

STUDENT HANDBOOK 2019-2020



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD
Autonomous institute affiliated to JNTUH

From the desk of CEO

Dear Students,

Welcome to the Vardhaman College of Engineering!

On the occasion of starting your journey of higher education, particularly engineering education, you are exposed to rapid technological advancements in several technological domains. The areas of engineering challenges include the space research, high performance computing, environment, sustainability, energy, infrastructure, transportation, healthcare and many more. Solving problems in these areas requires exceptional application of science, engineering and managerial skills.

To transform you as an engineer, we at Vardhaman designed and developed the curriculum of all programmes covering broad domains. Created a well planned and structured teaching-learning systems blended with practice (application of knowledge). This would facilitate you for better application of the knowledge gained through various courses. The college is having good infrastructure facilities such as classrooms, laboratories, library, auditoriums, sports and cultural facilities to nurture and support the students in wholesome learning. On top of everything, ample time spaces/slots are created for self-learning, both digital and physical/infrastructural facilities.

The faculty would guide you to develop an innovative and creative mind-set to create entrepreneurial zeal by way of designing solutions to the problems related to environmental and societal needs. You should collaborate, communicate work with people from various disciplines and diverse cultures. Interdisciplinary and multidisciplinary activities in terms of internships, capstone projects, higher studies would enhance your knowledge horizon and skills in addressing the real time problems which the entire world is looking for.

Much to your surprise, you will discover new ways to serve the common good through solutions that not only push the bounds of what is possible, but are a ton of fun as well!

For bright career you should enjoy what you do. For building a great career you should have the right Conduct, Competence and Confidence through focused learning during your graduate studies.

Enjoy the learning experience at Vardhaman.

Dr. K. Mallikharjuna Babu
Director & CEO, VCEH

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1. VISION, MISSION AND PROGRAM OUTCOMES

1.1 Vision

To be a pioneer institute and leader in engineering education to address societal needs through education and practice..

1.2 Mission

- To adopt innovative student-centric learning methods.
- To enhance professional and entrepreneurial skills through industry-institute interaction.
- To train the students to meet the dynamic needs of the society.
- To promote research and continuing education.

1.3 Program Outcomes (POs)

PO1: Engineering Knowledge: Apply knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PO3: Design/ Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for the public health and safety, and cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO7: Environment and Sustainability: Understand the impact of professional engineering solutions in societal and environmental

contexts, and demonstrate the knowledge of, and need for sustainable development.

- P08: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- P09: Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multi-disciplinary settings.
- P010: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- P011: Project Management and Finance:** Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- P012: Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

2. ABOUT VARDHAMAN COLLEGE OF ENGINEERING

Vardhaman College of Engineering was established in the year 1999 by Vardhaman Educational Society, Hyderabad. Currently Dr. T. Vijender Reddy, an Orthopedic Surgeon specialized in joint replacements is the Chairman of the College, Sri. T. Upender Reddy, a Mechanical Engineer is the Secretary. They are ably supported by Sri. M. Rajasekhar Reddy, Vice-Chairman who is an educationist by profession and Sri. E. Prabhakar Reddy, Treasurer and a business man.

2.1 Location

VCE enjoys geographical advantage as it is well connected by air, rail and road. The Hyderabad international airport at Shamshabad is just a 30 minute drive, and the college campus is close to Bangalore highway (NH-7) making it accessible to several important centers in and around the city. A ten minute drive from the college campus reaches out to the outer ring road that connects Shamshabad airport to city.

2.2 Approval and Affiliation

The Jawaharlal Nehru Technological University, Hyderabad has conferred "Autonomous Status" to the Vardhaman College of Engineering from the

Academic year 2011-2012 onwards. All the six UG programs (Computer Science and Engineering, Information Technology, Electronics and Communication engineering, Electrical and Electronics Engineering, Mechanical Engineering and Civil Engineering) and seven PG programs (Master of Business Administration, M.Tech - Computer Science and Engineering, M.Tech - Power Electronics and Electrical Drives, M.Tech - Digital Electronics and Communication Systems, M.Tech - Embedded Systems, M.Tech - Engineering Design and M.Tech - Structural Engineering) are under autonomous status.

- The institution is ranked 1st position in infrastructure and research, ranked 4th for placements and 4th among top 25 institutions in Telangana by Times Engineering Survey
- Ranked 152 among top 200 engineering colleges in India by NIRF, Govt. of India
- ISO 9001:2015 Certified for the period 2018-2021
- AAA+ ranking by Careers 360
- 5 UG Programs (CS, IT, EC, EE & ME) Accredited under Tier-I format for three years from 2018-19 to 2020-21
- NPTEL Local Chapter is rated with AA and 18th rank all over India
- JNTUH approved Research Centers for CSE, ECE and ME
- NAAC Accredited 'A' Grade with 3.24 CGPA; status extended up to December 2019
- Awarded Best Engineering College in Telangana State by ISTE for the year 2018
- RWT Project of Vardhaman is shortlisted in top 10 in the GEDC Airbus Diversity Award for Engineering Education

3. INFRASTRUCTURE AND FACILITIES

The VCE campus has a beautiful and serene atmosphere ideally suited for technical education. The infrastructure and facilities available on campus are amongst the very best. It is a wholly self-contained campus comprising of everything that students on campus would ever require.

In order to take care of aesthetic dimensions of the campus, considerable efforts have been made in the recent past to beautify the campus. Greenery in terms of the grass, permanent green plants, trees and flowers have been laid down all over the campus. Horticulture maintenance and development has been meticulously monitored to keep up with the changing weather.

VCE provides full-fledged and marvelous infrastructure. All the required Drawing Halls, Class Rooms, Laboratories, Engineering Workshop, English Language Communication Skills Lab, Library and Information Centre, Computer Centre,

Internet Lab, Seminar Halls, E-class Rooms, Indoor Games and Faculty Rooms are housed in a total building space of 4,09,584 sft. LCD projectors are established for all the classrooms to assure an effective teaching-learning process.

The College is architecturally well designed and functionally spacious classrooms. The laboratories and workshops are fully equipped. The College is facilitated with power supply of 450KVA, 5 Diesel Generator Units of 675KVA and 27 UPS units of 145KVA.

3.1 Amenities

To offer perfect ambience for academic pursuits, the college is provided with all the required facilities including:

- Wi-Fi enabled campus
- Separate computer center for each department
- Generator for back-up power supply
- Fully Automated Library
- High speed Internet connection
- All departments interconnected by LAN
- Digital Library providing access to international journals
- English Language Communication Skills Lab
- Air-Conditioned Computer Centers
- Air-Conditioned Seminar Halls
- Well established Air-Conditioned Auditoriums of 500 and 1500 seating capacities
- Hygienic cafeteria
- Transport from all parts of the twin-cities
- Indoor Stadium
- Common Room for Girls

3.2 Computer Centre

The computer labs are fully air conditioned and the students are privileged to have unlimited access round the clock. The laboratories are equipped with structured fiber optic and UTP cabling network and other relevant software. We have state-of-the-art computer laboratories with **1712** computers / laptops, **11** servers and **102** printers with a dedicated network. The overall ratio of computers to students is more than the number recommended.

