confirmed case.

Differential Diagnosis

Differential diagnosis should include the possibility of a wide range of common respiratory disorders such as:

- Other Coronaviruses (SARS, MERS)

- Adenovirus

- Influenza

- Human metapneumovirus (HmPV)

- Parainfluenza

- Respiratory syncytial virus (RSV)

- Rhinovirus (common cold)

- Bacterial pneumonia, mycoplasma pneumonia (MPP) and chlamydia pneumonia.

Differentiation should also be made from lung disease caused by other diseases. A CT scan has great value in early screening and differential diagnosis for COVID-19 .

Management / Interventions

In the case of mild to moderate symptoms the following considerations should be taken into account:

1. **Early identification -** Clinicians, especially physiotherapists, are most often in direct contact with their patients, which can make them infected or infected by others. It is therefore very important for physiotherapists and other health professionals to be familiar with the condition of COVID-19, how to identify it and how to prevent it.

2. **Strategies for infection prevention and control (IPC)** - Suspect, probable and confirmed cases should be educated on IPC strategies to prevent transmission of the disease and health management strategies for quarantine.

Find out more about the role of the physiotherapist in COVID-19 here.

For hospitalised patients the WHO highlights several considerations:

1. **Recognising and sorting patients with severe acute respiratory disease** - Early recognition of suspected patients allows for timely initiation of IPC. Early identification of those with severe manifestations allows for immediate, optimised supportive care treatments and safe, rapid admission (or referral) to the intensive care unit according to institutional or national protocols. For those with mild illness, hospitalisation may not be required unless there is a concern for rapid deterioration. All patients discharged home should be instructed to return to the hospital if they develop any worsening of illness.

2. **Strategies for infection prevention and control (IPC)** - IPC is a critical and integral part of the clinical management of patients and should be initiated at the point of entry of the patient to the hospital. Standard precautions should always be routinely applied in all areas of health care facilities. Standard precautions include hand hygiene; use of PPE to avoid direct contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin. Standard precautions also include prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment.

3. **Early supportive therapy and monitoring** - Give supplemental oxygen therapy immediately to patients with severe acute respiratory illness (SARI) and respiratory distress, hypoxaemia, or shock. Use conservative fluid management in patients with SARI when there is no evidence of shock. Closely monitor patients with SARI for signs of clinical deterioration, such as rapidly progressive respiratory failure and sepsis, and apply supportive care interventions immediately. Understand the patient's co-morbid condition(s) to tailor the management of critical illness and appreciate the prognosis. Communicate early with the patient and family.

4. **Collection of specimens for laboratory diagnosis** - Collect blood cultures for bacteria that cause pneumonia and sepsis, ideally before antimicrobial therapy. Collect specimens from both the upper respiratory tract (nasopharyngeal and oropharyngeal) and lower respiratory tract.

5. **Management of respiratory failure and ARDS** - Recognise severe hypoxaemic respiratory failure when a patient with respiratory distress is failing standard oxygen therapy. In the case of respiratory failure, intubation and protective mechanical ventilation may be necessary[37].

Non-invasive techniques can be used in non-severe forms, however, if the scenario does not improve or even worsen within a short period of time (1–2 hours) then mechanical ventilation must be preferred.

6. **Management of septic shock** - Haemodynamic support is essential for managing septic shock.

7. **Prevention of complications** - Implement the following interventions to prevent complications associated with a critical illness such as:

- reduce days of invasive mechanical intervention

- reduce the risk of ventilator-associated pneumonia

- reduce the risk of venous thromboembolism

- reduce the risk of pressure ulcers

- reduce the incidence of ICU related weakness

8. **Treatment interventions** - There is no current evidence from RCTs to recommend any specific anti-nCoV treatment for patients with suspected or confirmed COVID-2019 infection.

