

## Profile

**Name** : Satya Prasad Paruchuru, M.S., Ph.D.  
**Designation**: Professor; Alumnus of JNTUCE-H, 1988-1992  
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Total Experience (in years)	Teaching	Research	Others (if any, specify):
28+	28+	28+	5 (Industry)

**Purpose:** The purpose of this detailed profile is to receive suggestions from the stake holders of the teaching/ academic/ research/ industry sectors and the employment institution, including the general public that results in the further improvements of global society and my ‘contributory performance’, during the projected service of 21 years; concerned elaboration, for the enhancement of required sufficiency in awareness

**Objective:** To remain in the teaching and research fields of Technology and Engineering, with focus on the institutional, national, and international interests, in alignment with the institutional vision and mission, in order to continue to produce professionals of global quality for the advancement of Science, Technology, Engineering, Mathematics, and Medicine

### Summary:

Responsibilities and experience as a professor, mechanical engineering, nationally and globally from 2006; presently the employment institution offers no Ph.D. programme/ degree; however, the institution facilitates the guidance of GoI nominated candidates, time to time, with a provision to register at JNTU-H, as such a provision does not exist at the institution

Responsibilities and post-qualification experience at MNCs and internationally reputed organizations over the past 28 years, in order to serve the purpose of engineering education; Design of the enrolled-aware curriculum for UG to enable the enrolled/ taught, achieve **trustworthiness** as appropriate to the programme and technical horizons of choice; the curriculum enhancements from 2011 to 2015 for R11 (AY 2011-2015), R12 (AY 2012-2016), and R13 (AY 2013-2017) served as a means to handle unawareness, alleviate fears, and tackle with courage; **First to implement** instructing engineering drawing and graphics courses and relevant courses of the institution using CAD, continuously from 2011 in the composite state of AP and Telangana, **in spite of severe conservatory pressures** from the institution and the regulatory authority due to non-existence of the practice in the nation; **Purpose:** (1) *Basic career essential* and *pre-requisite* for understanding CAD software as appropriate to core engineering specializations of UG and (2) Spending time with CAD software in the first year imbibes the *practical knowledge* of various software concepts that are relevant to other engineering specializations of UG; Later, it became the common practice in the nation; Within the tenure of much less than an year (**section 2.2**)

Earned the undergraduate qualification in **mechanical engineering** through a regular 4 year programme at the University (main campus) College of Engineering, JNTU (now JNTU-H) during 08/1988-06/1992; obtained comprehensive and dual qualifications during this time; such a programme acted as a means to gain the necessary comprehension, knowledge, skills, and abilities to impart training; the programme demonstrated the need for competency in education and the subsequent employment; also, the program provided the essence to interpret qualification, as a means to further the ambition and not as granted; inference to provide the supervision in order to further the goals and inculcate trustworthiness; contribution of such an academic programme to overcome the apprehensions and face the actuality; the role of such a programme to continue the consistent and able work is vivid

Pursued the **postgraduate (post-UG) education** from the **University of Texas** at San Antonio; details in section 1

Achievement of the knowledge-society and objectives, to balance and benefit the life

Guidance for the projects of high impact and comprehension that involve ethics, significance, and application to the live practical problems

Initiation of the practice to organize the full time short term courses/ faculty development programmes (FDPs) of a minimum of 40 hour length, in UGC/ MHRD/ AICTE approved colleges of the nation, that does not seek any kind of financial support from the ‘funding agencies’ or the employer; organization of fifteen short term training programs of 24-96 hour duration during 2003-2012, eleven other technical training programs, and several other training programs as the coordinator and instructor, that conform to the aforesaid standard; effective utilization of the same in implementing the significant curricular-improvements, from 2002 – to date; details in sections 2.2, 3.2, and 4.1

Design and implementation of ‘feasibility studies and the further developments’ for the educational programs, sectorial revival, and stability

Development of ‘learning resources’ for the comprehensive, confident, and effective education, to serve the purpose with sufficiency

Development and implementation of a concept, ‘bridge course’ in 2001 as a means to significantly improve the ‘learning methodologies’

Curricular improvements with significant progress, for the benefit of the enrolled and the surroundings

Demonstration and practice sessions on breathing and relaxation exercises, and subsequent discussions on the technical topics that are part of the curricular courses, prior to the college sessions; help to interpret the ‘**nationally and internationally**’ good **textbooks** and to remind through effective methods about the need to purchase the textbook of every course, well before the commencement of the respective semester as well as retention of the same; academic help to those who travel long distances: allocation of **office hours**, prior to the commencement of sessions; training with effective diet practices to facilitate the ‘advanced

learning' and healthy life; on playing a crucial role to enable and support an ethical, stable, healthy, and happy society

Design of the effective 'learning methods' and value addition to the enrolled, in accordance with the 'chosen field and interest', in order to ensure the integrity and protect the interests

Promotion of 'ethical practices and thinking' to ensure an efficient, healthy, and sustainable economy; creation versus gain

Development and teaching of subjects (courses) and development of laboratory resources, in order to alleviate the learning difficulties, from 1993 – till date

Did not waste time to publish the contents that are not supposed to be published by the faculty (details in 5.7 and 5.8); Initiation of several publications in wos/ jcr/ sci journals, conferences held by the internationally reputed professional societies, and several other technical presentations at the 'venues of repute', in order to establish the consistency in teaching, from 1993 – till date; published the first international journal paper as the primary and corresponding author in a SCI journal from a self-finance institution in the composite state of AP and Telangana in the year 2002 – at the time when not even a 'self-finance autonomous institution' existed; this is the first journal paper published in the area of fracture mechanics from a self-finance institution in the nation; first in the nation to publish 12 international journal papers as the primary and corresponding author in specialist-audience journals, from a self-finance institution (5.7 and 5.8)

Initiation of several state of the art research facilities and the nourishment in order to further the multi-faceted education and ethics; products, processes, and methods

Initiation and execution of several sponsored research projects (SRPs; section 5.9) from the National Funding Agencies (NFA), number of industry and academic projects (section 5.10) over the technical realm, to help the human resources to absorb academics without burden, thus to revive ethics in education; research and applications; first to get awarded a SRP from a NFA, DST (GoI) at a self-finance institution in the composite state of AP and Telangana – when not even a 'self-finance autonomous institution' existed; this is the first SRP of a self-finance institution, in the field of fracture mechanics in the nation; first in the nation **to get awarded DST's well reputed BOYSCAST fellowship in 2005, at a self-finance institution**

Earned revenue through a sponsored research project, consultancy, exclusive industry sponsored short term courses (no fee for the student participants) organized and taught by me, and savings made on the customs duty for the purchase and import of the concerned international quality research equipment (as part of the aforesaid sponsored research project) from the leading international manufacturers (due to the unavailability of such research quality domestic-equipment; excludes the appreciation in the cost of the equipment) that is in total more than the total salary drawn during my entire service at the first full-time employer in the teaching field during August 2000 to February 2006; revenue through the aforesaid sponsored research project is 2.5% of the total annual revenue of the institution; earned revenue through another prestigious international sponsored research project that is in total

more than the total salary drawn during my entire service at the next full-time employer in the teaching field during March 2006 to December 2008; earned revenue through one more sponsored research project, two more external grants, nominal fee charged to the participants of short term courses organized (in accordance with institutional guidelines) and taught by me up to 2012, savings made on the customs duty for the purchase and import of international quality research equipment (as part of the aforesaid sponsored research project) from the leading international manufacturers (due to the unavailability of such research quality domestic-equipment; excludes the appreciation in the cost of the equipment), additional expenses incurred on the recently aforesaid sponsored research project for the import of international quality research equipment from the leading international manufacturers (due to the unavailability of such research quality domestic-equipment; excludes the appreciation in the cost of the equipment) met from the regular salary drawn, and expenses incurred for filing of the patents met from the regular salary drawn, that is in total equal to the total salary drawn during my first six years of service at the next and recent full-time employer in the teaching field during January 2009 to December 2014; did reach the standards pertaining to external grants in comparison to my previous employment in terms of quality, quantity, and communication, in spite of the excessive involvement (trustworthy role; section 2.2) in academics and the other assigned responsibilities from AY 2008-2009 (section 7); assumed the responsibility of voluntarily meeting the expenses of importing additional and required equipment on the aforesaid sponsored research project, and filing of patents during 2011-2018, from the regular salary drawn and the principal amount is equal to INR 9 lakhs even though the head of the institution came forward to meet the aforesaid expenses at the right time; details in 5.9.

**Initiation of the practice of summer project training** in the composite state of AP and Telangana, for the undergraduates for a minimum of 30 full time working days, as a lecturer at the employment institution in 2003; continuation of the same by extending the realm to the department level as the Head of ME/ AME in 2011; the initiative catalyzed the ‘**enrolled-training**’ and the speedy completion of the **Ph.D. of faculty members** during 2003 – till date

Development and implementation of all time and top quality syllabus and curriculum of the nation for the undergraduate mechanical and automobile engineering programmes of 2011-2015 as HoD – ME and AME during 12.2010 to 08.2011 and Chairman of the department board of studies during 01.04.2011 to 31.05.2012; taught five different (engineering core; non-elective) courses of the mechanical engineering programme during the first three years of the commencement of the aforesaid batch, primarily to facilitate imparting the deserving-essence through UG training; continuation of the quality, quantity, and communication; extension to various other programmes (section 2.2)

Demonstration of the importance to improve the absorption of certain basics/ fundamentals of the chosen field that fosters the ‘**continuous learning**’ by reliable sources, as long as alive and to imbibe the ‘quick verification abilities’ by means of the multipurpose intelligence

Insistence to continue to achieve excellence and exclusivity in skills and abilities, apart from the depth of knowledge to ensure effectiveness in the job

Socrates: Superior Minds discuss ideas; Average Minds discuss events; Weak Minds discuss names

Inference: An idea may be explained by means of an event; mention of an example (case study/ enterprise/ entity)? Need for cautiousness about the possible wrong interpretation of an example) may provide the further understanding of the corresponding event/ idea; every mind plays suitable roles including the mentioned, while addressing the distributed requirements of the audience; clarity on the purpose; role of a person might be different from that of the probable audience; every individual of the audience may have a distinct objective; voluntary realization of comprehensiveness and clarity may be essential to develop in to an all-round personality that supposedly preserves the immortal values of ancient culture and tradition; most of the ancient philosophers/ scientists suffered due to lack of food and ensured accessibility of the sustainable resources, for the globe; a sincere query is important so that the audience will definitely have an opportunity to obtain clarity? the audience may take the lead to gain the preparedness to perceive the technical intent and the content of the lectures? precaution is necessary to improve the skills and abilities and also preserve the confidence of the broad set of audience? private tuitions in higher education may undermine the exclusivity – *to use the institutional and transparent mechanisms to grasp the professional essence from the qualified faculty, in a conducive way?*

Not even a minute's time spent on OD/ leave of absence in the name of an observer, resource person, or any other role external to the employment institution at any point of time and in any form (section 7 for the complete list of employers at different time-frames); belief in the practices of international universities that target institutional and national growth of the deserving standard through exclusivity; **actuality versus interpretation**

Not even a paise (penny) or its equivalent other than the regular salary in any form and at any time, in total or by parts; not even a paise (penny) or its equivalent, more than the deserved, as salary or any other form and at any time in total or by parts; nothing unauthorized at any time either by the institution (employer) or the government; world acknowledged qualifications and credentials, never poised at deceiving anybody or any other entity by the reason of ignorance or any other; immaculate training in spite of the common adversities; regular and classroom education of sufficient quantity, quality, and communication for the righteous purpose of education; educating the possible extents; explaining the exclusive purpose of each individual and the requirement of rational balance for the useful existence; enthusiastically and interestingly surviving for the purpose of education, in a less aware 'field and domain' consisting of very few qualified people, where insufficient comparisons and impatience supersede in all the matters; habits that develop over a period of time and illegible promises appear to be reason for intense thoughts or actions which may start destroying the world in the short term or long term; **actuality versus the preparedness**

The enrolled and 'work force' need to be wary about the unknown and unpredicted consequences of 'Attending the Classes from Home' and 'Work from Home', obviously due to the lack of understanding of the new situation that never existed in the recent history; to remember that the members of family need sufficient time to understand the stance and the

inherent consequences; a meticulous and patient explanation by sparing sufficient time is necessary to avoid such misunderstanding; especially **Dedicated/ Trustworthy/ Talented/ Mighty/ Able enrolled** and ‘Work Force’ need to pay special attention to this situation for the reason that it is hard to find the necessary spare time in the schedule, due to **preoccupation by knowledge-thoughts**; restraint from the contempt-answers is primary; think twice if your answer may hurt the other members of the family; **integrity is important**

Improvement of skills and abilities in an ethical manner to gain the **exclusivity**

**Suggested the benefits of the following:** to not use the leisure time to **directly or indirectly sense** the opinion of the possible sources of conflict-of-interest in order to plan an apparently-ethically-organized activity? **an effective implementation of movement register** and surveillance at the break-facilities during work-hours may reduce the distraction due to apparently soft and indirect conversation that kills the work culture? to not use the designation to follow silence for injustice, in the shelter of unethical means? to not use the ethical mechanisms to initiate or continue the sub-standard practices? e.g. (1) not following the practice of ‘effectively recommending’ ‘**nationally and internationally**’ good text book’ for decades? (2) not implementing the practices to let the beneficiaries realize and imbibe the ‘exclusiveness’ through ‘**nationally and internationally**’ good text book? (3) discontinuing the effective practice that was put in place through the life-time hardship? (4) **to not silently contribute to inferior learning practices** and defend the same by organized activity – silent and indirect indication to follow junk books by making use of the ethical mechanisms? **Caution:** assumption that no knowledgeable person is observing? may unknowingly hurt the future? apprehension due to insufficiency?