The Computer laboratories are being upgraded from time to time to provide the best computational infrastructure. The Computer Centre houses powerful servers, which provide computational environment comprising of multiple

operating systems - Microsoft Windows, LINUX & UNIX and can be accessed from any of the nodes attached to the servers across the campus.

The Department of Information Technology maintains an institutional membership in the MSDNA that helps the students to have an access (free of charge) to all the latest Microsoft development tools. Students may check out the original CD's for the package if they want (24 hour checkout only), and they will be given a label with its activation code. Students can immediately burn a copy of the CD(s), affix the label, and return the original CD to the department.

3.3 E-Class Rooms

The college has three E-Class rooms equipped with LCD projectors and computers with a seating capacity of 70, 120 and 240. Video lectures, web-based learning and direct telecast through interactive learning are provided in the electronic classroom.

3.4 Seminar Halls

The college has seven seminar halls equipped with LCD projectors and computers with a seating capacity varying between 40 and 120. Video Lectures, web based learning and direct telecast through interactive learning are provided in the seminar halls.

3.5 Conference Hall and Auditoria

The institution has a magnificent conference hall where important meetings are held.

The College has a centrally air-conditioned auditorium with 500 seating capacity where in Seminars, Conferences and Guest Lectures are conducted. Besides Orientation Programmes, Fresher's Day, Parents Meet, Annual Day and Graduation Day are also organized in a newly constructed auditorium of 1500 capacity.

3.6 English Language Communication Skills Laboratory

The English Language Communication Skills Laboratory facilities the students to prepare for GRE, TOEFL and other competitive exams and helps students to improve their communication skills.

3.7 Faculty

VCE has 245 full-time Faculty including 88 PhD's to impart quality education and training to the students. The College has a talent pool of faculty with a rich blend of experience in teaching and research. Most of them have a proven record of admirable accomplishments. The faculty includes those who had experience at IISc, IITs, NITs and the Universities to provide academic leadership in the college.

3.8 Central Library

'Library and Information Center', is one of the best engineering college libraries in the state. The institute has a spacious CENTRAL LIBRARY in an independent building with an area of 30,000 sft. spread over two floors. First Floor accommodates Reference Section cum reading hall Books, SC/ST Book Bank, Reprography, Biometric device for Library Users, Library Kiosk (self issue and return of books) Print Periodicals Section (National & International), Circulation Counter, Newspapers, Back Volumes of the Periodicals, Project Reports, Encyclopedias and Dictionaries. Second Floor accommodates Stack Area cum reading hall, Digital Library, CDs/DVDs and so on. It has modern infrastructure with a reading capacity of 500 students. Every faculty/student entering into the library has to put thumb impression through biometric machine instead of the manual gate register, which is mandatory for check-in and check-out of library users.

The technical processing of the books is done by systematic classification by using DDC (Dewey Decimal Classification) scheme. An Open Access has been facilitated for consultation and selection of books.

It has a collection of **65,324 volumes of books** as on 26th July, 2019. It has subscribed to more than **8,538 online Journals** of IEEE/IET Electronic Library (IEL), ASME, ASCE, J-GATE -Social Science and Humanities and Elsevier's Scopus (Abstract and Citation Database) and **45,99,351 e-books** of World eBook Library and it is subscribing to more than **174 Indian and International Journals & Magazines** in Print.

Digital library is equipped with 30 systems to access E-journals & E-books. In addition Multimedia E-Learning Center and photocopying are made available for the convenience of the users. NPTEL Facility (National Program on Technology Enhanced Learning) to access web & video lectures and Institutional Membership of DELNET (**Inter- library loan**) for resource sharing are available in the library. It also provides **National Digital Library of India** facility for huge collection of e-Learning resources with a single window search facility which is being developed at IIT Kharagpur.

The Center Library is equipped with **NewGenLib** Software Package which is an Integrated Library Management System (ILMS) with Barcode Scanner that

supports all in-house operations of the library. The Central Library can be accessed through the On-line Public Access Catalogue (**OPAC**) within the campus premises.

Library and Information Centre provides uncompromising information and caters to the intellectual requirements of its students and faculty members with user-friendly approach. It offers a fully integrated and dynamic environment for conducting academic and research activities. Multiple copies ensure that resources are easily available in Reference Section and Stack Area as well. Central Library is Wi-Fi enabled and under CCTV surveillance. For circulation of library books '**Automated Self Service Kiosk**' is installed in the Central Library which enables users to issue (check-out), return (check-in) and renew books on their own. For each transaction, Kiosk generates a receipt with details of library documents transacted and due dates.

The Central Library has a DTH antenna to receive the **SWAYAM PRABHA** group of 32 channels devoted to telecasting of high-quality educational programmes on 24X7 basis practicing the GSAT-15 satellite. The channels are uplinked from BISAG, Gandhinagar. The contents are provided by NPTEL, IITs, UGC, CEC, IGNOU, NCERT and NIOS. The INFLIBNET Centre maintains the web portal. Students and staff members can watch the offering MOOCs courses through SWAYAM.

It has become the institutional member (10 Library Identity Cards for 30 documents) of **British Council Library, Hyderabad**. We can access as well borrow the entitlements like books, magazines DVDs/CDs and get access to world class resources from this library for the benefit of students and faculty members.

Working Hours

All working Days: 9:00 AM to 6:00 PM

The issue counters functions between 9.00 AM and 5.00 PM on all working days.

3.9 Dispensary

The College has a Dispensary with attendant doctors. First-Aid kits are attached to all laboratories. The Hostel has a Health Care Centre with a Medical Officer, a nurse and a vehicle for transport in case of an emergency. The medical facility is available round the clock for all the inmates of the hostel. The Institution has a tie-up for consultation with **Trident Multi-Specialty Hospitals**, Shamshabad for the students, staff and faculty at concession charges. In case of emergency, ambulance is available round the clock and the services of Shamshabad hospitals are available at hand.

3.10 Hostel

Separate hostels for 300 boys and 300 girls are located in the vicinity of the College and are managed by Vardhaman Educational Society. Play grounds, lawns and greenery provide conducive environment for the recreation and comfortable stay on the campus.

4. PROGRAMS OFFERED

Vardhaman College of Engineering, an autonomous college affiliated to JNTUH, offers the following B. Tech Programs of study leading to the award of B. Tech Degree under the autonomous status.

The College was established in 1999 with an initial intake of 180 students in 3 programs. Currently the student's intake is 1068 with 6 UG Programs and 7 PG Programs.

S. No.	PROGRAMS	INTAKE	Total
B. Tech (U.G)			
1	Computer Science and Engineering	240	900
2	Electronics and Communication Engineering	240	
3	Electrical and Electronics Engineering	120	
4	Information Technology	120	
5	Mechanical Engineering	120	
6	Civil Engineering	60	
M. Tech (P.G)			
7	Computer Science and Engineering	18	108
8	Power Electronics & Electrical Drives	18	
9	Digital Electronics & Communication Systems	18	
10	Embedded Systems	18	
11	Engineering Design	18	
12	Structural Engineering	18	
MBA (P.G)			
13	Master of Business Administration	60	60
TOTAL:			1068

Research Scholars can pursue PhD in the departments of EC, CS and ME under the approved research centres of JNTUH.