This article describes the guidelines on specific aspects of physiotherapy of patients with COVID-19 to limit the spread of the disease and secure the safety of health care personnel. A recent review stresses the importance of a multi-professional approach in treating critically ill children and adolescents with SARS-CoV-2 infection. It proposes the analysis of radiologic findings, appropriate fluid therapy, hemodynamic support, early nutritional therapy, and physiotherapy; however, other therapeutics such as corticosteroids, antiviral therapy, antithrombotic therapy, and use of immunoglobulins can be considered after the substantial evaluation.

For more details on the management of hospitalised patients see this WHO document.

Find out more about the physiotherapy management of people with COVID-19 here:

- Role of the physiotherapist in COVID-19

- Respiratory management of COVID-19

Use of Personal Protective Equipment

The type of personal protective equipment (PPE) used when caring for COVID-19 patients will vary according to the setting and type of personnel and activity. Healthcare workers involved in the direct care of patients should use the following PPE: gowns, gloves, medical mask and eye protection (goggles or face shield). Specifically, for aerosol-generating procedures (e.g., tracheal intubation, non-invasive ventilation, tracheostomy, cardiopulmonary resuscitation, manual ventilation before intubation, bronchoscopy) healthcare workers should use respirators, eye protection, gloves and gowns; aprons should also be used if gowns are not fluid resistant. Among the general public, persons with respiratory symptoms or those caring for COVID-19 patients at home should receive medical masks.

For asymptomatic individuals, wearing a mask of any type is not recommended. Wearing medical masks when they are not indicated may cause unnecessary cost and a procurement burden and create a false sense of security that can lead to the neglect of other essential preventive measures.

WHO has provided a document that specifically outlines the recommended type of personal protective equipment (PPE) to be used in the context of COVID-19 disease, according to the setting, personnel and type of activity, you can see it here.

In the case of a pandemic, supplies of PPE may become limited. Strategies to optimise the availability of personal protective equipment (PPE) include:

1. Minimise the need for PPE by considering telemedicine (providing health care remotely), using physical barriers such as glass or plastic windows e.g. in receptions, restricting healthcare workers not involved in care from being in close proximity with COVID-19 patients.

2. Ensure PPE use is rationalised and appropriate by assessing the risk of exposure and transmission.

3. Coordinate PPE supply chain mechanisms.

Special Population Considerations

Older Persons

Although the virus can infect people of all ages, evidence suggests that older people (those of 60 years old) have an increased risk of developing a severe form of the disease. This may be due to:

- Ageing is associated with a decline in immune function

- Higher risk of co-morbidities (Diabetes, Heart Disease, Lung Conditions, Cancer)

- Residence/Location - Many older people live in care homes or nursing facilities, where the disease can spread more rapidly

To read more about Infection Control in Older Adults see here

Disabled

People with disability may be at greater risk of contracting COVID-19 because of

- Barriers to implementing hand hygiene.

- Difficulty in enacting social distancing.

- The need to touch things to obtain information from the environment or for physical support.

- Barriers to accessing public health information.

- Barriers to accessing healthcare.

This WHO document, Disability considerations during the COVID-19 outbreak, outlines actions for authorities, healthcare workers, disability service providers, the community, people with disability and their household.

Pregnant Women and Newborns

The risk for adverse maternal and neonatal outcomes associated with COVID-19 is largely unknown, but medical experts suspect symptoms of COVID-19 may be more severe in a pregnant woman compared to non-pregnant women. This may be due to changes in their bodies and immune systems pregnant women can be badly affected by some respiratory infections. Women with COVID-19 can breastfeed and have close contact with their newborn, but they should diligently perform respiratory and hand hygiene. No evidence so far that babies have active coronavirus transmitted from mothers.

Low and Middle-Income Countries (LMICs)

The link between mortality and health care resources in the COVID-19 pandemic may cause concerns for LMICs because:

- Inability to afford large-scale diagnostics.

- ICU beds and personnel trained in critical care may be limited.

- Inability to fund the additional cost of critical care units from limited health budgets.

- Disruption of supply chains and depletion of stock, such as medical supplies, equipment and PPE.

- High numbers of internally displaced people and displaced refugees who often have co-morbidities and reside in large-scale camps.