**Suggested the benefits of the following, for sustainability:** not using the designation to mislead the decision makers? not misusing the official network for undue favors and benefits? not escaping from the duties as an engineering academician?

**Suggested the benefits of the following:** not being instrumental to propagate the rumors and jealous-means? not using the designation to facilitate the mentioned? not playing dormant-role for the unethical propagation, with the expectations of the removal of barriers that may happen by the act of someone else? **Caution:** the three roles on the contrary may turn out to be highly detrimental to an institution in the reverse order – programme fitness? propagation of supporting such unethical move for personal interests is a menace to professional education? misinterpretation of the propagation as supporting only speaks of the unfitness? such a behavior is worse than indulging in an absolute-illegal-activity? **pretention has become an ongoing practice**, to reap the undue favors? basic behavioral problems versus a cover due to the employment?

**Suggested the benefits of the following:** to not use the influence to put the human resources and the relevant, in misconception? eg. effective implementation of the practice of recommending ‘**nationally and internationally**’ good text book for curricular courses; to circumvent the inevitable COVID phenomenon, for effectiveness and exclusivity of the institution and the nation; to not initiate or continue the tactical misguidance, in the name of

favors; to not assign or hint the work that leads to deterioration; to poise the suggestions and implementation mechanisms that fairly intends the improvement, as required by a developing nation; Caution: unethical practices in the name of ‘ethical means for existence’ may not sustain – an indication to the beneficiaries/ decision makers to realize the facts

Suggested the following: Work that **represents the designation**, never poised at deceiving the audience? **further elaboration** in the concerned point of 3.1

**Section 3.1 explains the need for sufficient academic awareness apart from the professional life; most of the contents apply to the emerging economies**; the detailed section may supplement the professional essence listed in the other sections?

Thanks are due to the stake holders of the teaching, academic, industrial, and research fields, and my present employer/ past employers (section 7) for providing a leading, satisfactory, professional, and valued life that ensures optimal performance and communication at all the times

## 1 Educational/ Technical Qualifications:

S No	Level (UG / PG )	Year of passing	Specialization/ Institute
1	S.S.C. (I – X standard)	June 1986	Nirmala High School – Machilipatnam ; Board of Secondary Education-Hyderabad, India
2	+2 education	June 1988	The Hindu College – Machilipatnam; Board of Intermediate Education – Hyderabad, India
3	B.Tech. (full time, <b>regular</b> ); from JNTUCE ( the main-campus college, Kukatpally); the college used to offer full time and part time programmes)	June 1992	Engineering and Medical Common Entrance Test (EAMCET) Rank, in the composite state of AP and Telangana, <b>first attempt</b> : 417; Admission – Acceptance rate: 2.5%; Mechanical Engineering, Jawaharlal Nehru Technological University College of Engineering (JNTUCE), JNTU, Hyderabad; Project Guide: Dr. K. Eswar Prasad – JNTUCE; Er. Ravindra Naidu – BDL)
4	ADSM-Advanced Diploma in Systems Management ( <b>dual qualification</b> )	April 1992	2 semesters-26 <i>teaching weeks each</i> Systems Management, National Institute of Information Technology (NIIT)-Regional Centre, Hyderabad
5	Audit for the next sem. (discontinuity to join UTSA)	August 1992	3 <sup>rd</sup> semester - HDSM Systems Management, NIIT-Regional Centre, Hyderabad
6	Audit of computer science – UG courses	December 1992	GRE: Quantitative: 780/800; Verbal: 460/800; Analytical: 570/800; Year of Test: 1991 University of Texas at San Antonio
7	MS in ME	May 95	Mechanical Engineering, University of Texas at San Antonio Thesis Supervisor: Dr. Agrawal – UTHSCSA, now UT-Health; Dr. Athanasiou – UTSA
8	Ph.D./ Doctoral	August	Applied Mechanics/ Mechanical Engineering,

		2005 to October 2008	Motilal Nehru National Institute of Technology (MN NIT – India)/ UTSA; Jointly trained at UTSA for one year; Thesis Supervisor: Dr. Jain – MN NIT; Dr. Wang – UTSA
9	Post-Doctoral	October 2010	Training, as part of the BOYSCAST Fellowship research (Guide: Dr. Dong – UT; Dr. Wang – UTSA, Dr. Jain – MN NIT)

## 2 Teaching and Learning:

### 2.1 Teaching Interests:

Academic; Taught: UG- 26, PG - 9

Taught (typical list):

- Engineering Mechanics – Statics (Text Book: EM by Timoshenko and Young)
- Engineering Mechanics – Dynamics (Text Book: EM by Timoshenko and Young)
- Kinematics of Machinery (Text Book: Theory of Machines by Bevan and Theory of Machines and Mechanisms by Shigley)
- Dynamics of Machinery (Text Book: Theory of Machines by Bevan and Theory of Machines and Mechanisms by Shigley)
- Mechanics of Solids - I (Text Book: Mechanics of Materials by Gere and Timoshenko)
- Mechanics of Solids – II (Text Book: Mechanics of Materials by Gere and Timoshenko)
- Finite Element Method (Text Book: Introduction to Finite Elements in Engineering by Chandrupatla and Belegundu)
- Structural Analysis (Text Book: Structural Analysis by Hibbeler)
- Fracture Mechanics (Text Book: Fracture Mechanics: Introduction and Applications by Anderson)
- Mechanism Design Laboratory (Lincages software, mechanism design for the biomedical applications, design of machines, etc.)
- Materials Engineering Laboratory (Fracture Mechanics, Mechanics of Solids, Tribology, biodegradable Implants )
- CNC Laboratory (Development of module for the machining time anticipation of jobs when such a feature did not exist in commercial software, in 1992)
- Vehicle Dynamics Laboratory (MAPLE software, Stability of a four wheel truck)
- Craniofacial Mechanics Laboratory (change of file format of CT scan images when there existed no software to allow to input image to any of the FEM/ FEA software)
- Computer Aided Equipment and Plant Layouts Laboratory (using AutoCAD)

- CAD Laboratory (3D Modeling; FEM/FEA; modeling of residual limb; analysis of bolted connections; dataflow diagrams, handling databases, etc.)

**To Teach (Typical list; in addition to the aforesaid):**

Theory of Elasticity and Plasticity, Theory of Plates and Shells, Theory of Elastic Stability, Advanced Mechanism Design, Machine Design, Advanced Machine Design, Advanced Mechanics of Solids, Vibrations, Biomechanics, Biology

**2.2 Novel Teaching & Learning Techniques adopted:**

**Curricular reforms** of R11 (AY 2011-2015) – ME and AE being a source for the following:

- Comprehensive learning resources
- Lab protocols/ management
- Bridge course
- Process oriented guided inquiry and learning
- Learning by Doing
- What/ Why/ How am I teaching and What/ Why/ How am I learning
- Exercises and experiments
- To convey the essence of several sponsored research projects to the enrolled
- To convey the essence of several industry projects to the enrolled
- State of the art facilities and intellectual resources
- Several thought provoking curricular courses
- Fifteen short term training programs, eleven other technical training programs, and numerous other personnel development programs
- A net revenue (after expenses) of INR 127,000.00 on short term training programs (STTPs) during 2002-12 through a ‘nominal fee’ charged to the participants in order to revive the ethics
- Assistance in addition to the regular teaching

**References** include:

- Detailed syllabus (curriculum) books for B.Tech.- **R11** of ME and AE (prepared with the authorization; Chairman, Board of Studies – ME and AE up to May 2012; presently available on the institute-website)
- Minutes of the institutional meetings conducted during 2009-2011, chaired by the management and CA (Chief Administrator) of **Vignana Jyothi**
- Organization and teaching of STTPs and other programmes during 2002-2012
- Paruchuru, S.P., Syllabus, Curriculum, and Evaluation Concerns that Affect Quality in Technical Education, National Conference on Quality in Technical Education, VRSEC, Vijayawada, 18 November 2002, pp. 56-57 (made available-upon request)
- Proposal submitted to NIIT, New Delhi in 2001 (made available-upon request)

**Involvement in Curriculum Updating/ Design:**

- Inputs to the engineering programs

- Effective revival of the curricula of UG programs starting from the first batch of the autonomous institution (VNRVJIET)
- Obtaining CAD software from the authorities much before the commencement of Academic Year (AY) 2011-2012 with the existing resources, providing thorough training of the members of faculty, and implementing instruction of engineering drawing and graphics courses and relevant courses of the institution using CAD, from 2011 in spite of severe conservatory pressures from the institution and the other regulatory authorities
- Relevance of CAD to the circuit branches of study
- Source for the evolution of significant teaching improvements in the workshop methodology from the commencement of AY 2017-2018
- Demonstration of the teaching methodology of laboratory classes that involves the delivery of inputs required from the members of faculty, and the help of technicians/instructors with the operation of the laboratory machines and noting the machine-readings, thus ensuring value addition to the enrolled by involving the **exclusive** efforts and significant contribution of both the roles of human resources mentioned above, by avoiding the overlap of responsibilities
- Resource and assistance in addition to the regular teaching; details in section 7.

### **3 Co-curricular and Extra-Curricular Activities:**

**3.1 Interests and Hobbies:** *The following details explain the need for sufficient academic awareness apart from the professional life; most of the contents apply to the emerging economies; the detailed section may supplement the professional essence listed in the other sections*

Suggestion of benefits of the following national/ international matters pertaining to societal, governmental, economical, educational, and leadership issues and the further assistance, as per the request

**Clear objective and the necessary approach** as a means of achieving (as the world is perplex, insufficiency may mislead; gratitude from the inner heart; tolerance)

**Hardships involved in the healthy-transformation of a conventional economy;** need to withstand the day to day challenges; aggressiveness versus conservativeness; strategic policies and methods for the sufficiency and ecological balance, culture, awareness and happiness, and enhancement of outcome

**Need to retain the competencies and a healthy economy,** thus promoting a healthy attitude towards the necessary means; mutual respect for the inheritance, history, and culture of each place/ economy; emphasizing the need for retention and conservativeness; critical and sufficient erudition from the past; promotion of stability to ensure sufficiency and ecological balance; need to enable the healthy transition (every place that was defamed at a particular time, flourished at many times with abundant values)

**Enabling enduring growth, reasonable standards of living**, and improving various practices in order to tackle the adverse effects of phenomena (various prosperous places that implement affirmative action maintain very high work and education practices, and dignity of labor; refinement of human resources, apart from the persistence on patriotism, tolerance, nationality, and humanity, being one of the reasons?)

**Sustainable assistance to the needy in order to meet the basic requirement** (exercise, nutrients, awareness about constraints, etc. may revive the health and a healthy attitude; in most of the prosperous places, the work and education practices are exemplary, even though there exists government-aid to provide food to the needy?)

**Means to effectively reduce the burden and enhance the result**, for sustainability of the systems (in some of the places, even though competent practices are being followed for the output, very high conscious and individual-level practices of clean, hygiene, and sanctity of the public are in use, in spite of the optimal use of human resources; effective disposal of the used motor or engine oil, by the individuals and service-stations; some of the prosperous service-stations/ auto part enterprises receive such used engine oil from the individuals for proper-disposal; still the citizens exhibit higher levels of patriotism, tolerance, unity, nationality, and humanity?)

**Grant of permission** to set up tiny and probable pollution arising places, only **at the designated places where there is complete surveillance about the operations and disposals** is a step forward to protect the water resources like tanks (cheruvu), rivers and underground water; holding a market value to the used materials for recycling purposes is one of the ways of reducing the associated pollution

**Responsibilities, involvement, awareness, and sacrifices of a healthy role and the effect on the lives**; to identify the problem in the surroundings as early as possible to do the needful; to realize the necessities as early as possible and to cope up with the harsh actuality, if persists; sensing the indirect conduct and vulnerability as soon as possible; *considering limitations of the people and systems in the case of comments and suggestions*; trying the possible; in case of identifying any prior deviation (and non-identification in the past due to systemic barriers?), getting rid of it in the present and future; system improvement versus personal gain; good versus bad

**To ensure an ethical, stable, healthy, and happy world in spite of obstacles, and suitably transfer to the next generation** (citizens with ‘discipline and dedication’ and individuals with values make the institutions, businesses, and economies run efficiently)

**Role of education** to revive the sustainable economy and integrity, in order to withstand the global changes (one of the ways of refining the human resources)

**Efficiency in organizations** (false beliefs about wrong activities could lead to severe implications; against the conscience/ consciousness; integrity versus intolerance/ inhumanity; learning versus inertness/ interference; silence as a means of enduring)

**To restrain from involuntary or inappropriate public expression** and the effect on values; cautiousness about the obvious interpretation of the unmeant; refinement in the other viewpoints, causing no/ minimum disturbance to the ecological balance and progress (normal employees of an industrial business voluntarily came up with a feasible method to transform the disposal of the same industry into healthy atmospheric elements; capable high school education with values being one of the reasons?)