5. CHOICE BASED CREDIT SYSTEM (CBCS)

- All the academic programs under autonomy are based on credit system. Credits are assigned based on the following norms:
- The duration of each semester will normally be 23 weeks with 6 days a week (every second Saturday will be observed as holiday). A working day shall have seven lecture hours.

Table: Definition of Credit

1 Hour Lecture (L) per week	1 Credit
1 Hour Tutorial (T) per week	1 Credit
1 Hour Practical (P) per week	0.5 Credit
2 Hours Practical (Lab) per week	1 Credit

- The four year curriculum of any B. Tech. program of study shall have 160 credits in total. The exact requirements of credits for each course will be as recommended by the Board of Studies concerned and approved by the Academic Council.
- In the case of lateral entry students, B. Tech. program of study shall have a total 122 credits.
- For courses like mini project / project work / technical seminar, where formal contact hours are not specified, credits are assigned based on the complexity of the work.

6. ACADEMIC REQUIREMENTS

6.1 Attendance

- To be eligible to appear for the semester end examinations (SEE) a student shall acquire a minimum of 75% of attendance in aggregate of all the courses. Shortage of attendance in aggregate up to 10% (65% and above, and below 75%) in each semester may be condoned. Shortage of attendance below 65% aggregate shall not be considered for condonation. The condonation of attendance will be done by the college academic committee based on the student's representation with supporting evidence and subjected to its genuine and valid grounds. The decision of the committee is the final. A stipulated fee shall be payable towards condonation process. Students whose shortage of attendance is not condoned in any semester are not eligible to take their SEE and detained. The registration made for that semester shall

deemed to be cancelled. In such cases, student will not be promoted to the next semester. They will have to seek re-registration for all those courses registered in that semester in which student was detained, by taking re-admission into that semester as and when the courses are offered; if there are any professional/open electives, the same may also be re-registered as and when they are offered. However, if those electives are not offered in later semesters, then alternate electives may be chosen from the same set of elective courses under that category.

- Condonation for a student will be given for a maximum of four times in the entire duration of his program, whereas for lateral entry students it will be for a maximum of three times.
- A student fulfilling the attendance requirement in the present semester shall not be eligible for re-admission into the same class.
- A student shall register for all credits and has to earn all the credits. Marks obtained in all courses shall be considered for the award of the class based on aggregate of grades.
- A student should register and obtain pass marks in all Mandatory courses mentioned in the curriculum to be eligible for awarding the degree. Marks obtained in these courses shall not be considered for awarding class.

6.2 Credits

- A student shall be declared PASS in a given course, if he/she secures a minimum of 40% in Continuous Internal Evaluation (CIE) and not less than 35% of marks in the Semester End Examination (SEE) and overall 40% of marks in the sum total of CIE and SEE
- A student shall be promoted from I Year to II Year program of study only if he fulfills all the academic requirement of securing 50% credits offered from the regular examinations held till the end of I year II semester, including supplementary examinations
- A student shall be promoted from II Year to III Year program of study only if he fulfills all the academic requirements of securing 60% credits from the regular examinations held till the end of II year II semester including supplementary examinations
- A student shall be promoted from III year to IV year program of study only if he fulfills all he academic requirements of securing 60% credits, from the regular examinations held till the end of III year II semester including supplementary examinations
- A student shall register for all courses and has to earn all the credits. Marks obtained in all the courses shall be considered for the award of the class based on aggregate of grades.
- A student should register for all Mandatory Courses mentioned in the curriculum and get minimum pass marks to get the degree awarded. Marks obtained in these courses will not be considered for awarding class.

7. AWARD OF DEGREE AND CLASS

7.1 Award of Degree

The Degree will be conferred and awarded by Jawaharlal Nehru Technological University Hyderabad on the recommendations of the College Academic Council.

For students admitted into B.Tech. Program (Batches admitted from 2019-2020)

Eligibility: A student shall be eligible for the award of B. Tech. Degree, if he/she fulfils all the following Conditions:

- The candidate shall pursue a program of study for not less than four academic years and not more than eight academic years.
- The candidate shall register for 160 credits and has to secure all 160 credits. Marks obtained in all 160 credits shall be considered for the award of the class based on aggregate of grades.
- The candidate has to obtain not less than 40% of marks (minimum requirement for declaring as passed) in all the courses.
- The candidate shall not have any dues to the college, hostel, library etc. and to any other amenities provided by the College.
- The candidate shall not have any disciplinary action pending against him.
- The candidate should satisfy minimum requirements for in respect of Mandatory courses.

7.2 Award of Class

After a student has satisfied the requirement prescribed for the completion of the Program and is eligible for the award of B. Tech. Degree, he/she shall be placed in one of the following four classes shown in below Table.

Table: Declaration of Class based on CGPA (Cumulative Grade Point Average)

Class Awarded	CGPA to be Secured	From the aggregate marks secured from 160 Credits for Regular Students and 122 Credits for Lateral Entry Students.
First Class with Distinction	≥ 8.0	
First Class	6.5 to <8.0	
Second Class	5.5 to <6.5	
Pass Class	5.0 to <5.5	
Fail	Below 5.0	

7.3 Grade Point

It is necessary to provide equivalence of percentages and/or *Grade Point (GP)*. This shall be done by prescribing certain specific threshold of marks in a course.

Table: Percentage Equivalence of *Grade Points* (For a 10-Point Scale)

Grade	Grade Points (GP)	Percentage of Marks
O	10	≥ 90
A+	9	≥ 80 and < 90
A	8	≥ 70 and < 80
B+	7	≥ 60 and < 70
B	6	≥ 50 and < 60
C	5	≥ 40 and < 50
F	0	Below 40
AB	0	ABSENT

For calculating the final percentage of marks equivalent to the computed CGPA, the following formula is used:

$$\text{Percentage of Marks} = (\text{CGPA} - 0.5) \times 100$$

7.3.1. Semester Grade Point Average (SGPA)

The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

$$SGPA(S_i) = \frac{\sum C_i \times G_i}{\sum C_i}$$

Where C_i is the number of credits of the i^{th} course and G_i is the grade point scored by student in the i^{th} course.

7.3.2. Cumulative Grade Point Average (CGPA)

The CGPA is calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a program, i.e.

$$CGPA(S_i) = \frac{\sum C_i \times S_i}{\sum C_i}$$

Where S_i is the SGPA of the i^{th} semester and C_i is the total number of credits in that semester.

8. CODE OF CONDUCT

8.1 General Instructions

Each student shall conduct himself in a manner befitting his association with VCE.

- He is expected not to indulge in any activity, which is likely to bring disrepute to the college.