-B. Sai Vinay Krishna

III CSE

WHY COMPASS?

Sharing our insights and experiences

What is compass?

Generally getting and staying involved while in college be one of the best choices you make as a student. Being involved encourages and advances your development on all levels of intellectual, cultural, spiritual and social. Compass guides and shows you an ideal path for your bright future.

History of Compass:

According to the American Society for Engineering Education's Prism Magazine, "**ECMA (Engineering College Magazines Associated)** was created in the 1920s to be a single interface for companies wanting to recruit engineering graduates through ads in the magazines published by engineering colleges". There are records of ECMA member publications meeting for conferences as early as 1923.

Over the years, ECMA has evolved into more of a professional society, granting acclaim to student engineering publications and allowing student's access to many top workers in the publication industry, as well as the knowledge they possess. Every year, one college receives the honor of hosting the ECMA conference. The hosting university then has a chance to showcase their magazine, their university, and their way of life.

Mission of compass:

To welcome students of all faiths, presenting college challenges learners towards academic excellence which helps for the development of whole person.

How Compass helps students?

Compass will help us to know the variable resources and utilities provided by the college. How we have to utilize those resources and face the challenges to become a successful person.

How Compass is useful for CSE?

So many students go through their entire high school career without being exposed to computer science. Rapidly growth in field of studies that is an important key to opening doors to job at technical jobs like: Google, Apple and Face book.

Through our own research we have isolated three resources at why students are not interested in CSE:

- ➢ Lack of Exposure
- ➢ Support is Key
- ➢ Social Factors

Based on above reasons the students are not showing much interest in CSE. By this Compass we can direct or guide the students to get better job by providing some instructions encourage them based upon the challenges what we have faced earlier.

I WILL MISS YOU

I miss you, Brother. Yes, I do.

Never did it occur to me that You would go.

You were too bright a star to get fazed.

Whose trail was worth to be gazed.

My Eyes keep searching for you everywhere

Because in my eyes, you're always there.

Your Smile's so infectious, Your Heart's so pure.

Without you, life is a disease with no cure.

Thou used to dream with Eyes Wide Open.

Faced with an atrocity, Your Courage was often.

You are not the only traveler with Incomplete Journey.

I will not miss you because you have never left me.

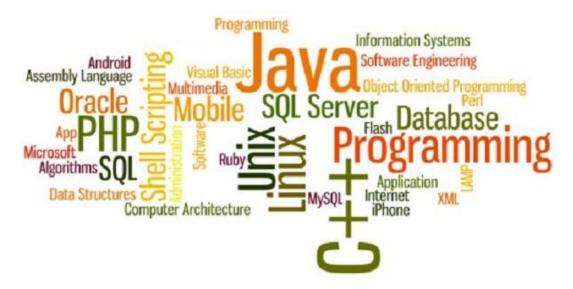-Syed Laheeq, 2nd CSE

SKILLS TO DEVELOP

1. Technical Skills.
2. Soft Skills

TECHNICAL SKILLS

What is meant by technical skills?

Technical skills are practical abilities and specialized knowledge needed to perform tasks in technical roles in IT, mechanics, science, engineering, finance, sales etc.

Technical Skills in CSE:

In CSE technical skills are practical and often relate to mechanical, IT, mathematical or Scientific tasks. Some examples include Knowledge of programming languages, mechanical equipment, or tools.

Technical skills are often most important for jobs related to IT and other fields in the sciences. Required skills will based upon the job for which you are applying, so be sure to be specific when listing hardware, software, programs, applications etc.

Importance of Technical Skills:

Technical skills are important because nearly every job relies on different tools, programs and processes, if you have sought after technical Knowledge and skills common in your industry, the person will more competitive candidate.

Examples of Technical Skills:

The type of technical skills that you may be required to know or learn will depend on what you are seeking. However, there are several technical skills that are common across different industries:

1. Programming
2. Productivity software Applications
3. Industry-specific skills

How to improve our Technical Skills?