**Prosperous economies have the track record of vesting useful resources for supporting and reviving the sectors that degrade due to the global scenarios and time.** Eg.: farming, weaving, etc. Such economies do not enjoy the degradation of useful sectors for thrifty and immature reasons. Eg.: An economy supported the farmers by wholeheartedly **encouraging the dairy-farms** (rising the cattle) not only to improve the supply of milk and deriving products **but also** to ensure the **organic manures** to agriculture-field, thereby contributing to the considerable improvement of **public-health and sustainable employment**. Such simple and able measures brought in improvements in the economy through reviving several directly and indirectly connected sectors

**Swachh (clean) rail (train) is a good initiative that is part of Swachh Bharat** that happened in the recent past. However the modification to the toilets (rest rooms) put forward as a part of this initiative has thrown the maintenance in very poor condition for the reason that the passengers lack the proper orientation. Installing display-posters (undamageable) with proper 'visual instructions to use water-flush' in each compartment and on either ends of each train-bogie may help. Posters may also campaign the practice of bringing a waste-bag to put the waste papers, garbage, etc. and dispose after getting down. Such measures may help to stop the prevalence of diseases in the trains and areas of high population density, at competent costs. It is worthwhile to suggest an equally important point that results in the hygiene at the premises including toilets of the other public facilities. Compensating the personnel responsible for the maintenance of public toilets and other facilities in a reasonable, transparent, and accountable mode is one of the ways to maintain the hygiene and promote tourism, by the motivation of the concerned staff. The ultimate responsibility of the maintenance of such facilities may be vested with the authorities and implemented strictly in order **to improve the public-hygiene and thus prevent the spread of diseases**. This is the same case with the maintenance of several public facilities in the nation, especially in secondary cities and towns. Swachh Bharat may be extended to every public premise by customizing the names like swachh-rail. Ways and Means to improve the slum-areas is essential

Government has the need to protect the long-term interests of the occupants of the assigned land, i.e. the land assigned by the government, for the purpose of earning through cultivation; if few 'members of a family' get benefitted over a time-frame, the rest of the members may get the further benefit of the same land over the next time-frames; such a fair objective can be realized by the beneficiary and the government, only due to the present guidelines made by the law; intervention of the appropriate authorities is necessary over the initiatives that aim at diluting the intent; such a precaution also puts an end to the unfair practices of land acquisition; the above narration clearly explains the need to protect

the interests of the occupants with the acts that arise due to speedy decisions or want of temporary benefits – to note that the money obtained by selling turns out to be highly volatile

Clearing of all sorts of encroachments and clear-marking of boundaries of the existing widths of all sorts of roads is the primary requirement of the nation. In order to enforce such an initiative, the people's representatives may be made part of the enforcement-teams and setting a time-frame for the entire activity is very important. This initiative is more important than extending the existing widths of the roads and any other roads/ buildings/ construction activities of the nation. If there is a requirement to initiate a proposal of extending the existing width of a road, a 25 year prior notice looks fair and land acquisition and compensation act of 2013 may prevail on the day of reimbursement and rehabilitation activity and not the notice-date. A ban on the purchases and registration of such properties may not prevail until the date of acquisition, as such an act affects the 'market price' definition of the land acquisition and compensation act of 2013. However fair practices of informing the purchaser of such property is necessary and mandatory. Such fair measures may wipe of the existing blame on the government and puts away the concerned practices. Building steps and ramps in the road margin is also an encroachment and has been serving as a main source of accidents. A question might arise about the rehabilitation of the hawkers. Government at various levels have plenty of land in every locality and an area that is accessible to the consumers may be freed from the encroachment and direct the hawkers to operate their businesses on rental basis. Another question might arise. That is, the hawkers serve the surveillance-purpose by the side of the roads. It is imperative to come out of such opinion in the best interests of the nation. In the wake of such an opinion, it is good to question that do the criminals not have their protective measures to bypass such surveillance? Are not the hawkers busy with their customers? Are the criminals not considering them to support their crime? Cannot the surveillance cameras, technology, and the mechanisms like social workers provide a better alternative? There is a requirement for an alternative to avoid running of electric and other cables in air, by the sides of the roads as it affects the effectiveness of the roads. Use of underground cables and/ or wireless communication is an alternative. Even though the implementation of underground electric cables is more expensive, it is good to note that lesser power losses in the transmission compensate. It is good to start with the implementation of underground cable system on the highways and roads that may not require extension in the next 50 years

For land acquisition that benefits the private sector and public sector (profit making) units (PSUs), land allocation on the basis of ninety nine year lease may be the best alternative in the national/ international/ industrial interests. Such an act may give immense motivation to excel in the industrial business to the possible extent at par with international quality. Such an act may erase the wrong message that is tremendously prevalent in the public about the real estate business in the name of industrialization. Such an act may greatly utilize the competent domestic human resources to compete in the business. Such an act may erase the tendency to sell the businesses and flee for the temporary benefits. Such an

act may greatly enhance the competency of the local and national talent. In the same way if the government wants to allocate land to the celebrities or other persons it may be done on a ninety nine year basis. In summary, in the best interests of the nation, the government may take the yield from the land and may not possess the right to sell to anybody. An act from the appropriate authority may help in this matter, giving a clear instruction to the authorities. Implementable criminal and civil proceedings on the concerned in the case of violation may discourage the participants and preserve the interests

**Improvement of a reliable, safe, and secure public transportation system** is one of the measures for implementing a pollution free and effective society in the countries of high population density. Such a public transportation system may run buses of different sizes to suit the local needs and roads. For example mini-buses may run the shuttle service effectively on roads of smaller width and help to effectively transport the public to the wider 'roads and junctions'. There may not be the need to hire a conductor for such buses. Installing money collection box at the driver's cabin and modification to the entry-doors/emergency-doors of the buses may help the bus drivers to collect the fare without obstructing their duties. It may be understood that the subsidies will drive such schemes so that the employees of the public transportation system have to finally bear the associated financial burden. The employees of public transportation system do risky job and therefore may not be fair to levy the financial burden. One of the effective ways to improve the public transportation system is to significantly increase the individual-vehicle taxes (sales and annual taxes) and toll charges for the individual vehicles like in Singapore. Such a measure may greatly improve the public health due to the control of pollution and accidents. More importantly such a measure may considerably strengthen the currency due to the savings made on the import of crude oil. Following instant decisions that lack sufficient analysis in the matters put forward in the present point and the four points that immediately precede, may turn out to be detrimental

**Introduction of at least two hours of instruction and practice per week during the academic sessions from 8<sup>th</sup> to 10<sup>th</sup> standard in the high schools, to attribute practice with manufacturing/ precision manufacturing, electrical wiring/ repairs, disassembly and assembly of mechanical and hydraulic components, etc. may greatly improve the effectiveness of the high school education.** In the developed economies, the students start to work part-time right from the age of sixteen and hence develop practical skills by the time they start UG education. In the nation, as such a social change is far from practicality, the alternative proposed in this point may help in improving the employability of the high school and college graduates. The deficiency mentioned here may not seriously affect the Information Technology, Computer Science, some aspects of the Electronics Design, some of the medical streams that highly depend on the diagnosis/prescription of medicine and the allied fields, and hence the national graduates from such disciplines do globally better. There is a requirement for such excellence in all the other fields like Engineering, Management, Finance, and Medical fields like Othopaedics, Surgery, Ophthalmology, and Dental Sciences. Such modification in the high school

curriculum may not only improve the employability of the high school graduates, but also helps the enrolled to understand the concepts of further-education and *impart them the ability to understand* ‘**nationally and internationally**’ good *text books* in their fields of study

This point is connected with the considerable improvements in engineering education. At present there exist two different streams to study the engineering UG programmes (B.E/ B.Tech/ B.S) in the nation. One of those streams is to study 12 years (10+2) of high school education (apart from Kinder Garten – KG, i.e. apart from the education prior to I standard) and then enter into the I year of the UG programme. The other stream is to study 10 years of high school education (apart from KG), then to study a 3 year poly-technique diploma programme, and then enter into the II year of the UG programme mentioned above. Therefore, the enrolled from both the streams study common syllabus starting from the II year of the programme. Such a system may nullify the exclusive strengths of the enrolled of the second stream, mentioned above. The students belonging to the second stream mentioned above may possess skills **that may help the manufacturing sector if they study a UG programme that constitutes laboratory and theory courses in 2:1 proportion**. The enrolled belonging to the first stream may possess better skills that help the design, analysis, and development sectors. **Caution**

**Consequences of wrong feedback systems and use of such feedback**, on the education and other systems (refinement of the systems, composing of people in good number)

**Mechanisms to encourage reading ‘nationally and internationally’ good textbook for each course (subject) of engineering programs, and feasible methods to implement;** limiting the contents and credits of the suitable subjects of the programme; the practice of the enrolled to purchase, follow, and retain textbooks even after the completion of the subjects and practical methods to implement; to alleviate the usual misconception (eg.: subjects offered by the departments other than the parent department, by mentioning the relevance); more weightage to the first mid-term exam of the semester (in case there exists two mid-term exams per semester, one held at the middle of the semester and the other, at the end of the semester); to voluntarily improve the attendance and adhere to the classroom practices with alertness; to smartly realize the importance of the absorption of curricular contents, (eg.: awareness of the fact that lost-time, supposed to be spent on learning the curricular contents would never be regained; the practice to routinely write the disconnected during the lecture may portray temporary benefits and lead to problems); practice of office hours; avoidance of wrong use of the flexibility in the preparation of the syllabi/ curriculum and sensible methods to implement (to ensure everlasting benefits); technical lapses versus political blame; the applicable suggestions as per the cognition in order to ensure peace and integrity

This point discusses an effective means of improving the engineering education. The expectations of the enrolled and parents may reflect the actuality, considering the awareness on the effective modern learning techniques **especially when the specific educational field and employment sector are new**. For example, the experiences

relevant to the professional and government sectors may be different from the intricacies present in the modern engineering and private sectors. Such a problem may severely affect the aspirations of the enrolled, if the practices of the educational field and certain measures cannot be perceived in proper time. **To primarily note that no educational institution can assure 100% faculty of particular quality and realize the advantage to the possible extent, when it comes within the reach.** In such a case, it is important to not expect the regular measures *especially if they come in your way of attaining exclusivity; eg. a fair opportunity to follow ‘nationally and internationally’* good text book **and gain the professional exclusivity – until such a practice becomes common, is it good if the faculty members above the designation of Assistant Professor, teach only suitable non-elective UG courses in terms of quality, quantity, and communication up to the ‘Vision and Mission’?** The skills and abilities gained through the regular course work may target the national **and** international quality. If a faculty member does the needed, the courage to ‘follow and teach’ the contents of ‘**nationally and internationally**’ good text book **and** to ‘fairly encourage and guide’ the enrolled to follow such textbook, develops. If the aspirations of the ‘enrolled/ their parents’ and the actual skills and abilities imparted, continue to have a wider gap, they may add up to the psychological/ behavioral/ social/ medical problems. The institutes cannot afford to follow a general guideline of only rendering to the practices that may be understood by the ‘enrolled and their parents’. *Does the nature create an infant only up to the knowledge that can be perceived by the infant?* Avoiding, hiring of substandard members of faculty and avoiding for higher positions may be one of the ways of preventing the problems, **especially if an institution wants to train the enrolled at national and international quality in accordance with the vision and mission.** If a technical faculty member never had regular *classroom* education after 7<sup>th</sup> standard (out of 10+2 high school education), that is directly relevant to the *regular* programmes offered, the objective of the concerned will always poise at hindering the progress, due to lack of proper experiencing with the *regular programme*. If a technical faculty member *never studied* a technical or engineering programme up to *UG that effectively insisted on following ‘nationally and internationally’ good text book*, the practical experiences show how difficult it is to bring the necessary professional transformation without the induction of deviant nature. If a technical faculty member follows the ‘**nationally and internationally**’ good text book and *follows the tactical ways of not encouraging* the enrolled to follow such text book *for the trivial and self-protective reason*, such a practice only remains in the syllabus book. If sincere efforts are being put by an institution, to develop the practices of following the ‘**nationally and internationally**’ good textbook, the efforts of various resources may poise at hindering such initiative by directly or indirectly influencing the enrolled. **Just like the use of CAD became a continuously common instruction practice for ‘engineering drawing and graphics’ courses in the nation, starting from 2011, why cannot the continuous practice of effectively recommending ‘nationally and internationally’ good textbook become so common?** Unless such a system is implemented, the PG programmes cannot stand up to the deserving standards of the nation - **until such a practice becomes common, is it good if the faculty members**

*above the designation of Assistant Professor, teach only suitable non-elective UG courses in terms of quality, quantity, and communication up to the 'Vision and Mission'?* Few institutions have *already started* and the others may fall behind – need verification? – may choose to degrade – following '**nationally and internationally**' good text book **is not sufficient** – *essential to effectively recommend and encourage the enrolled within the limits of influence – to face the negative campaigning*. Realizing the exclusive strength is essential to gain the confidence and give up the direct/indirect unethical propagation that targets the sustainable improvement. Implementing suitable initiative by ethical means in the context of the teaching profession may be possible by *concatenating* and uploading the certificates of **X standard, +2 (intermediate) education**, UG education - *regular/ part-time/ three-year/ four-year* programme, **study-institution**, acceptance rate, along with the affiliating university, similar details of post graduate education, Ph.D. programme, etc. along with the profile clearly outlining the above details, C.V./ resume of the respective faculty member, and the **clear proofs** of the accumulated in-service credentials of faculty in a *highly and publicly visible form* with the proper surveillance, and clear instructions to the enrolled and the prospective beneficiaries to view those details in order to enable the correct choice of the admitting institution. UG degree from a reputed university (*especially with the lack of information* on the 'institute of study', affiliated to the university and the *acceptance rate*), may not give effective conclusions. In the same way, a higher percentage of marks in a UG programme (even though affiliated to a good university), may not speak of any effective conclusion. By looking at the aforesaid proofs of aforesaid credentials, even a guided-layman may figure out the resourcefulness of an engineering academician, with the basic knowledge of the similar profiles. At this juncture it is good to note that the evaluation authority (like the Board of Secondary Education, the Board of Intermediate Education, University, etc.) of the same educational programme/ qualification (*nature of the programme* may be important, as stated above), does not award the percentage of marks, as per the unique standard, over the given time-frame/s, **even though the evaluation system is absolute** (*not relative grading*). If answer to a question were the same *in essence and as expected* in comparison with a former time frame and a later time-frame, the percentage of award of marks appears entirely different, in general eg. an evaluation system awarded 70% to the former time-frame and 95% to the later time-frame. **Massive evaluation** is one of the reasons and the recent practice of making the teacher 'responsible to the pass percentage' is another reason. *It is worthwhile to obtain clarity from the right authorities (not name sake) and add the information by a clearly visible link on the same website*. Imparting knowledge is important and the abilities are more important for an engineering academician and therefore cannot afford to distract by the 'tactical and massive practices'. The aforesaid documents in conjunction with the other career related documents as specific to the employee, with full details as stated above may be conclusive. Both NBA (for every department) and NAAC accreditation are very important in conjunction with the above information, while choosing an engineering college for admission

Suggested the following: Work that realistically represents the designation, never poised at deceiving the audience? need to withstand the apparently-smooth words of intolerance that target the waste of time – consequence of retention and basic behavioral problems?