- He should show due respect and courtesy to the teachers, administrators, officers and employees of the college and maintain cordial relationships with fellow students.
- Lack of courtesy, decorum, indecorous behavior or untoward attitude both inside and outside the college premises is strictly prohibited. Willful damage or discard of Institute's property or the belongings of fellow students are not at all accepted. Creating disturbance in studies or adopting any unfair means during the examinations or breach of rules and regulations of the Institute or any such undesirable means and activities shall constitute violation of code of conduct for the student.
- **Ragging in any form is strictly prohibited and is considered a serious and punishable offence as per law. It will lead to the expulsion of the offender from the college.**
- **Carrying cell phones is strictly prohibited in the campus. Mobile phones, if found, will be confiscated and will not be returned.**
- Violation of code of conduct shall invite disciplinary action which may include punishment such as reprimand, disciplinary probation, debarring from the examination, withdrawal of placement services, withholding of grades/Degrees, cancellation of registration, etc., and even expulsion from the college.
- Principal, based on the reports of the warden of Institute hostel, can reprimand, impose fine or take any other suitable measures against an inmate who violates either the code of conduct or rules and regulations pertaining to college hostel.
- A student may be denied the award of Degree/certificate even though he has satisfactorily completed all the academic requirements if the student is found guilty of offences warranting such an action.
- Attendance is not given to the student during the suspension period.

8.2 College Timings

- I B.Tech from 9:00 AM to 03:50 PM with Lunch break between 11:30 AM and 12:20 PM
- II, III & IV B.Tech/M.Tech/MBA: From 9:00AM to 3:50 PM with Lunch break between 12:30 PM and 1:20 PM

8.3 Dress Code

- Dress code does not necessarily mean college uniform. A decent, smart and formal dress is what is expected in a formal place like college. It is a place where students from different backgrounds and cultures come to learn. Hence, homogeneity is imperative. A dress code brings about unity and eliminates discrimination.
- Strict dress code is maintained in the college campus. Faded jeans and T-shirts are strictly not allowed

- **Boys:** Full Collar formal shirt (Stripes or small check or light plain colored) and Formal Cotton Trouser neatly ironed dress with shirt Tucked in. Shoe is mandatory.
- **Girls:** Chudidhars, long tops with sleeves (scarf is mandatory).

9. PLACEMENT & TRAINING

The mission of the **Department of Placement & Training (PAT)** is to foster an environment which will create opportunities for student success by engaging students and other members of the VCE community in processes & programs which support learning, leadership and career development, placements, personal growth, and inclusiveness.

“LEARNING through ENGAGEMENT & INVOLVEMENT”

PAT provides areas of opportunity to balance physical, emotional, and social well-being through participation in recreation, student organizations, on-campus employment, and community service and volunteerism. PAT creates innovative programs to allow students to share and learn the latest technological insights in the college by experiencing programs like industry visits, experts and mentors coming from industry and interacting, internship opportunities etc.

The **Department of Placement & Training (PAT)** is committed to building a sense of community on campus through partnerships with academic departments, the local community, alumni, and business leaders. In addition, personnel of PAT are devoted professionals who strive to develop a meaningful and lasting camaraderie among students.

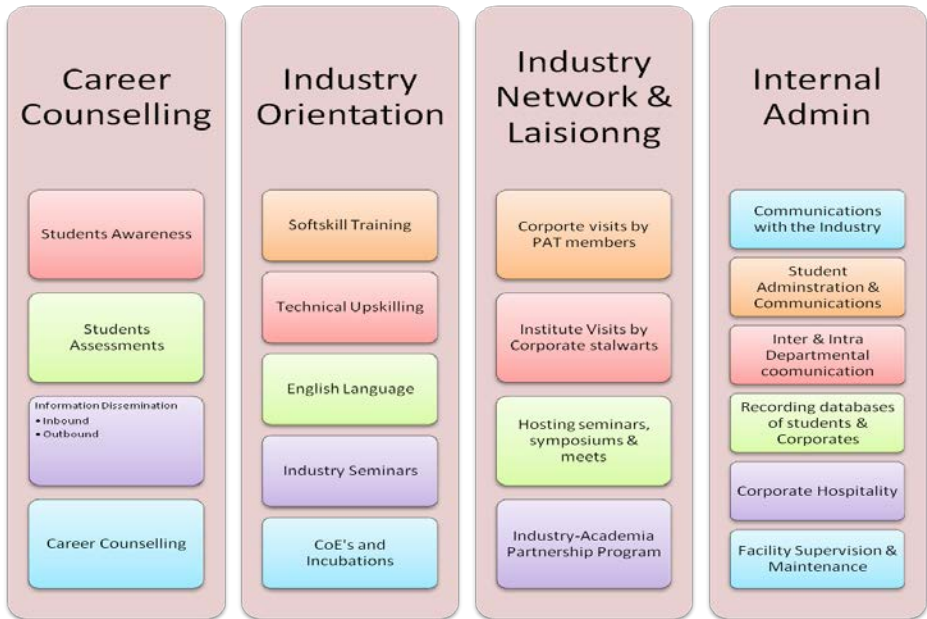
9.1 How important are your Teachers (Professors & members of the faculty) at VCE?

During your years on campus, you will spend more time with your teachers than any other group at VCE. Therefore, professors and members of the faculty play a very large role in shaping your education and your careers. As you make the transition from your high school years to your college years, it pays to learn who your teachers are, and how they are vastly different from 'teachers' you've had in the past.

Your professors & members of the faculty are, of course, here to provide you learning experiences, but they are also here to develop you as professionals. Over the next few years, they will play a big role in nurturing you from being a 'student' to being a distinguished 'professional' in the field you choose to pursue.

There are quite a few things you should know to help you get the most out of your interactions with your teachers. The more you work on developing a professional relationship with them, the more you will be helping yourself to be the best that you can be in your career.

Role of PAT – A Snapshot



Here are some tips:

Always attend class...don't skip classes! The MOST IMPORTANT thing you can do to make sure you do well in a class is to BE THERE. Professors are much more likely to work with you if you are having trouble with the material, if he or she knows you have been coming to class and making an effort to learn.

Become a 'professional learner'. Come to class with an attitude of "I want to learn this material for my future", versus "just showing up". And don't fall into the trap of thinking "why am I attending this class: I'll never use this stuff in the future!" That is a huge mistake! Take it from just about anybody that has ever graduated from college: you have no idea what your future really holds, and the material you're being taught is there to prepare you for whatever will come your way many years from now.

Interact with your professors & faculty members. Let them know you care. Teachers want to help you to become distinguished professionals over the course

of your career. As one professor puts it, "our legacy to our students goes far beyond what we cover in the material of the classroom". Make sure your professor knows that you want to achieve that goal too! Thus, you should view coursework such as projects and homework as an opportunity for you to demonstrate your professional approach, and to show your professor that you understand the material, and how important it is.

Another way of interacting with your professors- make sure to talk to them if you are having trouble with the material in a course or if you received a bad grade on a test or assignment.

Your professors want to get to know you - and this is another great way to show them you care and you want to do well. Visit during College hours, or make appointments to come and talk to them. Keep in mind, their schedules can be pretty hectic most of the time, so don't wait until the last minute (like right before a test) to talk to them.

As you will learn, professors want to help you succeed, and spending one-on-one time to help you master course material can be very rewarding.