We can improve our technical skills by:

1. Enrolling in courses.
2. Use a self-study training program.
3. Learn from a professional.
4. Learn the job.

How to balance your technical skills?

Unlike soft skills, technical skills change with time. Once successfully landed a job it can be helpful to keep your technical skills active In many cases, the tools or programs you commonly used will change over time, so the technical skills you possess now may need to be enhanced with new knowledge. It is better to be get ahead of changes in your field instead of waiting until your skill is outdated.

SOFT SKILLS

Soft Skills:

A soft skill is a personal attitude that supports situational awareness and enhances an individuals and ability to get a job done. The term soft skills are often used as a synonym for people skills or emotional intelligence.

Examples of soft skills:

Soft Skills comprise of personal attributes, communication skills and abilities and personality traits which differentiate people with similar hard-skills set from each other.

➢ Communication skills

- Leadership
- Work Ethic
- Creative Problem Solving
- Time Management
- Conflict Resolution
- Team Player

Importance of Soft Skills:

Soft Skills are increasingly becoming the hard skills of today's work force. Team work, Leadership and Communication are underpinned by soft skills development. Since each is an essential element for organizational and personal success developing these skills is very important,

Soft Skills in Engineering:

Engineering soft skills are just as critical as technical acumen when carrying out the day to day duties of engineering roles.

Top Engineering Soft Skills:

A few of the most important soft skills for engineers include:

- Communication
- Creativity
- Adaptability
- Collaboration
- Leadership

Ways to develop and enhance our soft skills:

- Communication
- Problem Solving
- Data Analysis
- Productivity
- Digital Proficiency
- Creativity
- Agility
- Confidence
- Self and Social Awareness

BOOMING TECHNOLOGIES

What are Booming technologies to be aware of?

According to the present job scenario and stack overflow popularity, the below technologies have good growing opportunities:

1. Artificial Intelligence:

It covers technologies that are used for prediction purpose. The technology stack of AI constitutes

  ➢ Machine Learning
  ➢ Deep Learning
  ➢ Human Computer Interaction
  ➢ Robotics
  ➢ Computer Vision

2. Data Science:

Data Science is all about cleaning, analyzing, organizing, preparing and visualizing the data. It requires the following things to be included

  ➢ Statistics
  ➢ Machine Learning
  ➢ Data Mining

3. Big Data and Cloud Computing:

These are another boom area to be considered as the trending technology in the present sector. It is because of importance of data in life of every individual and consistent improvement in social networks and e-commerce traffic.

4. Android Development:

As the internet users are more comfortable with using android apps than websites, the demand of android development becomes very high. The two popular ways of building android apps are through java and kotlin language.

5. Data Analytics:

Data analytics is the process of examining data sets in order to draw conclusion about the information. Data analytics technologies and techniques are widely used in commercial industries to enable organizations to make more informed business decisions and by scientist and resources to verify scientific models, theories and hypotheses.

- ➢ Business Intelligence
- ➢ Online Analytics Processing

6. Block Chain:

Block chain technology is the decentralized computing environment, where distributed computing plays an important role.

Crypto currency is the major element that profounces the importance of block chain.

7. Internet of Things:

The internet of things or IOT is a system of interrelated computing devices, mechanical and digital machines, object, people that are provided with unique identifiers (VIDS) and the ability to transfer data over a network without requiring human to human or human to computer interaction.

- ➢ Micro Services
- ➢ Operational Technology
- ➢ Information Technology

8. Programming Languages:

1. Python
2. R-Programming Language
3. Java
4. C#

5. .Net
6. C

9. Websites for Programming Languages:

1. Code Chef
2. Hacker Rank
3. Hacker Earth

ADVERSITY IS THE FUEL OF GREATNESS

Adversity is one of the most powerful forces in life. It can bring out your best or your worst. Ultimately, it is up to you.

How will you handle obstacles? Will they be roadblocks or springboards? Will adversity turn your focus from getter better to getting bitter? Or will you see adversity-laced setbacks as true gifts and growth accelerators that provide the opportunity to believe in yourself, revitalize your commitment to what you want to achieve, and reassess what you are willing to sacrifice to make it happen?