**Caution:** managing the time tables to look better in the view of layman/ ignorant; inferior attitude to the extent that is publicly visible; no teaching is as good as following tactically inferior and substandard methods that mislead the audience in the name of free choice by the direct/ indirect indication to follow ‘*junk text books*’ by the policy backup of the ‘lesson plan’/‘WIT/ WIL’, to ***tactically follow the methods that effectively lead to the ‘lack of attention’ in the audience***, pretention of being engaged, by opting to teach the courses of ‘low enrolment’, protective fear approach being in an administrative or a senior position that clearly (appears morbid) and significantly hurts the improvement of the institution (may not be realized during the service; degrading the standards by resorting to unethical favors and *expecting favors in return*; personal interests versus professional interests; personal interests in the name of professional interests; *what do a person conglomerate by the time of retirement from the teaching profession and by what sources?*; assumption that nobody monitors in the name of ‘positivity/ negativity’), ‘pretention/ hiding’ in the name of assigned duties, preoccupation of the institute’s time (including all the institute-work-days and lunch/break time; covert discussions) by the inferior objectives of unethical or excessive earning, the propagation of literal-dirt, and the other means to tactically mislead the audience; eg., ***a minute’s time spent to discuss the methods of unethical or excessive earning during the institute’s time can lead to the total inferior work performance*** in the participants due to preoccupation and therefore would resort to ‘**inferior tendency**’ for survival – as the result, every proactive and helpful initiative looks like a barrier and therefore appears to be the cause of somebody - eg. work hours – unnecessary apprehensions may continue to self-hurt the health; furthermore, such a distraction fosters knowingly/ unknowingly, the ‘inherent tendency for treachery’ that may not be sensed; to gain motivation for such unethical things by the acts of unethical amass and the other unethical means like hearsay – incompatibility/ suitability; contribution to total ineffectiveness in the possible extents of the influence in the name of favors, as it takes sufficient time to realize due to the aforesaid inferior behavior; unethical amass versus association for ethics; black mail tendency in the shelter of unethical means (abnormal if it lasts forever) versus literal-dirt propagation; Positivity/ Negativity versus Sufficient Precaution; realization versus tactically adamant nature making use of the inertness and generosity for the assumptive reason of ‘viable alternatives’; literal-dirt to the extent that is publicly visible – may not be sensed by the like-minded people; protective fear approach of the administrative/ senior positions especially in the case of inferior (appear to look extremely well) credentials due to receiving the employment adaptation, especially beyond the capacity (evident from the qualifications – an able academician can detect – qualifications from the **8<sup>th</sup> standard**) due to the prevailing personal (and clearly nonprofessional) pressures, may be attributed to the lack of ‘originality and ethical dedication’ and the sources of potential conflict of interest may use the situation to severely hurt, due to the ‘lack of continuous monitoring’ and ignorance for the sake of generosity/ courtesy/ retention – **pretention has become an**

**ongoing practice** to reap the undue favors – to give a fair opportunity to the ‘beneficiaries and decision makers’ to realize through ‘ethical transparency’ is one of the solutions – **to observe the rationale for ‘allocation/ non-allocation’**; means to provoke the sources that lack maturity of thought, in the human resource intensive organizations – floating and innocent sources; manipulative influencing versus the improvement of skills

**A question hit me point blank.** The members of faculty of several institutions get paid proportionately with the members of faculty of the Indian Institute of Technology (IITs/IISc) and why the average achievements of members of faculty of the former are not even 10% of the average achievements of the members of faculty of the later in terms of quality, quality, communication, and dedication? The education field looks very simple as well as complex such that for every thought provoking question, there is an easy answer that appears to look right. For example, the popular answer to the previous question is that the students of the IITs are better as compared to the other institutions. However, if that is the only reason, then the members of faculty should have at least 70% of the achievements of the members of faculty of IITs and it is not the case. The next point that strikes the mind is that the educational achievements of the most of the members of faculty of IITs, prior to the employment are superior **and every one can find answer to the question at the same point.** If the educational background of a member of faculty is not up to the mark, one of the mechanisms to proactively overcome such deficiency is to follow ‘**nationally and internationally**’ good text book for each and every teaching-subject, **announce the same in the class fairly at the beginning of the respective semester and be supportive to the enrolled in overcoming the inherent difficulty**, get advice to try the ‘faculty initiatives’ suggested by the regulatory authority even if it consumes good amount of time initially, and work sufficiently beyond the normal work-hours at least for 10 years from the beginning of the service or at least until overcoming the deficiency. Such practices may be easily implemented by any individual member of faculty. **Such competent practices along with the attitude may transform the nation into a sustainable super power**

Location of usually **4 – 6 domain (specialization) subjects in every undergraduate program** of engineering specialization is essential, to gain the fundamental knowledge that in turn helps to understand the further subjects (courses) that are part of the later semesters and subsequently helps to fare well in the early days of the career. The concerned do not usually get a chance to realize on time. In other words, if a junior or senior of a UG program or early professionals (working people) realize, it is almost impossible to make up for the deficiency because the spent time can never be made available. It is **not sufficient to merely pass** in such subjects and every student may aim at attaining maximum knowledge by sincere efforts. One of the reasons that the enrolled do not have a chance to realize this on time is that the technical education system has not yet imposed the prerequisite system that takes care of such problem. The international universities in the developed countries follow individual course specific prerequisites and therefore such a problem does not arise. However, the medical colleges of the nation follow a prerequisite system that is feasible in the technical education as well. The

medical colleges give a clear instruction to the enrolled, at the time of admission, that passing few essential courses like anatomy (similar to the **domain specific fundamental courses in engineering**) is the prerequisite to get promoted to the next semester. Therefore the medical students observe the importance of such courses at the time of admission itself and spend good amount of time to excel in their careers of choice. **It is good to note from the practical implementation point of view that the ‘deviant resources’ do not have any possibility to mislead the enrolled, because the importance of prerequisite courses appears in writing.** It is good to note that few aware people instruct the enrolled of trustworthy conduct so that they gain a fair chance to excel in UG as well as the career. It is also good to note that only the senior members of faculty teach such subjects as the practice in the medical colleges. Also, to note that such senior faculty members in good medical colleges are not undermined and defamed to the possible extent, through the wrongful projection of organizational charts, in the name of administration to result in the lack of awareness among the enrolled. *Until such a system is customized to technical education, is it good if the institutions follow their strategies to effectively implement, in order to hone the enrolled as the eminent resources of tomorrow?* **Just like the use of CAD became a continuously common instruction practice for ‘engineering drawing and graphics’ in the nation, starting from 2011, why cannot the practice of effectively intimating the importance of the domain specific fundamental subjects be inculcated, apart from effectively recommending ‘nationally and internationally’ good textbook to the curricular courses? Until such a practice becomes widely common, is it good if the faculty members above the designation of Assistant Professor, teach only suitable non-elective UG courses in terms of quality, quantity, and communication, up to the ‘Vision and Mission’ of the institution?** The problem relevant to the aforesaid is so severe that the employment organizations are forced to test for the pre-requisites to the domain specific fundamental subjects mentioned. Testing the job aspirants merely by the aforesaid procedure further confuses the enrolled in identifying the domain specific fundamental subjects. **For example such fundamental subjects in the mechanical engineering specialization** are Engineering Mechanics – Statics and Dynamics, Mechanics of Solids (or Strength of Materials/ Mechanics of Materials), Metallurgy, Fluid Mechanics, Thermodynamics, Kinematics of Machinery, and Production Technology (or Production Engineering/ Manufacturing Technology/ Manufacturing Science). An example of Civil Engineering: Engineering Mechanics, Mechanics of Solids (Strength of Materials/ Mechanics of Materials), Fluid Mechanics, Structural Analysis, Building Drawing, Construction Materials, etc. An example of software and connecting branches of study: Introduction to Programming (like C), Data Structures, Advanced Data Structures (data Structures – II), Discrete Mathematics, Computer Organization, Computer Architecture, and Operating Systems. To elaborate, good knowledge in Computer Organization and Computer Architecture may help the Computer Science and Engineering graduates to custom develop a computer that is sufficient to interface a specific machine, instead of superfluously connecting a commercially available computer like a personal computer. Such practices help in mass production by cutting the costs and withstanding international pressures. In the same way,

the fluency in such courses puts the graduate at the helm of the engineering domain. The lists given here are essential courses in which good efforts and knowledge are necessary to gain the domain specific knowledge through other curricular courses in the named specializations. In other words, this list cannot be interpreted that the other courses are insignificant; eg. an UG student makes a good head-start by understanding CAD, IT workshop, assembly/dis-assembly of parts of a motor, automobiles, home appliances, computer, etc., to gain practical skills that are necessary to start an engineering career

Members of faculty and administrative authorities receive comfortable salaries and expect the employment institute to meet the expenses of conference papers, etc. The members of faculty may apply and fetch sponsored research projects (SRP) and other grants from national funding agencies to meet the research costs and the aforesaid expenses if such dissemination is significant. If a member of faculty is unable to fetch SRP, it is better to accept the lapse and meet such costs from the salary. In this context it is good to note that such measures are necessary if the prevailing salaries are at par with that of the international practices. It is reasonable to elaborate on the malpractices going on in the shelter of patents. It is reasonable to meet the expenses initially from the salary and apply for the reimbursement after the award of the patent/s and the competently successful commercialization, for the benefit of the institution and nation. It is not fair to spend the governments'/employment institute's money and abruptly criticize the members of faculty and other human resources who handle good number of courses and UG (*molding the early human resources* with suitable national **and** international quality is essential) courses that involve more work, qualitatively and quantitatively. If a member of faculty *in effect* does nothing else other than teaching courses and administering, there are mechanisms like 360° feedback to improve the performance on time and prompt such a faculty member to follow all the measures and mechanisms suggested by the regulatory authorities, to improve the efficiency. It is necessary to avoid confusion on the point that the institutes may enjoy free will to formulate the policies in this regard, **to effectively enhance the performance**. However the members of faculty may come forward to decide on not availing the reimbursements like in the case of the general public who came forward to waive their right to receive subsidies on cooking-gas supplies, run by the government. Later, the policy was designed with 'income restrictions' by following the general trend of the public. **The annual appraisals of the teachers may include the information on the reimbursements received and may be made available on the institute's website**

Every professor of engineering colleges may be associated with an exclusive and unique laboratory (academic and/or research) and facilitation of the space will prompt such a faculty member to continue to initiate and add equipment by fetching sponsored research projects (SRP) from the national funding agencies (NFA), industry, etc. If a member of faculty with a different designation fetches SRP, the laboratory space allocated for the execution of the project may effectively continue with the supervision of the same person until the person retires/ leaves the institution and such an arrangement paves way to continuously improve the laboratory by various *ethical* ways and means. **This is an**

**essential mechanism to follow if an institute wants to let the enrolled grow in to trustworthy professionals so that they become the representative alumni to reflect in the national and international image of the institution.** On the contrary, the movements to grab the ‘SRP connected facilities’ and get rid of the principal investigator (member of faculty who initiates and develops *eternal* facilities through SRP over a time-frame) and/or unethically provoke the human resources with the possible conflict of interest, to avoid the barriers, only tells the immature approach of encroachment **and may not result in anything useful.** Protecting such unethical move for personal interests is a menace to professional education. Complete reliance on the salaried people is not the only mechanism to retain useful human resources of the institution, at all the places. Every employment institution may have its own ethical, attractive, and effective methods of retaining the talented members of faculty to ensure the sustainable institutional growth