Ask your professors about their work outside the classroom. You will discover a fascinating world of research and development work that may very much pique your interest in a career path for yourself.

Plus, it's no secret that professors love to talk about their research.

Along this line, remember too that in the future you may seek support from your professors (such as getting letters of recommendation for higher studies, scholarships or landing that perfect job)! The more your professor knows about you, the more he or she will be able to convey how you are an outstanding engineer/manager and professional and why you should be given the fullest consideration for whatever it is you seek in your professional development. Altogether, your relationship with your professors & faculty members at VCE should never be limited to 'coming to class and getting a grade'. There is much more to be gained. You should view your interaction with them as a great opportunity to grow in many ways both academically and professionally. Doing so will pay off greatly over the course of your career.

9.2. Counselling Cell

The Counselling Cell, an integral part of VCE's PAT, is a student support service intended to help students adapt and make the best use of their learning environment.

The Cell recognizes the fact that the transition between school, college and into a career-oriented environment can lead to stress.

Counselling will be offered to all the students of the Institute in an attempt to help the individual cope with the demands of a complex society and find his/her place in it. It is common knowledge that when students have problems that are unresolved, it reflects in their attendance, academic performance and ultimately with their personality development.

The Dean and other Students Coordinators of the Cell, who may be contacted at **placement@vardhaman.org**, will attempt to provide a nurturing environment wherein each student will be empowered to face life challenges and move ahead to achieve his/her academic as well as life goals. A booklet on learning skills, prepared by the Cell, has been appended to help students to concentrate on their studies.

Areas of counseling:

The Counselling Cell will provide counselling in the following three areas:

Academic Counselling	Career Counselling	Personal Counselling
<ul style="list-style-type: none"> ▪ Poor study skills ▪ Dropping grades ▪ Low attendance ▪ Exam stress ▪ Choice of specialization 	<ul style="list-style-type: none"> ▪ Choice of career ▪ Higher studies ▪ Jobs ▪ Using psychometric tests to assess interest, aptitude, achievement, personality, value etc. 	<ul style="list-style-type: none"> ▪ Relationship problems within or outside family ▪ Loneliness ▪ Stress, anxiety and coping ▪ Substance abuse (preventive, non-clinical) ▪ Communication problem ▪ Adjustment problem ▪ Emotional support ▪ Handling anger ▪ Value clarification ▪ Negative thinking or low self esteem

9.3. Training & Placement

The Training & Placement Cell complements the collective efforts of the Training & Placement Team and Members of Faculty by organizing value-added programs and providing placement opportunities to students. It acts as one of the major

interfaces with the corporate sector and helps in developing the industry-academia inter-relationship.

9.3.1. Special programs Skill upgradation

❖ Campus Orientation Training (SDC)

PAT organizes the industry oriented training in coordination with Skill Development Centre (SDC) to enhance the employability skills of the students. The training modules include numerical ability and aptitude development, logical reasoning, verbal & non-verbal communications skills and technical skill development. It is an extensive training delivered by the experienced and expert members of SDC faculty.

❖ Industry Incubation

At VCE, the PAT recognizes special and critical technology skills required by the industry and through constant endeavor it is the prerogative of PAT to organize industry tie-ups and Centre of Excellence (CoE) for incubation of right kind of technology skills in students making them industry ready. Technology skills like ANSYS (for ME, CE & EEE), Python, R Programming, Robotic Process Automation, Salesforce and PEGA are specially identified to be implemented in the form of CoE or Incubation Centers in VCE.

❖ Foreign Language

Identifying enormous employability opportunity for young engineers in our country, PAT is in the process of organizing the capacity building by having the foreign language training at the campus. We have the BEC (Cambridge Certification in English) training being imparted to all freshman engineers. We are exploring the opportunity for implementing the Japanese training also.

9.3.2. Guidelines for PAT Enrolment

- The Institute can only arrange for campus interview but cannot assure placement. Since the selection is done directly by the company personnel, a candidate has to secure a job by virtue of his / her own merit. Therefore, Placement cannot be claimed by students under any circumstances.
- Students failing to conform to the minimum requirement of attendance in classes, as clarified above, are not entitled to appear for campus interview. Students involved in any breach of discipline are also liable to be debarred from appearing for campus interview.
- Minimum criterion for students for appearing in the campus interview is 60% marks throughout their academic career (i.e., in 10-class, 10+2, graduation and in each semester of the present course) as required normally by the Industry. This criterion may be higher for some other industries.

- A student may walk out of any campus recruitment programme after attending the pre-placement talk (PPT) even after confirming participation. But once a student decides to complete further rounds, he / she, if finally selected, would not be considered for any recruitment programme in future.
- A student is entitled to be considered for one job only. Once a student is offered a job against any placement programme organized by the Training & Placement Cell, he / she would not be considered in future for any recruitment programme. Students, however, are entitled to one / more jobs only in case of "Day 1" and "Dream Options" programs. In such programs when there is more than one company, students are allowed to appear for all the companies provided they fulfil the requisite criteria fixed by the concerned companies.

10. ANTI-RAGGING COMMITTEE

Ragging is an act which is likely to cause insult / annoyance / fear / apprehension / threat / intimidation / outrage of modest / injury to students. This is a heinous crime which is uncivilized and demonic. There are instances when some psychological weak students have committed suicides in engineering colleges because of ragging. Ragging is prohibited on the campus and off the campus.

Punishment in case of ragging other student and that in case I become involved in any manner in any ragging case I am liable for any punishment, including:

- Cancellation of Admission
- Suspension from attending classes
- Withholding / withdrawing scholarship / fellowship and other benefits
- Debarring from appearing for any test / examination or other evaluation process.
- With holding results
- Debarring from representing the institution in any national or international meet, tournament, youth festival etc.
- Suspension and expulsion from the hostel
- Rustication from the institution for periods varying from 1 to 2 academic years
- Expulsion from the institution and consequent debarring from admission to any other institution.
- Rigorous imprisonment upto three years (by Court of Law) etc.

The stringent act of legislation and punishment for indulging in ragging are as follows:

1	Teasing or embarrassing or humiliating a student	Imprisonment upto 6 months or a fine upto Rs.1,000/- both
2	Assault or use of criminal force or criminal intimidation	Imprisonment upto 1 year or a fine upto Rs.2,000/- or both
3	Wrongful restraint or wrongful confinement or causing hurt	Imprisonment upto 2 years or a fine upto Rs.5,000/- or both
4	Causing grievous hurt of kidnapping or abducting or committing rape or committing unnatural offence	Imprisonment upto 5 years of a fine upto Rs.25,000/- or both
5	Causing death or abetting suicide	Imprisonment for life or for a term upto 10 years with fine upto Rs.50,000/- or both