I have seen the approach to adversity play out in all walks of life and unfortunately the most common response to adversity is to try and make it go away. The reality is that when you take away adversity you also take away one of the most important ingredients to greatness.

Nowhere is the effect of trying to eliminate adversity more telling that in youth sports. Well-intentioned parents often try to level the field for their children so they get a fair shake, get their chance, or even worse, see the athletic success of their children connected to their success as a parent.

In the worst of cases, the attitude develops that the world is an unfair place that they can't do much about which allows adversity and adversity-rich experiences to lead to a victim mentality. When adversity is avoided or kept from us, it prevents the rich roots of character, learning, resilience, creativity and conviction to germinate.

Adversity plays a vital role in growth and greatness. In simple terms: no adversity, no growth. Instead of avoiding adversity, we need to hug it! It is the fuel for greatness.

You don't have to like it. You don't have to enjoy it. But you do have to believe in it and the role it plays in turning a storm of energy into a true source of strength. It is the learning that comes from the adversity that creates the opportunity for growth.

Here are 7 key ways to reframe adversity as a close friend rather than a fierce enemy.

1. **Build Character:** Overcoming adversity is character building. It shapes us into who we are and who we will become. It creates the confidence to overcome and the learning mechanisms to deal with the things that don't go our way.

2. **Create Resilience:** Learning to deal with and address adversity is what creates resilience. Every challenge we face and navigate strengthens our will, confidence, and our ability to conquer future obstacles.

3. **Learn from Discomfort:** Regardless how sharp, clever or talented we are, we will encounter struggles, challenges, difficulties, and at

times, heart-wrenching moments. Is this to be avoided? adversity resounding, NO!. In times of adversity, we learn the most from the discomfort and rethink what's required to be successful.

4. **Draw Out Our True Strength:** Adversity has the effect of drawing out our strengths and qualities that would have laid dormant without it.

5. **Accept It:** Accept that adversity is inevitable ...it is a part of life. To avoid it or resist it will only make it come back in bigger ways. Better yet see it and embrace it as a true gift on the road to getting better.

6. **Build External Resources:** Adversity helps us find a buddy. You will be surprised how often someone will have had a similar experience and can help guide you through a difficult time.

7. **We Succeed Because of It:** Make no mistake. We don't succeed in spite of our challenges; we succeed because of them!

There is something powerful about adversity that has the ability to imprint in our memory, shaping our character, and moulding our behaviour for the future.

Once you can get your head around why adversity can be a force for good, you will be better able to embrace challenges and grow from overcoming them. The impact on your people and your organization can be enormous, so start that mindset shift today!

In the words of Henry Ford---"When everything seems to be going against you, remember that the airplane takes off against the wind, not with it".

-B. Sai Vinay Krishna

WORKSHOPS ORGANIZED

The department of CSE organized One Week workshop on "Python Programming" under CPE(Colleges with Potential for Excellence)by APSSDC Student's chapter during 05/08/2019 to 10/08/2019.

OBJECTIVES OF COMPASS

- INVOLVE STUDENTS IN DIFFERENT FORMS OF PEER-LEARNING
- ENCOURAGE STUDENT PARTICIPATION IN ACTIVITIES THAT REQUIRE THEM TO ACQUIRE AND DEMONSTRATE RATIONAL THINKING, COMMUNICATION SKILLS AND LOGICAL ABILITY.
- BRING OUT THE LEADERSHIP SKILLS AMONG INDIVIDUALS BY PROVIDING THEM SUFFICIENT EXPOSURE TO UTILIZE THE SKILLS ACQUIRED.
- HELP STUDENTS RECOGNIZE THE IMPORTANCE OF SMART-WORK & THINKING OUTSIDE THE BOX, THUS INCULCATE CREATIVE THINKING.
- CONTRIBUTE TO ALL ROUND DEVELOPMENT OF INDIVIDUALS THROUGH LEARNING OUTSIDE THE CLASSROOM.