Explanation of the existing demerits in the implementation of a teaching initiative called WIT/WIL (what am I teaching/ what am I learning; why am I teaching/ why am I learning) and HIT/HIL (how am I teaching/ how am I learning); there is no point in including the downloads of information from the internet and text books in the write up of WIT/WIL report; a mention of the detailed reference of the internet source/ text book material taught in the class with reference to the curricular contents is enough to include in the write up; in every class, academician talks for at least 10-15 minutes about the curricular contents in a new direction and it is sufficient to include such discussions in the write up of about 500-1000 words; essential to overcome the plagiarism in order to ensure the exclusivity

One of the ways of enforcing useful reforms in engineering colleges is to provide the necessary awareness to the important stake-holders. The next step is to help to gain access to the necessary resources like good quality human resources, time, and equipment. The policies of the regulatory authorities may healthily bring the institutes out of confusion and may result in good institutional practices. The regulatory authorities may put sincere efforts to hire competent, genuine, devoted, successful, and aware professionals as the members of the committees. The regulatory authorities may follow the existing mechanisms and/or devise new mechanisms to produce, access, and hire such human resources for the committees. The policies of the regulatory authorities and committees may give less manipulative flexibility to the members of the committees

**There is an immediate requirement to implement the practical mechanisms to improve the competencies of the teachers and enrolled of engineering and other professional courses of the nation, at par with the international standards.** The discussion of this point includes working alternatives to effectively enforce such mechanisms. What is the relevance between the sufficiency of the ‘representative value addition’ received by the enrolled as compared to the time, effort, and money spent up to the end of UG programme? Can the **exclusivity** through effectively encouraging the enrolled to follow ‘**nationally and internationally**’ **good text book** provide the reliable solution? *Is it possible that such a practice may develop in to a widely accepted and transparent*

practice similar to the continuous practice of instructing the ‘engineering drawing and graphics’ courses through CAD software, from 2011? **Until such a practice becomes common, is it good if the faculty members above the designation of Assistant Professor, teach only suitable non-elective UG courses in terms of quality, quantity, and communication up to the ‘Vision and Mission’?** A directive that is applicable to the professional colleges, that effectively insists charging only a designated fee from the enrolled, so that the earnings due to fee may be limited to meeting the additional student support mechanisms like running of learning assistance centers and may not be used for the purchase of equipment and meeting the costs of salaries, may prove to be effective. The mechanisms of fetching the industrial and government sponsored projects including the funds for the establishment of basic laboratory equipment/ modernization of laboratories/ research level laboratory equipment, consultancies, activity for the college and faculty owned profit centers (**industrial businesses at par with the standards of ‘Vision and Mission’ of the educational programme**), commercialization of intellectual property rights and copy rights, etc. may help to meet the purchases, salaries of the faculty members and other staff, house-keeping activities, electric bills, water bills, etc. The mechanisms of effectively recording 360° feedback on daily basis, may certainly improve the quality of teaching and learning. Such mechanisms may improve the real life and professional experiences of the faculty members and the other technical staff and help in attributing the enrolled with the skills and abilities that are at par with the national and international quality. Such mechanisms may also improve the practice of hiring students and graduates in the profit centers and the laboratories. That way the enrolled and apprentice holders can gain tremendous amount of practical experience in terms of quality, quantity, and communication. **This alternative is much better than the less-known ‘cultural revolution’ (shutting of schools/colleges/universities and asking the prevailing students to work in the farms/ industry/ government/ military) put forward effectively by China during 1965-1975, which acted as a catalyst in transforming to a super power.** The mechanisms of discussion in this point alleviate the serious drawback of the national students, not experiencing sufficient industrial environment due to the social scenario, leading to the lack of work experience that supposedly helps to understand the college and university curriculum of good quality. Modification of the minimum duration of academic programmes and the minimum requirement of academic credits, for the award of academic degrees may help to accommodate the changes including placement of emphasis on attendance. For example, universities of few developed nations successfully run the academic programmes in a semester system, by limiting the minimum requirement of academic credits for the award of UG programmes, to one hundred and forty and this number is about 30% less than the comparative credit requirements of the domestic universities. **Unless there is a proper and transparent policy backup from the regulatory authorities, it is very difficult to bring change**

The word organizations need national representatives with broader vision

The development that has been prevailing up to date has been raising problems in the national economy due to the deviatory trends. Some of such problems contributed to the

incredible increase in the cost of agriculture, cost of living, cost of education, cost of medical services, cost of construction/ accommodation, excessive parity in the standards of living. One of the most affected sectors is agriculture. The affect may be attributed to the serious deficiency in demand versus supply of the human resources in the fields like agriculture and precision capital goods. The early professionals may be subject to 'mislead of short-cuts' and thereby happen to be attracted to the deviatory trends that waste resourceful time. It is good to realize that the most successful professionals excel in their field by the determined, reliable, and trustworthy efforts that never resort to misleading short-cuts. There is no single instance to mention that a professional proved to be successful in the life time, by such short-cuts. Following the ethical practices is one of the ways of not subjecting oneself to such misleads. It is good to realize that the starting pay is not the sole criterion. The career that gives ample opportunity to grow in to an all-round personality never starts with a lucrative salary. In addition, the people depending on the disorganized sectors need consistent ways to enhance the income in order to meet the expenses to raise the family. For example, in the past, farmers used to find the ways of consistently improving the income as per the needs of the family; eg. raising the cattle, developing compost for the agriculture field. In the present era, such a consistent development may be made feasible, by the recognition of agriculture as a suitable tiny industry. Such an initiative may give the confidence, motivation, and enthusiasm to people present in such a sector to consistently improve by following the reliable means of work to meet the sufficiency. It is good to realize that the agriculture sector has different work schedule and practice that depends on the monsoon/ type of the crop/ length of the crop, and therefore may require the customization of the industrial policy. The cost, schedule, and performance play prominent role in framing such policies. It is one of the ways to meet the needs of the farmers by engaging them with the required and deserved enthusiasm to meet the sufficiency in the wake of the recent developments. Such developments may bring the required balance in the cost of agricultural investment and the cost of agricultural products, in order to compete with the markets and ensure stability in the rural economy. Such initiatives may improve the productivity of the farmers and enable them with the activities like rising the cattle and therefore rationalize the use of the inorganic fertilizers/ pesticides, prevent the disturbing degradation of the soil, prevent the degradation of the underground water resources, prevent the degradation of public health, etc. due to the sufficient use of organic manures and pesticides (bye-products of cattle; cow-urine has got the characteristics to rejuvenate the soil and considerably improves healthy farming and therefore the public health; meeting the sufficiency of agricultural production with such measures alone is yet a question). In some of the developed nations, a person who owns 10 numbers of cattle export dairy-products and is economically doing as good as an experienced and successful engineer. The domestic industry did not withstand the international competition in the fields of food processing, consumer goods and kitchen supplies, furniture, textiles, household appliances, home needs, and low technology sectors, primarily due to the cost efficiency, size of the market, and lack of availability of suitable human resources. Therefore, sufficient measures are required to retain the competency in agriculture sector, in the wake of the trend, even though have

been extremely good, over the past 6000 years. Suitable measures are essential to uplift the sector and protect the interests of the good amount of population, with sufficient precaution. Forecast of the inherent problems in announcing a policy may help the sustainability by attracting only contributing investments. The international automobile manufacturers have established their facilities in the nation. It is good to go further to realize that such businesses cater primarily to the domestic market and considerably increased the cost of transportation and all-round living expenses stated in this point, because the citizens used to healthily depend upon the public transportation like the healthy practice that prevails **in the developed country, Singapore**. Furthermore, such a measure has considerably decreased the value of the currency due to the increase in crude oil and components/ spares import in order to meet the requirements of the individual vehicles. It is good to encourage the business that focuses on (1) competently exporting in result (*exports>>imports*) and (2) meeting the sufficiency requirements of the domestic needs, in order to ensure the strong currency. It is much better if we can hone the domestic industry to significantly improve the export potential as mentioned. **The improvement in the supply of suitable human resources may further help - until such a practice reaches the sufficiency, is it good if the faculty members above the designation of Assistant Professor, teach only suitable non-elective UG courses in terms of quality, quantity, and communication up to the 'Vision and Mission'?** Some of the practices that prevail in few developed nations that are vast in area and very low in population (very low population-density) do not apply to the nation, and it is essential to know such parity, and act efficiently according to the global situation and development. The troublesome situation exists primarily because of the need to accommodate the compensatory initiatives in a traditional and conservative economy. Trustworthy and challenging measures that improve the enthusiasm in the rural economy by preventing the pollution may result in rational standard of living, rational distribution of the population, ecological balance, and sufficiency. Such initiatives may prevent the deviatory trends of the development and bring happiness in the rural economy and ensure the fruits of reforms to the citizens and reliable patriots. *Integrity and sustainability* are important for a strong nation. Can we afford to sacrifice the all-round mightiness for want of chips, soft drinks, and modern attire? Chips and soft drinks are more common in the parts of the world where people use very less amount of salt in their regular diet. At those places, the sodium obtained though the mentioned sources contributes to balance the diet. If the simple question is 'how to address the problem?' it is good to note that the nation has been a scapegoat for the past thousands of years due to the practices at times. Citing few mighty people of the history is not sufficient and 'planning – implementation' for sustainable development is important. A healthy and revolutionary change that takes into account, all the **sustainable development of the ancient past, the present challenges, and serves to be person-independent** to the possible extent may improve the domestic situation. In this matter, there is a need to learn a lot from the developed nations. The developed nations invite immigrants only in the fields that there is indigenous scarcity and extreme demand for the human resources. Even though such nations have been implementing feasible practices at the individual level for over the past 100 years, it

appears like we need time to implement such measures at the national level, considering the development phase. It is imperative to understand that the human resources who reside in the nation contribute a lot to the national economy irrespective of the earning potential because, apart from the direct and indirect taxes paid by the individual, sustainable revenue and activity due to the spending potential of the individual, taxes paid by the employer, revenue – profits - local spending – development potential of the employer, the domestic contribution to the competitive cost of living – infrastructure – communication facilities of the nation, and contribution to the national productivity and technical – business innovations, such human resources strengthen the sovereignty of the nation and assure moral support to the military, work force, administrators, and leaders. The initiative of ‘MAKE IN INDIA’ is one of such competent measures and the response to it emphasizes the need to improve the ‘know-how’ indigenously. It is good to note that there is not even a single cellular/ mobile phone manufacturing company of the national origin in the nation even though the domestic market is vast. To observe that when the players of a nation try to purchase a high technology company of certain aborigine, the top administrators and leaders of such an aborigine-nation would interfere and stop the sale. However such a practice did not occur in the case of the sale of ‘FLIPKART’. Such a move might have considerably improved the encouraging potential of the domestic industry. This instance is an example of the concerns discussed. It is imperative to understand that the developed nations are with the effective perception that the **healthy-retention (not by measures in the name of bail-out; improving the competency through professional excellence is essential)** of a domestic company contributes heavily to the national economy **whereas the money obtained by the sale of such a company turns-out highly-volatile**. Generation of employment and revenue is not the sole criterion whereas the employments in the environmentally good industry, industry with the excellent resultant export potential, industry that competently meets the sufficiency requirements of the citizens that do not pose conflict of interest with the domestic industry is important. *Development of the indigenous world class colleges within the nation* that have the ability to refine the next generation of trustworthy administrators, leaders, entrepreneurs and technopreneurs, at the national and global level and to imbibe them the ability to withstand the ‘substandard practices and the greedy’, may be one of the remedial steps to improve the domestic situation. *One of the possibilities is to sufficiently improve the existing institutions to the deserved extent*. Mechanism to withstand from being targeted is essential

In the **ancient** society, by the free will, the citizens themselves classified the population into castes depending on the family trades and businesses that they skillfully ran at ease, and felt mutual respect for the dignity of labor. The **modern education system** erased such barriers in molding the human resources. It is necessary to revive the **ancient wisdom** beyond the caste-system for professional matters, adapt the tolerance, ensure the strength of the nation, and realize that it is the important requirement of the era

It is not possible for every government to bring tight laws in all the required aspects due to the informal/ logical restraint of maximum reforms within the tenure, considering the

conventional mindset of the citizens, the natural public restraint to a social change, and the obligations that may come in the way even in the case of convincing and rationally good law or act at the time. The people seeking citizenship in a country need to have faith and loyalty towards the concerned government. Such people and clean citizens will never have adversity towards the government. However it is always possible to get misled and therefore caution is essential. When a government is doing something rationally good at the time, the citizens including ex-governments may suitably encourage such act/s for the sustenance of the society and the **young nation that was reborn amidst of several opposing forces only few decades ago**, after 900 years of the foreign rule. It is necessary to understand that a government can do something good to the citizens only if it can retain and sustain power, to ensure the deserving social justice

Policy decisions that safeguard the interests of the domestic industry with proper precaution are essential. Few mechanisms of selling the stake even in low quantity, in low-risk companies may be carefully reviewed by the authority, in order to protect the health of the industry. Such surveillance may help in the optimal use of the domestic resources including transparent investments, prevents the passion of maintaining the national/ international rankings at the expense of the business/ professional/ industrial interests, and eradicates manipulation. Business innovation with calculated and affordable risk may be a constant and practicable phenomenon for the domestic companies to be able to last longer (hundreds of years of existence like TATA, KCP, Saint Gobain, Corning, Ford, General Electric, etc.) instead of limiting the branded business to one or two generations. Strengthening the domestic education system with financial/ behavioral discipline, ethical/ traditional/ contemporary values, mechanism to withstand from being targeted, and demonstrating the benefits of using domestic goods and products is one of the mechanisms to implement reforms. Improving the cost competitiveness and profitability with sustainable innovation and sufficient contribution to GDP by the sufficient direct/ indirect employment of human resources is more important. Contributing to the improvements in the competency of the domestic businesses may help to convince the people with the relevant products.