10.1 Anti-Ragging Committee

S.No.	Actual Designation	Designation in the committee	Member Name
1	Principal and Professor of CS	Chairperson	Dr. S. Sai Satyanarayana Reddy
2	Professor and Controller of Examination	Member	Dr. H. Venkateshwara Reddy
3	Professor and Head of EC	Member	Dr G.A.E Satish Kumar
4	Professor and Head of MBA	Member	Dr. V. Sreehari
5	Professor and Head of ME	Member	Dr. B.Subbaratnam
6	Professor and Head of CS	Member	Dr A Rajanikanth
7	Professor and Head of IT	Member	Dr. M. Gopi Chand
8	Professor and Head of CV	Member	Dr. G. Mallikarjuna Rao
9	Professor and Head of EE	Member	Dr. N. Kiran Kumar
10	Head of FE and Professor of EC	Member	Prof. S. Rajendar
11	Associate Dean (Student Affairs)	Member	Prof. Md. Asif
12	Professor of ME	Member	Prof. N. Srinivas Reddy
13	Assistant Professor of Freshman Engineering	Member	Mr. D. Manoj Reddy

S.No.	Actual Designation	Designation in the committee	Member Name
14	Hostel Warden	Member	Mr. Rajeshwar Reddy
15	Hostel Warden	Member	Ms. Hema Sri
16	Office Superintendent	Member	Mr. A. Ramaiah
17	Police Department	Member	Mr. Praveen Reddy
18	Parent – I B TECH	Member	
19	Parent - II B. TECH	Member	Mr. M Ashok Kumar
20	Parent - III B. TECH	Member	Mr. D Achyutha Deva Rayulu
21	Parent - IV B. TECH	Member	Mr. D. Srinivasa Rao
22	Student – I B. TECH	Member	
23	Student - II B. TECH	Member	Mr Vaddam Shravanth
24	Student - III B. TECH	Member	Mr B Arun Kumar
25	Student - IV B. TECH	Member	Mr. N. Sri Charan

11. DISCIPLINARY COMMITTEE

S. No.	Actual Designation	Designation in the committee	Member Name
1	Principal	Chairperson	Dr. S. Sai Satyanarayana Reddy
2	COE and Professor of CS	Member	Dr. H. Venkateshwara Reddy
3	Professor and Head of CS	Member	Dr. A. RajaniKanth
4	Professor and Head of IT	Member	Dr. M. Gopi Chand
5	Professor and Head of EC	Member	Dr. G. A. E. Satish Kumar
6	Professor and Head of EE	Member	Dr. N. Kiran Kumar
7	Professor and Head of ME	Member	Dr. B. Subbarathnam
8	Professor and Head of CV	Member	Dr. G. Mallikarjuna Rao
9	Head of FE and Professor of EC	Member	Prof. S. Rajendar

S. No.	Actual Designation	Designation in the committee	Member Name
10	Associate Dean (Outreach)	Member	Prof. Y Pandu Rangaiah
11	Associate Dean (CDC)	Member	Prof. Vivek Kulkarni
12	Associate Dean (Student Affairs)	Member	Prof. Md. Asif
13	Hostel Warden	Member	Mr. Rajeshwar Reddy
14	Hostel Warden	Member	Ms. Hema Sri
15	Assistant Professor of Freshman Engineering	Member	Mr. D. Manoj Reddy

12. WOMEN PROTECTION CELL

S. No.	Actual Designation	Designation in the committee	Member Name
1	Professor of H&S	Chairperson	Dr. P. Sarah
2	Professor of H&S	Member	Prof. V. Kavitha
3	Associate Professor, MBA	Member	Ms. K. Jaahnavi
4	Advocate / High Court	Member	Mr. T. Srikanth Reddy
5	Non. Govt. Organization Member	Member	Ms. Madhavi Chandra
6	Associate Dean (Student Affairs)	Member	Prof. Md. Asif

13. STUDENT MENTORING SYSTEM

Vardhaman College of Engineering considers mentoring a significant facet in the teaching / learning process. Mentoring plays a crucial role to bridge the gap between teacher expectations and student outcomes in the learning process. The primary purpose of mentoring is to hone the professional skills of the students and to help them attain a greater understanding of their discipline specific courses. In addition to this, students are given opportunity to interact with the mentors.

In order to provide focused and effective counseling, a mentor is allotted to a group of 15 to 20 students.

S.No	From Roll No. to Roll No.	Name of the Student Mentor	Mobile Number / Email ID
1.	19881A0501-515	Mr. S. P. Kishore	9885365302 spkishore20582@vardhaman.org
2.	19881A0516-530	Ms. V. Kavitha	9441044496 v.kavitha@vardhaman.org
3.	19881A0531-545	Dr. Soumyaranjan Mohapatra	8018965334 s.mohapatra@vardhaman.org
4.	19881A0546-560	Ms. P. Prasanna	8978193634 Prasanna@vardhaman.org
5.	19881A0561-575	Mr. M. Siddhartha	9492925438 siddhureddy7@vardhaman.org
6.	19881A0576-590	Dr. D. Srinivas Reddy	9948265021 d.srinivasreddy@vardhaman.org
7.	19881A0591-5A5	Dr. K. Basanth Kumar	9866996949 basanthkumar@vardhaman.org
8.	19881A05A6-5C0	Dr. B. Chandra Sekhar Rao	9000434345 drchandrasedharb@vardhaman.org
9.	19881A05C1-5D5	Dr. Shankaraiah Pagilla	9948942010 shankarpagilla@vardhaman.org
10.	19881A05D6-5F0	Mr. K. Madhusudhan Reddy	9492437756 k.madhusudhanreddy@vardhaman.org
11.	19881A05F1-5G5	Dr. Biplab Kr Chatterjee	7003458161 biplabchatterjee@vardhaman.org
12.	19881A05G6-5J0	Dr. K. Pooja	8142584441 poojakandimalla@vardhaman.org
13.	19881A05J1-5K5	Dr. A. Kishore Kumar	9849459754 kishore.angajala@vardhaman.org
14.	19881A05K6-5M0	Mr. G. Ravi Kumar	9912148256 ravikumar.gande@vardhaman.org
15.	19881A05M1-5N5	Ms. Y. Sridevi	9963431587 ysridevi@vardhaman.org
16.	19881A05N6-5Q0	Ms. V. Priyanka	9550685230 v.priyanka@vardhaman.org
17.	19881A1201-1215	Dr. V. Munisekhar	9618392466 munisek@vardhaman.org
18.	19881A1221-1235	Mr. E. Ravi Kumar	9885663920 ravikumar.e@vardhaman.org
19.	19881A1241-1255	Mr. P. Jeevan Kumar	9985027773 p.jeevankumar@vardhaman.org
20.	19881A1216-1220 19881A1236-1240 19881A1256-1260	Dr. Manjeet Kumar Singh	9849946083 singhmanjeet@vardhaman.org
21.	19881A1261-1275	Mr. K. Anvesh	9494016961 anvesh@vardhaman.org
22.	19881A1281-1295	Ms. K. Mamatha	9603003550 k.mamatha@vardhaman.org
23.	19881A12A1-12B5	Dr. Manu S. Kurup	7995465438 manuskurup@vardhaman.org
24.	19881A1275-1280 19881A1296-12A0 19881A12B6-12C0	Mr. B. Chandra Sekhar	9948655589 b.chandrasekhar@vardhaman.org