The domestic Banks and Financial Institutions have to find the ways and means of improving the systemic abilities to create capital cash reserve/s by attracting micro cash deposits from the tax payers in order to effectively increase lending to the competent industrial businesses that considerably improve the national GDP, cater to the domestic market, and improve sustainable net export potential that targets the 'improvement of the economy and strengthening of the currency'. Universities and colleges may have a cell that employs the volunteering (to work part-time on zero pay basis) and highly qualified professionals **with character** who are capable of giving the valuable inputs to the aspiring students/ citizens, and mentor them about the industrial businesses that have hidden but good domestic and international markets and the investment opportunities in initiating such businesses. A mechanism of publishing the e-content and printing such recommendations may serve the effective implementation. Every college and university may open up a cell that mentors in this regard. Industrial Training Institutes may be strengthened and expanded to train the human resources in the new avenues of the present discussion. Such an initiative may poise at

one of the improvement aspects as upgrading the nation from commodity exporter to an exclusive and net ‘healthy and finished products’ exporter

At any point of time during the high school education, no student may be compelled to study more than one curricular subject (course) on languages irrespective of the medium of instruction in order to establish an effective and nationally/ internationally competent curriculum. However, there may be a choice of opting for one spoken domestic-language course as a non-curricular (like co-curricular or extra-curricular) course. The English translation of technical words/ terms of high school sciences and mathematics subjects (courses) may be introduced in the text books, irrespective of the medium of Instruction.

The nations which do not have a reasonable threat from the neighboring nation have grown to be super powers with sustainable development. Therefore it is imperative to effectively deal with the neighboring nations and the competency of the leaders and administrators come in to utmost importance. Health, fitness, less dependence on the medicines, and character are some of the possible features that influence the efficiency. One year of compulsory military training for at least the graduate men is essential to develop a competent defensive restraint for the nation and also to develop the physique and health of the citizens. In addition to attracting the volunteering patriots, the training and the associated activities should sufficiently enhance the patriotism, passion for the nation, and the realities of life no matter where they ‘choose to work’. eg. there is a similar compulsion in South Korea and the country has been doing well in terms of building the knowledge and developed society

An important thing to note, the nation is importing low technology and better precision products at a *lower cost* than that of the domestic products, from the neighboring nation that is comparatively better in terms of economy and military. If comparatively a developed nation can produce at a lower price, why are we not succeeding? Such a phenomenon is hampering the national GDP and weakening the currency. This is the direct consequence of not developing the Industrial Training Institutes (ITIs) and other institutes that provide effective training in the manufacturing sectors at par with the modern standards and the growing population. The demand, domestic pay potential, and incentives for such disciplines may be effectively advocated by the government, industry, university, colleges, and high schools so that such practices effectively attract the citizens

Elaboration of the above points connected with the professional experiences intends to vivify the nationally and internationally confusing matters and in order to avoid the further confusion through clear discussions. Knowing the essentials is important in implementing the next stage and process. If the concerned obtains the right awareness on time, the writing results in success

### **3.2 CCA/ ECA Organized:** *Without financial burden on the employment institution*

**Result:** (1) Started the **continuous** practice of instructing engineering drawing, engineering graphics, and relevant courses for all branches of study from 2011 – date, **using CAD**; to the knowledge, it is the first time in the nation and later, it became the common practice (2) Ways to improve employability through curricular improvements (3)

Faculty, started following standard textbooks (4) Faculty and enrolled started to get the complement-help from several NPTEL courses that were added from 2014

Purpose of Engineering Drawing and Graphics using CAD – engineering drawing and graphics using CAD: (1) *Basic career essential* and *pre-requisite* for understanding CAD software – as appropriate to core engineering specializations of UG and (2) Spending time with CAD software in the first year imbibes the *practical knowledge* of various software concepts that are relevant for other engineering specializations of UG

Reminder: The effective method of encouragement to sufficiently follow ‘**nationally and internationally**’ good text book still needs further implementation

- Quality Placement Essentials for Engineers; AY 2020-continues; coordinator and instructor, MED
- Solid Mechanics and Practical Problems in Mechanics of Solids; AY 2014-2015; coordinator and instructor; MED
- Analysis of Engineering Problems; AY 2014-continues; coordinator and instructor; MED
- Utilities in Creo; December 18 2013; coordinator and instructor; venue: AED
- Construction used in Various Parts of the World and Relevance to the Topics of Engineering Analysis; AY 2013-Continues; coordinator and instructor, MED
- CAD Review; 12 hrs; August 07-23 2013; coordinator and instructor, MED
- Assistance to the sale of prescribed textbooks on the campus, as per the versions, namely, R11 and R12 of the autonomous curriculum, Mechanical and Automobile Engineering (MAE); August 01-09 2013
- MOU, brochure (drafts) and a feasibility report on the Post Graduate (PG) program planned; AY 2008-2010
- PG program brochures, for AY 2009-2010, 2010-2011 and 2011-2012
- Introduction to 3D Finite Element Modeling using MDT; 08 hrs; April 22-25 2004; coordinator and instructor; MPED
- CAD/ CAM/ CAE; 04 hrs; February 25 2004; coordinator; Mechanical and Production Engineering Department (MPED)
- On presenting papers at the national conventions held by reputed societies
- CAD; 08 hrs; October 29 2002; coordinator and one of the instructors (02 hours as the instructor), MPED
- Curriculum, co-curriculum, and extra-curriculum, as a means of achieving the educational objectives
- Choosing the best textbook in order to achieve the course objectives and as a means of gaining comprehensive education
- Reading of **nationally and internationally** good textbooks, in order to meet technical expectations of the enrolled and the education program

- Effective improvements in the curricula, ensuring assimilating of skills, and improving abilities
- Significance of preparation to receive a lecture for effective learning, and enhancement of skills and abilities
- Allocation of office hours to enhance the skills and abilities of the needy and enrolled
- Influence of breathing, relaxation, and physical exercises on ethical learning, retaining, and practice
- Effective performance methods for the benefit of the people, organizations, economy, nation, and the world
- Learning methods in order to ensure course and program objectives and to transform into a successful person
- Effective means for withstanding the distractive elements and remaining as an effective contributor in the profession
- Submission of NBA application of the department in AY 2010-2011, and the necessary preparation
- Gnat Chart for versatile applications, and effectively scheduling the tasks and resources for an endeavor
- Group technology and the effects versus involuntary/ ambiguous/ unknown/ discrete destruction
- Means of creating an interest and the necessary action required to achieve it, in the national and global scenario
- Interests, integrity, stance, and unity in no uniformity; benefits of refinement over interests and the applicable near term goals; tolerance versus personal gain
- Campus atmosphere and everlasting practices for the stability; need to face the day today challenges
- Choice as per the strengths, interests, conservativeness, aggressiveness, and need in the wake of global changes; ability to withstand
- Comprehensive reports on industrial visits of academia in order to ensure and comprehend the purpose of engineering
- Feasible methods and preparation for leading to academic excellence, and reviving the lives
- Class work and reviews, and participation in the effective events, industrial visits and development; requirements for allocation
- Several sponsored research projects and a number of industry projects, over a large realm and methodology

- Several state of the art facilities and intellectual resources, up to the maximum extent that the human resources and the institute can assimilate, without financial burden, intended to revive education and ethical practices
- Global ‘phenomena and transformation’ and its relevance to the need for education and development
- Importance of the students, improving the abilities of absorbing certain basics/ fundamentals pertaining to the chosen field of academic specialization that fosters the continuous learning as long as alive and imbibe the abilities to quickly verify and utilize the available multipurpose intelligence
- Achieving excellence in skills and abilities in the medium of instruction apart from gaining the depth of knowledge and continuously improving the technical and general abilities for ensuring effectiveness in the job
- Skills, abilities, and other necessities needed in order to enable and support an ethical, stable, healthy, and happy world

### **3.3 CCA/ ECA Attended:** Events

### **3.4 Counseling and Mentoring Activity:** Mentioned

**3.5 Committees Involved in:** Member, Board of Studies, Regulations R12 and R13, UG and PG (2012-2013), Chairman, Board of Studies, Regulation R11, UG and PG (2011-2012), Head of the Department (HoD), MAE; 12.2010 – 08.2011, Member, disciplinary committee (2010), Member, academic projects committee (2010), Member, project review committee (2009-2011; 2018-), Member, academic council (2009), Member, research committee (2009-2011; 2018-), Member, curriculum preparation committee (2009), Editor, for two editions of knowledge asset (institute; 05/2009-03/2011)

## **4. Conference / Workshop / Seminar / Guest Lectures:**

### **4.1 Conducted:** *Without financial burden on the employment institution*

**Result:** Started the **continuous** practice of instructing engineering drawing, engineering graphics, and relevant courses for all branches of study from 2011 – date, **using CAD**; to the knowledge, it is the first time in the nation and later, it became the common practice in the nation

Purpose: (1) *Basic career essential* and **pre-requisite** for understanding CAD software – as appropriate to core engineering specializations of UG and (2) Spending time with CAD software in the first year imbibes the *practical knowledge* of various software concepts that are relevant for other engineering specializations of UG

- Machine Drawing using AutoCAD; 24 hrs; September 04-October 31 2014; coordinator and instructor; MED
- Machine Drawing using AutoCAD; 24 hrs; August 03-18 2012; coordinator and instructor; MAE
- CAD/ CAE; 96 hrs; June 20-July 02 2011; coordinator and one of the instructors (66 hrs as the instructor); MED

- Process Plan for Machining Jobs; 24 hrs; June 27-July 02 2011; MAE
- Computational Fluid Dynamics; 24 hrs; June 09-11 2011; MAE
- Finite Element Analysis using ANSYS; 24 hrs; June 02-04 2011; coordinator and one of the instructors (24 hours as an instructor); MAE
- Refresher Course in Mechanical Engineering; 54 hrs; May 02-June 01 2011; coordinator and one of the instructors (11 hrs as the instructor); MED
- Use of AutoCAD for Teaching Engineering Courses (04 modules); 58 hrs; April 11-August 25 2011; coordinator and one of the instructors (58 hrs as an instructor); MAE
- Refresher Course in Mechanical Engineering; 39 hrs; January 20-March 31 2011; coordinator and one of the instructors (12 hrs as the instructor); MED
- Machine Drawing using AutoCAD; 30 hrs; January 10-March 21 2011; coordinator and instructor; MAE
- CAD/ CAE 48 hrs; November 30-December 05 2010; coordinator and instructor; MAE
- Computer Aided Drafting using AutoCAD; 24 hrs; September 20-October 15 2010; coordinator and instructor; MAE
- CAD/ CAE, 40 hrs; November 23-27 2009; coordinator and instructor; MED
- Computer Aided 3D Modeling and Finite Element Analysis using MDT 6.0; 48 hrs; May 30-June 04 2005; coordinator and instructor; MPED
- Computer Aided Drafting using AutoCAD; 40 hrs; October 27-November 01 2003; coordinator and instructor; MPED

**4.2 Attended:** *Without financial burden on the employment institution*

- ECMFD; MN NIT-A, July 7-19 2008
- QSI:DA, TISCO (Now, TATA STEEL)/SNTI - Jamshdpur, September 01-04 1998
- Technical talks

**5. Academic Contribution and Research & Consultancy:**

**5.1 Invited Lectures:** 1 (at a conference)

**5.2 Articles/ Chapters Published in Books:**

**5.3 Books Published as Single Author or as Editor:** 5 technical reports (additionally, 6 books in progress at various stages of development); manuscripts-available

Eg. of a completed book: Development of a new technique to determine the critical strain energy release rate of bone and other biological materials, 1994

Eg. of a book in progress: Bottle-Necks in Applied Mechanics

**5.4 Projects Guided:**

UG final projects (including Part Time Program): 22; UG pre-project training: 23; PG

theses: 4; without financial involvement from the employment institution

Typical:

- Study of Bioreactors
- Constructional Aspects of Machinery
- Feasibility of Generating Power using Tidal Energy
- Material Handling Aspects of Mini Earth Moving Equipment (MEME)
- Machine Handling Aspects of MEME
- Design of Machine Members for MEME
- Study of Special Purpose Manufacturing
- Micro Power Generation from the Sources of Energy for Domestic and Agricultural Purposes
- Design of a Tabletop Coreless Induction Furnace
- Design of a Hydraulic Press
- Automatic Generation of Part Programs for NC machines
- Automatic Feeding of Chain Parts in to Forks and Automatic Sensing of Pin Length
- Automatic Clamping Mechanism for a Thread Cutting Machine
- Design of Fixture and Gauge for Parts Involving Complexity
- Mechanical Design of UTMs
- Design of Control Systems for a UTM
- Design of a Manufacturing Simulator
- Design and Analysis of a Leaf Spring
- CAD/ CAE
- Fracture Mechanics Methods for Bone
- Normalized crack length requirements for compact sandwich specimen
- Characterization of Interface of Bone and Biomaterials
- Characterization of Bio-Materials using Fracture Mechanics approach
- Characterization of Bone using a Fracture Mechanics Approach
- FEA of a Connecting Rod
- Design of a Physical Simulator for Manufacturing
- Effects of Errors in Sensors, Instruments and Specimen Fabrication Machines on Fracture Mechanics Characterization of Materials
- Development of Fiber Glass System
- FEA of a Powered Roof Support

- Failure Analysis of Engine Cylinders

### 5.5 Research Interests:

Mechanical Engineering; MultiDisciplinary Research

### 5.6 Ph.D. Students:

a) Enrolled: b) Submitted: c) Awarded:

*No Ph.D. program offered at the institution*

**5.7** Papers Published in (specialist-audience; STEMM) Journals (**not** conference proceedings indexed by Scopus/ WoS; **not** conference papers published by the journals indexed by Scopus/ WoS) and Patent Office Journal (without reimbursement from the institution prior to the commercialization of patent/s) as the primary and the corresponding author which clearly explains the time and efforts made; typical list; manuscripts - available

Payment of money versus improvement with no unethical short-cuts

Manipulation versus the improvement of trustworthy skills

Imparting awareness versus misleading the concerned, who may lack sufficient awareness at the early stages

Effective utilization of time to hone the professional quality versus **wasting time** to publish the contents that the human resources of the institution are **not supposed to publish**

Consistent and persistent efforts versus wasting time **in the name of publishing** by following unethical means to create time

A simple question of ‘who are the **targeted audience** for a publication’ versus ethical publishing

Circumvention to plagiarism versus following the existing resources

Referring resources by illegal-access versus publishing the same content ‘in effect’

Wasting time to publish the contents that in effect degrade the technical thinking abilities of readers versus value addition to the ‘representative audience’

Wasting time for publishing the redundant contents that **already exist** in different forms versus the empowerment

Wasting time for using the connections to improve the count of citations versus presenting

Trying for a designation that can easily be misused to improve the count versus the continuous improvement of academic skills

A simple question of ‘**why did somebody cite** a publication’ versus the focus on value addition to the representative audience

A simple question on the ‘**quality of sufficient efforts** made in making a publication’ versus expanding the technical extents

Using the available networks to publish in journals to improve the citations, in order to give false image versus the focus on the ‘representative technical contribution’

A simple question of ‘what is the motive for writing the contents of a publication?’ versus the utilization of high quality time for the ‘representative professional improvement’

Mentioned in the next sub section to overcome the further **distractive efforts** and enhance awareness on the effective utilization of time

Author/s	Title	Name of the Journal	Volume	Page	Year
S.P.Paruchuru, V.U.Kumar, A. Jain and X.Dong	Comparative Estimates of Uncertainty in Measurements of Fracture Toughness	Journal of Testing and Evaluation: A Journal of ASTM International	45 (4)	1139	2017
S.P.Paruchuru, A.Jain and X.Dong	Loading Rate Requirements of a Compact Sandwich Test for Fracture Toughness Testing of Bone and Biomaterials	Trends in BioMaterials & Artificial Organs :: An International Journal	30 (2)	95	2016
S.P.Paruchuru and C.M.Agrawal	Miniature Specimens for Cortical-Bone Tests	Trends in BioMaterials & Artificial Organs :: An International Journal	26 (4)	202	2012
S.P.Paruchuru, X.Wang, and X.Dong	Finite Element Simulation of Nanoindentation Tests for Cortical Bone Using a Damage Plastic Model	Strength, Fracture and Complexity	6(3)	83	2010
S.P.Paruchuru and A.Jain	Normalized Specimen Thickness Requirements of a Compact Sandwich Test for Measuring Fracture Toughness of Bone	Journal of Applied BioMaterials & Functional Materials/ Journal of Applied BioMaterials & BioMechanics	7(1)	43	2009

S.P.Paruchuru and X.Wang	Finite Element Simulation of a Nano-Scratch Test of Bone	Journal of Mechanics in Medicine and Biology	9(3)	427	2009
S.P.Paruchuru, X.wang and C.M.Agrawal	Use of Compact Sandwich Specimen to Determine the Critical Strain Energy Release Rate of Bone	Bio-Medical Materials and Engineering	17(4)	249	2007
S.P.Paruchuru, A.Jain and X.Wang	Size Requirements of Compact Sandwich Specimen for Testing of Bone	Journal of Mechanics in Medicine and Biology	7(4)	419	2007
S.P.Paruchuru and A.Jain	Finite Element Modeling and Experimental Validation of Computational Procedures for a Fracture Mechanics Based Bone Test Method	Trends in BioMaterials & Artificial Organs :: An International Journal	21(1)	1	2007
S.P.Paruchuru	Recent Development in Specimens for Fracture Toughness Testing of Bone	Trends in BioMaterials & Artificial Organs :: An International Journal	18(1)	60	2004
S.P.Paruchuru, X.Wang and C.M.Agrawal	Validity of the Direct Relation Between the Fracture Mechanics Parameters, K and G, in the case of Bone	Journal of Mechanics in Medicine and Biology	4(3)	321	2004
S.P.Paruchuru, X.Wang and C.M.Agrawal	Finite Element Simulation of Elastic Compliance Technique for Formulating a Test Method to Determine the Fracture Toughness of Bone	Journal of Mechanics in Medicine and Biology	2 (3 and 4)	473	2002
S.P.Paruchuru	An Arrangement to Increase the Level of Liquids	Patent Office Journal	23	21500	2018
“	Instrumented Methods for Smart Operations	“	2	1267	2017

“	Instrumented Methods for Smart Operations	“	51	75821	2016
“	A Configuration for Nonlinear Trajectories.	Patent communicated			
“	Sensory-Methods and Equipment for Manufacturing	“			
“	Power Saving Methods and Arrangements	“			
S.P.Paruchutru et al.	An Arrangement to Enhance the Tissue Engineering and Other Lively Processes to Enhance life	“			
S.P.Paruchutru	Instrumented Methods For Material Tests	“			
S.P.Paruchutru	201941029478	Patent Office	13	11	2019
S.P.Paruchutru	201641041533	“	13	11	2016
S.P.Paruchutru	3519/CHE/2015	“	40	22	2015
S.P.Paruchutru	2788/CHE/2015	“	35	16	2015
S.P.Paruchutru	5525/CHE/2013	“	2013		
S.P.Paruchuru et al.	Estimation and Feasibility of Generating Power Using Tidal Energy	Pending			
S.P.Paruchuru	Forethoughts into Engineering Biological Tissue and Considerations of After-Transplantation	“			
“	Views on Improving the Global Health Through Health Sciences	“			
“	Standardization Aspects of Indentation and Scratch Methods for Biomaterials	“			
“	Design Aspects of Centrifugal	“			

	Molds	
“	Bulk Manufacturing Process- Considerations Effecting Products	“
“	Design Aspects of a Metallurgical Simulator	“
“	Bulk Manufacturing Concerns of Machine-Components	“
“	Machining and Bio- Machining Considerations	“
“	Considerations for Bulk- Manufacturing Simulators	“
“	Analysis of Precise-Drives for Bio-Instrumentation	“
“	Unconventional Machining Methods for Bioengineering	“
“	Manufacturing and Maintenance Aspects of Processes used for Prostheses	“
“	Consumer-Credit-Rating- System for the Developing Countries	“
“	Finite Element Analysis of Installation Failures in Engine Cylinder Liners	“
“	Power Generation from the Sources of Energy at Far-Sites	“
“	Development of a New Technique to Determine the Energy Release Rate of Bone and other Biological Materials	“
“	Techniques for Characterization of	“

	Biological-Materials	
“	MultiScale Mechanical Methods for Characterization of Materials	“
“	MutlitiScale Biomechanics	“
“	Mechanical and Systems research	“
“	Standardization aspects of novel methods	“
“	Development of a New Technique to Measure the Fracture Toughness of Biological Materials	“
“	Effective Reforms in Technical Education	“
“	Materials Influencing the Sensation	“
“	Materials for Deep Water Construction	“
“	Simulator for Deformation of Metals	“
“	Interspecies Study	“
“	Review of Compact Sandwich Specimen	“
“	Custom Specimens for In-Vitro Fracture Toughness Testing of Hard-Tissue	“
“	Material Measures of In-Vivo Testing	“
“	Concerns of Measures for Product-Tests	“
“	Foresights in to Aging	“

	Research	
“	Measures for Achieving Ecological Balance	“
“	Foresights into Minimum Disturbing Approach	“
“	Curriculum, Syllabus and Evaluation Modifications that Effect Quality in Technical Education	“
“	Development of a New Technique to Determine the Strain Energy Release rate of Biological Materials	“

**Significant publications:**

S.P.Paruchuru, Consumer-Credit-Rating-System for Developing Countries, 2004 (and discussions with the corporate, CRISIL between 2001-2003 transformed into a national credit policy decision and Unique Identification (UID) programs during 2005-2009)

S.P.Paruchuru et.al., Finite Element Analysis of Failures in Engine Cylinder Liners, 2005 (transformed into BOYSCAST fellowship research, after fellowship research and doctoral research)

**5.8 Papers Presented in International/ National Conferences:** Typical list; presented at the conferences organized by the reputed and internationally renowned professional societies, institutions of study (institutes where I attended my education), and employers

Without financial burden on the employment institution; manuscripts-available

Mentioned the purpose and modalities in the **previous sub section** and not repeated

Author/s	Title of the Paper	Names of the Conference/ Seminars	National/ International	Period
S.P.Paruchuru	Purpose of Academics	NCRAMET, VNRVJIET	National	January 09-10 2011
“	Engineering Research	VV, VNRVJIET	‘	March 02 2010
“	Mechanical Techniques for Characterization of Bone	NCSSC – SDM, VNRVJIET	‘	January 19-20 2009

S.P.Paruchuru, X. Wang, X.N. Dong and A. Jain	Mechanical Techniques for Measuring Properties of Cortical Bone	NCMM 2007, 17 <sup>th</sup> AM: SBAOI, and 1 <sup>st</sup> AM:STERMI of SBAOI, IIT-Chennai	‘	Decemb er 13-14 2007
S.P.Paruchuru	Multiscale Characterization of Bone	OS, MNNIT- Allahabad	‘	July 16 2007
“	Standardization Aspects of CSS for Fracture Toughness Testing of Bone	SAS, MNNIT- Allahabad	‘	January 03 2006
“	Syllabus, Curriculum, and Evaluation Concerns that Affect Quality in Technical Education	NCQTE, VRSEC- Vijayawada	‘	October 18 2002
S.P Paruchuru	Fore-Thoughts on Engineering the Biological-Tissue, continuous Evaluation and After-Transplantation (withdrawn)	IMECE-O of ASME	Intern ational	Novemb er 13-19 2020
S.P Paruchuru, S.K Koneti, D. Jammula and J.Nuthalapati	Estimation and Feasibility of Generating Power Using Tidal Energy (IMECE2020-22218)	‘	‘	‘
S.P Paruchuru, P.R Maturi and J. Nuthalapati.	Finite Element Analysis of Installation Failures in Engine Cylinder-Liners (IMECE2020-22253)	‘	‘	‘
S.P Paruchuru	Cementitious Materials for Deep-Water Construction (withdrawn)	‘	‘	‘
S.P Paruchuru	Power Generation from the Sources of Energy at Far-Sites (withdrawn)	‘	‘	‘
S.P.Pauchuru and A. Kolluri	Minimum Destructive and Noninvasive Test Methods for Natural Materials (IMECE2019-10416)	IMECE-U of ASME	‘	Novemb er 8-14 2019
S.P.Pauchuru and A. Kolluri	Standardization Aspects of Fracture Testing of Bone and Bio-Materials (IMECE2019-10417)	‘	‘	‘
A.Kolluri, B.Srinivasa Prasad and S.P.Paruchuru	Evaluation of Thermal Effects in Turning Process: Numerical and Experimental Approach (IMECE2019-10423)	‘	‘	‘

S.P.Pauchuru and A. Kolluri	Standardization Aspects of Methods for Testing of Engineered Biological-Tissue (IMECE2019-12878)	‘	‘	‘
S.P.Paruchuru et al.	Estimation and Feasibility of Generating Power Using Tidal Energy (AJKFLUIDS2019-4665)	AJKFC-SF of ASME, JSME and KSME	‘	July 28 to Aug. 02 2019
S.P.Paruchuru	Power Generation from the Sources of Energy at Far-Sites (withdrawn)	“	‘	‘
S.P.Paruchuru	Cementitious Materials for Deep-Water Construction (withdrawn)	“	‘	‘
G.K.Pujari et al.	Hydrodynamic Behavior of External Air-Lift-Loops (AJKFLUIDS2019-4707)	“	‘	‘
S.P.Paruchuru	Finite Element Analysis of Installation Failures in Engine Cylinder-Liners (MSEC2019-2708)	MSEC-E of MED-ASME and NAMRI-SME	‘	June 10-14 2019
“	Evaluation Methods for Bone-BioMaterial Interfaces (MSEC2019-2709)	“	‘	‘
“	The Covertness of Biological Power (MSEC2019-2710)	“	‘	‘
“	Methods of Bio-Machining and Electro-Machining (MSEC2019-2711)	“	‘	‘
“	Machining and Bio-Machining Considerations (IMECE2018-88989)	IMECE-P of ASME	‘	November 09-15 2018
“	Considerations for Bulk-Manufacturing Simulators (IMECE2018-88996)	“	‘	‘
“	Analysis of Precise-Drives for Bio-Instrumentation (IMECE2018-88999)	“	‘	‘
“	Unconventional Machining Methods for Bioengineering (IMECE2018-89017)	“	‘	‘
“	Manufacturing and Continuous Evaluation of Tissue (IMECE2018-89078)	“	‘	‘
“	Manufacturing and Maintenance Aspects of Processes Used for Prostheses (IMECE2018-89019)	“	‘	‘
“	Standardization Aspects of Specimens for Fracture Toughness Testing of Bone and Biomaterials (IMECE2016-	IMECE-A of ASME	‘	November 11-17 2016