S.No	From Roll No. to Roll No.	Name of the Student Mentor	Mobile Number / Email ID
25.	19881A0401- 415	Dr. S. Shashi Devi	9676101151 deviphysics@vardhaman.org
26.	19881A0416-430	Mr. S. Jana Reddy	9885667222 sunki.janareddy@vardhaman.org
27.	19881A0431-445	Dr. O. Kranthi Priya	9849992925 drkranthi@vardhaman.org
28.	19881A0446-460	Mr. K. Santosh Reddy	9908450450 k.santoshreddy@vardhaman.org
29.	19881A0461-475	Dr. P. Sarah	9440008222 p.sarah@vardhaman.org
30.	19881A0481-495	Mr. M. Nagarjuna	9908555220 malladhinagarjuna@vardhaman.org
31.	19881A04A1-4B5	Mr. D. Praveen Kumar	9985822005 praveenkumar7.d@vardhaman.org
32.	19881A0475-480 19881A0496-4A0 19881A04B6-4C0	Dr. Sridarala Ramu	9441184668 sridaralaramu@vardhaman.org
33.	19881A04C1-4D5	Dr. J. Krishna Chaitanya	9885052980 j.krishnachaitanya@vardhaman.org
34.	19881A04E1-4F5	Mrs. M. Lavanya	7893293888 m.lavanya@vardhaman.org
35.	19881A04G1-4H5	Mrs. M. Madhavi	8106555909 ksk.madhavi@vardhaman.org
36.	19881A04D6-4E0 19881A04F6-4G0 19881A04H6-4J0	Mr. V. Lakshmi Narayana	9951464075 vlnarayana@vardhaman.org
37.	19881A04J1-4K5	Ms. C. Padmini	8897731782 c.padmini@vardhaman.org
38.	19881A04L1-4M5	Dr. Hathiram Nenavath	9000747143 hathiram@vatdhaman.org
39.	19881A04N1-4P5	Dr. Joseph Anthony Prathap	8184905638 japtuhi1116@vardhaman.org
40.	19881A04K6-4L0 19881A04M6-4N0 19881A04P6-4Q0	Dr. Seema Devi	8589894123 drseema@vardhaman.org
41.	19881A0201-215	Dr. B. Harish	9494010254 harish.balaga@vardhaman.org
42.	19881A0221-235	Dr. K. Muralidhar Goud	6301667259 muralidhar.3in1@vardhaman.org
43.	19881A0241-255	Mr. D. Srinivasulu	7702299755 dsrinivasulu@vardhaman.org
44.	19881A0216-220 19881A0236-240 19881A0256-260	Dr. Nilakantha Tripathy	8117833619 n.tripathy@vardhaman.org
45.	19881A0261-275	Ms. B. Vijayalakshmi	8374944411 b.vijayalakshmi@vardhaman.org
46.	19881A0281-295	Ms. S. Keerthi Sonam	9701746514 keerthi@vardhaman.org
47.	19881A02A1-2B5	Ms. A. Manasa Devi	8985740313 a.manasa@vardhaman.org

S.No	From Roll No. to Roll No.	Name of the Student Mentor	Mobile Number / Email ID
48.	19881A0275-280 19881A0296-2A0 19881A02B6-2C0	Dr. V. Sudharshan	9849401849 sudarshan@vardhaman.org
49.	19881A0301-320	Mr. V. Sreedhar	9985454780 v.sreedhar@vardhaman.org
50.	19881A0321-340	Mr. S. M. Gangadhar Reddy	9966197483 gangadhar.8011@vardhaman.org
51.	19881A0341-360	Dr. M. Ashok Kumar	9849406831 mak84@vardhaman.org
52.	19881A0361-380	Mr. P. Rama Krishna	9666660336 er.p.ramakrishna@vardhaman.org
53.	19881A0381-3A0	Mr. B. Dhanaraj	9441381799 dhanaraj2205@vardhaman.org
54.	19881A03A1-3C0	Mr. P. Sarkar	9177304920 pallab55@vardhaman.org
55.	19881A0101-120	Ms. Durga Sri Lakshmi Hari	8885811406 durgasrilakshmihari@vardhaman.org
56.	19881A0121-140	Ms. M. Harika	8332062289 harika@vardhaman.org
57.	19881A0141-160	Dr. B. Chandra	9701723217 hari2006chandra@vardhaman.org

14. TRANSPORTATION FACILITY

The College runs a fleet of 39 buses connecting the College with important points in Hyderabad city to meet the needs of the Students and Staff.

S. No.	Starting Point	Name of the Driver & Mobile No.
1	Nizampet	Mr. Venkat Reddy, 9505739123
2	Alwal	Mr. M. Shyam Sunder, 9989758418
3	ECIL	Mr. Anil Kumar, 9912313859
4	Uppal	Mr. M. Balaji, 9705582646
5	Vanasthalipuram	Mr. M. Venkatesh, 7396967227
6	Dilsukhnagar	Mr. G. Yadaiah, 9866741014
7	Lingampally	Mr. B. Nagendra, 9642801145
8	Nagole	Mr. K. Venkataiah, 9963445666
9	Mehdipatnam	Mr. P. Ramchander, 9666395568
10	Shadnagar	Mr. Chenna Keshav, 7207666794

15. IMPORTANT CONTACT DETAILS

CEO Office	
Dr K. Mallikharjuna Babu Director & CEO	ceo@vardhaman.org
Principal Office	
Dr. S. Sai Satyanarayana Reddy Principal	principal@vardhaman.org 9502653333
Administration	
Sri. N. Hanuman Reddy Administrative Office-Admissions	hanuman@vardhaman.org 9885583649
Sri. M. Vinay Reddy Administrative Office-Hostel	vinaykumarreddy@vardhaman.org 9000517939
Sri. A. Ramaiah Scholarships	ramaiahmula@vardhaman.org 9000517939
Examination Branch	
Dr. H. Venkateshwara Reddy Controller of Examinations	coe@vardhaman.org 9491872367
Mr. K. L. Raghavender Reddy Additional Controller of Examinations	acoe@vardhaman.org 9676251666
Academics	
Dr. J. V. R. Ravindra Dean (Academic)	deanacademics@vardhaman.org 9440114765
Dr. P. Nageswara Rao Dean (Quality Assurance)	iqac@vardhaman.org 9908843163
Dr. P. Martin Jabaraj Dean (R&D)	deanrnd@vardhaman.org 9908843163
Prof. Y. Pandu Rangaiah Associate Dean (Outreach)	assocdeanoutreach@vardhaman.org 9550070033
Prof. Vivek Kulkarni Associate Dean (Competency Development)	Adean.cdc@vardhaman.org 9866758870
Prof. Md. Asif Associate Dean (Student Affairs)	Adean.studentaffairs@vardhaman.org 9701526805
Prof. S. Rajendar Head, Freshman Engineering (I Year)	hod.freshman@vardhaman.org 9885570842
Prof. A. Rajanikanth Head, Computer Science and Engineering	hodcse@vardhaman.org 9978967155