	65356)			
“	Design Aspects of a Casting and Manufacturing Simulator (IMECE2016-65416)	“	‘	‘
“	Standardization Aspects of Indentation and Scratch Tests for Bone at the Multiple-Scales (IMECE2016-65358)	“	‘	‘
“	A study on the Feasibility of Generating Power Using Tidal Energy (IMECE2016-65494)	“	‘	‘
“	Design Aspects of the Tissue (IMECE2016-65418)	“	‘	‘
“	Comparative Estimates of Uncertainty in Measures of Fracture Toughness	fmmmd/ffmmmd of ASTM, USA	‘	November 14 2012
X.Dong, S.P.Paruchuru and X. Wang	Finite Element Simulation of Nanoindentation Tests for Cortical Bone using a Damaged Plastic Model	ASB: 31 <sup>st</sup> AM; USA	‘	August 22-25 2007
S.P.Paruchuru and X. Wang	3D Finite Element Simulation of a Novel Scratch Test for Assessing Bone Quality	BMES: 38 <sup>th</sup> AFM; USA	‘	October 11-14 06
X.Wang, S.P.Paruchuru, J. Mabrey and C.M.Agrawal	An Interspecies Study of Bone Fracture toughness	ORS: 42 <sup>nd</sup> AM of USA	‘	February 19-22 1996

**5.9 Sponsored Research Projects:** *National Funding Agencies; typical; obtained and executed; during 1993-2018*

*Without financial burden on the employment institution*

Title	Agency	Period	Grant amount	Ongg/ Compl
Better Opportunities for Young Scientists in Chosen Fields of Science and Technology (BOYSCAST), Principal Investigator, SR/BY/E-038/05	SERC (now SERB) DST, GoI Mentor: Dr. Wang	Selecte d:2005 2006-2007	INR 13,46,490.00	Comple ted
Multiscale Mechanical Methods for Characterization of Bone and Biomaterials, Principal Investigator 8023/ RID/ RPS-74/Pvt (II policy)/2011-2012	AICTE, GoI	2012-2016	INR 17,52,088.46	‘
BOYSCAST Fellowship Research, Principal Investigator	SERC (now SERB) DST, GoI	2007-2008	INR13,46,490.00	‘

SR/BY/E-038/05 (ACGR)		2009-2016		
Standardization Aspects of Compact Sandwich Specimen for Fracture Toughness Testing of Bone, Principal Investigator, SR/FT/L-83/03	SERC (now SERB) DST, GoI	2003-2006	7,42,000.00	‘
Craniofacial Mechanics: FEA of Human Craniofacial Skeleton to Analyze the Influences of Buttress Supervisor: Dr. Singh	UTHSCSA or UT-Health/ UTSA, NIH/ NSF	1994-1995	USD 3,000.00	‘
Fracture Mechanics of Bone Supervisors: Dr. Agrawal and Dr. X. Wang	CEBBI, UTHSCSA or UT-Health, NIH/ NSF	1993-1994	USD 11,000.00	‘
Interspecies Study of Bone Fracture Toughness; Supervisors: Dr. Agrawal and Dr. X. Wang	CEBBI, UTHSCSA or UT-Health, NIH/ NSF	1994-1995	USD 10,000.00	‘
Vehicle Dynamics: Stability of Heavy Articulated Vehicles	UTSA; Supervisor: Dr. Nestor Sanchez	1993	USD 2,000.00	‘

Other (from National Funding Agencies)

Upgradation of Thermal Engineering Laboratory; Chief Coordinator 8024/RIFD/MOD-370 (Pvt.)/policy-III/2011-2012	AICTE, GoI	2012-2013	INR 4,85,125.00	Completed (Executed by the prevailing HOD)
Travel Grant F. No. 6-420/2018(TG)	UGC, GoI	09-15 November 2018	INR 1,49,072.00	Completed

**5.10 Consultancy Projects: Typical list; 1995 – 2002; Revenue to the employment institution**

Title	Agency	Period	Grant amount	Ongoing/ Completed
Multipurpose Materials Processor	MCC	1y	NA; part of the job	Completed
Roof Support	FP	“	“	“
Versatile Rolling	MCC	“	“	“
Use of Simulators in Manufacturing	KI	“	“	“

Member Data System	SME	“	“	“
Resource Data System	AFB-R	“	“	“
Multipurpose Recycling Enabler	EII	“	“	“
Plant Layouts for Ambience	FP	“	“	“
Preventive Maintenance System	EII	“	“	“
Activity Based Costing	AI	“	“	“
Development of Manufacturing Systems	AI	“	“	“
Handling of Metallic Products	FP	“	“	“
Handling of Heavy Equipment	TS	“	“	“
Indexing of Engineering Drawings	EII	“	“	“
Indexing of BIS codes	TS	“	“	“
Development of Sluice Gates	TS	“	“	“
Development of Reinforced Concrete Mixer	MCC	“	“	“
Analysis of Engine Components	KI	“	“	“
Development of Container Systems	EII	“	“	“
Development of Containers	EII	“	“	“
Development of Bio Systems	UT	“	“	“
Development of Advanced Materials	FGS	“	“	“
Submitted CCRS Proposal	CRISIL	Not applicable; Prepared/ Submitted during my stay at VRSEC		
Submitted Bridge Course Proposal	NIIT			
Submitted Powered Roof Support Proposal	APHMEL			
Prepared Proposal for Submitting to RTC (Did not submit due to lack of time)				

### 6 Awards / Honors Received:

- **BOYSCAST fellowship** – UTSA, AY 2005-2007 (DST, Government of India - GoI)
- BOYSCAST fellowship – 2007-2016, India (DST, GoI)
- **Certificate of national merit – 1987 (GoI)**

- Not even a minute's time spent to attend as an observer, resource person, external faculty or any other role external to the employment institution at any point of time in any form (Section 7 for further clarity on the **complete list** of employers at different time-frames throughout the career)
- Initiated several sponsored research projects of NFA (DST, AICTE & UGC - GoI)
- Assistance to the enrolled in taking up trustworthy research fellowships and scholarships from National Funding Agencies; suggestions to improve the resume accordingly
- Guidance for the first Ph.D. in Natural Fiber Composite Materials at VRSEC, to the senior most faculty member (Professor) of the Mechanical and Production Engineering Department of the same Institute during 2000-2003 (degree awarded in AY 2003-2004); the work became focal point and resulted in numerous Ph.Ds in the same field across the Telugu speaking states of he nation
- Pursued and completed the undergraduate and postgraduate education in regular programmes of regular time at highly competent institutions
- Dual qualifications during undergraduate education in parallel, during AY 1988-1992
- High quality Post-doctoral research that helped the undergraduate programmes
- **Visiting of several international universities** around the globe, from 1992 – till date
- Award of academic and Industrial research, from 1992 – till date
- Editor- knowledge asset (of VNRVJIET) during AY 2009 - 2011
- Editor - R11 UG and PG regulation (curriculum)
- Preparation of autonomous curriculum for the first batch at VNRVJIET
- Able enrolled/ alma mater/ pedagogy from 1976 – till date
- High Quality Positions at MNCs and Research Positions during FY 1993 – 2000 that helped Academics from 2000-till date
- BOYSCAST Fellow at UTSA
- **Principal Investigator – NFA (2003 till date)**
- Indian Society for Technical Education (ISTE)-Life Member
- Society for Biomaterials and Artificial Organs (SBAOI)-Life Member
- ASTM-Member & Reviewer of the Standards
- ASME-Member & Reviewer of the Standards
- SME (Member during 2015-2016)
- BMES (Member during 2006-2007)
- Ambassador of Bentham Science Publishers
- Chairman-Board of Studies for ME and AME-R11 (UG and PG Regulation 2011)
- Member-Board of Studies-R12, R13
- Effective mentoring to the participating members of faculty, with the target of resulting in performance, at par with the international standards

- HoD – Mechanical and Automobile Engineering for the first autonomous batch at VNRVJIET and a national conference
- Published the first international journal paper as the primary and corresponding author in a SCI journal from a self-finance institution in the composite state of AP and Telangana in the year 2002 – at the time when not even a ‘self-finance autonomous institution’ existed; this is the first journal paper published in the area of fracture mechanics from a self-finance institution in the nation; first in the nation to publish 12 international journal papers as the primary and corresponding author in specialist-audience journals, from a self-finance institution (5.7 and 5.8)
- First to get awarded a sponsored research project (SRP) from a NFA, DST (GoI) at a self-finance institution in the composite state of AP and Telangana – when not even a ‘self-finance autonomous institution’ existed; this is the first SRP of a self-finance institution, in the field of fracture mechanics in the nation; **first in the nation to get awarded DST’s well reputed BOYSCAST fellowship in 2005, at a self-finance institution**
- Initiation of the practice to organize the full time short term courses/ faculty development programmes (FDPs) of a minimum of 40 hour length, in UGC/ MHRD/ AICTE approved colleges of the nation, that does not seek any kind of financial support from the ‘funding agencies’ or the employer; organization of fifteen short term training programs of 24-96 hour duration during 2003-2012, eleven other technical training programs, and several other training programs as the coordinator and instructor, that conform to the aforesaid standard; effective utilization of the same in implementing the significant curricular-improvements, from 2002 – to date; details in sections 2.2, 3.2, and 4.1
- Development and implementation of all time and top quality syllabus and curriculum of the nation for the undergraduate mechanical and automobile engineering programmes of 2011-2015 as HoD – ME and AME during 12.2010 to 08.2011 and Chairman of the department board of studies during 01.04.2011 to 31.05.2012; taught five different (engineering core; non-elective) courses of the mechanical engineering programme during the first three years of the commencement of the aforesaid batch, primarily to facilitate imparting the deserving-essence through UG training; continuation of the quality, quantity, and communication; extension to various other programmes (section 2.2)
- Promoted the enrolled as high quality authors

**Significant:**

**Sincere respect (not name sake)** to the dignitaries who initiated the employment rather than smartly ignoring after attaining the pseudo-qualification/ tactics for want of favors

**7. Appointments:**

*Typical high impact positions held:*

March 01 1991 - August 14 1992 (Part Time): Project Trainee, NIIT – Regional Centre, Hyderabad, India

January 01 1992 - May 15 1992 (Full time): Project Trainee, JNTU - Kukatpally/ Bharat

Dynamics Limited (BDL) – India

October 01 1992 – December 15 1992: Assistance for Dynamics, Mechanical Engineering, UTSA

January 14 1993 - September 30 1995: Research appointments at UT system at CNC laboratory, Vehicle Dynamics laboratory, Orthopaedic Biomaterials laboratory, Craniofacial Mechanics laboratory – UTSA/ UTHSCSA

October 01 1995 – May 15 1998: Contract assignments as a Project Engineer at AI, EII, CCI, SME, AFB-R, etc.

June 09 1998 - July 01 2000: Asst. Manager, Design & Development group, TATA GROWTH SHOP, TATA STEEL – India

August 01 2000 - February 28 2006: Lecturer, Senior Lecturer, Assistant Professor (Equivalent to Associate Professor at JNTU) at Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC) – India

June 20 2003 to February 28 2006: Principal Investigator, Sponsored Research Project (NFA), VRSEC – India

March 02 2006 - December 31 2008: Professor, Pragati Engineering College (PEC) – India

02 March 2006 - December 31 2008: BOYSCAST Fellow of DST, PEC – India

April 25 2006 to April 28 2007: BOYSCAST Fellow of DST – UTSA (on Lien from PEC)

January 02 2009 – till the present date: Professor, Vallurupalli Nageswara Rao Vignana Jyothi Institute of Engineering and Technology (VNRVJIET)

January 2009 – February 2016: BOYSCAST Fellow of DST, VNRVJIET

June 2012 – February 2016: Principal Investigator, Sponsored Research Project (NFA), VNRVJIET

March 2009 - May 2009: Member, Academic Council, VNRVJIET

March 2009 - March 31 2011: Member, Curriculum Preparation Committee, VNRVJIET

May 01 2009 – March 01 2011: Editor, Knowledge Asset, VNRVJIET

July 2009 - September 2011: Member, Research Committee, VNRVJIET

November 27 2010 – September 05 2011: Head of the Departments, Mechanical and Automobile Engineering, VNRVJIET

December 01 2010 - August 31 2011: Member, Disciplinary Committee, VNRVJIET

April 01 2011 – May 31 2012: Chairman, Board of Studies for R11, Mechanical and Automobile Engineering Departments, VNRVJIET

June 01 2012 to May 31 2013: Member, Board of Studies for R12 and R13 of Mechanical Engineering, VNRVJIET

## **8 Motto:**

Work is Worship and Efficiency is Divine

Vision, Work, and Efficiency Secure Life

God and Nature Gave Everything to Know the Unknown