Academics	
Dr. M. Gopi Chand Head, Information Technology	hodit@vardhaman.org 9849042448
Dr G. A. E Satish Kumar Head, Electronics and Communication Engineering	hodece@vardhaman.org 7032651704
Dr. N. Kiran Kumar Head, Electrical and Electronics Engineering	hodeee@vardhaman.org 9441276970
Dr. B. Subbaratnam Head, Mechanical Engineering	hodme@vardhaman.org 9866372101
Dr. G. Mallikarjuna Rao Head, Civil Engineering	hodcivil@vardhaman.org 9963740850
Dr. V Sreehari Head, Master of Business Administration	hodmba@vardhaman.org 9550166070
Training & Placement Office	
Sri. Manish K. Srivastava Dean, Corporate Relations, Training and Placement Officer	pat@vardhaman.org 7995107777
Transport	
Sri B.V.Muralidhar Rao Transport Manager	transport@vardhaman.org 9959224954

16. STUDENT CORNER

Information is made ubiquitous for both parents and students at www.studentscorner.vardhaman.org. All-inclusive data of students is posted on the website. Cumulative attendance report of the student, performance in the mid semester examinations, credit register and etc., is detailed on the website. Besides, the topics of the syllabus covered in every class are updated. Furthermore, particulars of notifications, examination registration, course work registration, and applying for required certificates can be done online through student's corner. In a nutshell 'Student Corner' furnishes all academic information requisite for parents and students. For accessing student corner, each student is provided with web access key to login using registration number of the student. Snapshots of the Website and the link to the student corner is shown below:



Website: <https://vardhaman.org/>



Student Portal: <http://studentscorner.vardhaman.org/>



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD
Autonomous institute affiliated to JNTUH

CALENDAR OF EVENTS

I YEAR B. TECH.FOR THE ACADEMIC YEAR 2019-2020

SEM	SNO.	EVENT	DATE(S)
ODD	1.	Course registration of I Year I Semester	02-08-2019 (FRI)
		Induction Programme	02-08-2019 (FRI) to 15-08-2019 (THU)
		Commencement of Classes for I Year I Semester	16-08-2019 (FRI) to 14-10-2019(MON)
	2.	CIE - Test#1	15-10-2019 (TUE) to 19-10-2019(SAT)
	3.	Dussehra Holidays	03-10-2019(THU) to 09-10-2019 (WED)
	4.	Last working day	28-11-2019 (THU)
	5.	CIE - Test#2	29-11-2019 (FRI) to 04-12-2019(WED)
	6.	Lab Tests	05-12-2019 (THU) to 07-12-2019 (SAT)
	7.	Preparation Holidays	09-12-2019 (MON) to 13-12-2019 (FRI)
	8.	Semester End Examination	14-12-2019 (SAT) to 23-12-2019 (MON)
EVEN	11.	Course registration of I Year II Semester	02-01-2020 (THU)
		Induction Programme	02-01-2020 (THU) to 08-01-2020(WED)
		Commencement of Classes for I Year II Semester	09-01-2020 (THU) to 25-02-2020(TUE)
	12.	CIE - Test#1	26-02-2020 (WED) to 01-03-2020 (MON)
	13.	Last working day	25-04-2020 (SAT)
	14.	CIE - Test#2	27-04-2020 (MON) to 01-05-2020 (FRI)
	15.	Lab Tests	02-05-2020 (SAT) to 05-05-2020 (TUE)
	16.	Preparation Holidays	06-05-2020 (WED) to 09-05-2020 (SAT)
	17.	Semester End Examination and Supplementary Examinations - I/I & I/II	11-05-2020 (MON) to 23-05-2020 (SAT)
	18.	Vacation for students	25-05-2020 (MON) to 13-06-2020 (SAT)
	19.	Vacation for faculty (Only for eligible faculty)	25-05-2020 (MON) to 13-06-2020 (SAT)
	20.	Course registration of II Year I Semester	15-06-2020 (MON)



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD
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LIST OF HOLIDAYS

I YEAR B. TECH.FOR THE ACADEMIC YEAR 2019-2020

S No.	Holiday Name	Date
1.	Bonalu	29-07-2019 (MON)
2.	Eidul Azha (Bakrid)	12-08-2019 (MON)
3.	Independence Day	15-08-2019 (THU)
4.	Sri Krishnashtami	24-08-2019 (SAT)
5.	Vinayaka Chavithi	02-09-2019 (MON)
6.	Muharram	10-09-2019 (TUE)
7.	Ganesh Visarjan	12-09-2019 (THU)
8.	Bathukamma Starting Day	28-09-2019 (SAT)
9.	Mahatma Gandhi Jayanthi	02-10-2019 (WED)
10.	Durga Ashtami	06-10-2019 (SUN)
11.	Dussehra	08-10-2019 (TUE)
12.	Diwali	27-10-2019 (SUN)
13.	Eid Miladun Nabi	10-11-2019 (SUN)
14.	Guru Nanak Jyanathi	12-11-2019 (TUE)
15.	Christmas	25-12-2019 (WED)
16.	Boxing Day	26-12-2019 (THU)
17.	Bhogi	14-01-2020 (TUE)
18.	Sankranti	15-01-2020 (WED)
19.	Republic Day	26-01-2020 (SUN)
20.	Maha Shivratri	21-02-2020 (FRI)
21.	Holi	10-03-2020 (TUE)
22.	Ugadi	25-03-2020 (WED)
23.	Sri Rama Navami	02-04-2020 (THU)
24.	Babu Jagjivan Ram Jayanti	05-04-2020 (SUN)
25.	Good Friday	10-04-2020 (FRI)
26.	Dr. Ambedkar Jayanti	14-04-2020 (TUE)
27.	Id-Ul-Fitr (Ramzan)	24-05-2020 (SUN)
28.	Following Day of Ramzan	25-05-2020 (MON)



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD
Autonomous institute affiliated to JNTUH

**ACKNOWLEDGEMENT AND DECLARATION
(Student Copy)**

I have received a copy of student handbook and I hereby solemnly affirm that I have carefully gone through the terms mentioned in the student handbook and I agree to abide by all the rules and regulations including code of conduct, attendance requirements, detention policies, etc., mentioned in the handbook.

I follow these instructions mentioned in the handbook for my own benefit and improvement.

I also understand that if I fail to comply with these terms, I shall be liable for legal and institutional action as per college norms.

I shall be responsible for knowing and adhering to the terms and conditions which may be changed from time to time set forth by the college competent authorities.

Date:

Place:

Name of the Student : _____

Branch : _____

Signature of the Student : _____

Name of the Parent/Guardian : _____

Contact Number : _____

Residential Address : _____

Signature of the Parent : _____



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD
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ACKNOWLEDGEMENT AND DECLARATION
(Office Copy)

I have received a copy of student handbook and I hereby solemnly affirm that I have carefully gone through the terms mentioned in the student handbook and I agree to abide by all the rules and regulations including code of conduct, attendance requirements, detention policies, etc., mentioned in the handbook.

I follow these instructions mentioned in the handbook for my own benefit and improvement.

I also understand that if I fail to comply with these terms, I shall be liable for legal and institutional action as per college norms.

I shall be responsible for knowing and adhering to the terms and conditions which may be changed from time to time set forth by the college competent authorities.

Date:

Place:

Name of the Student : _____

Branch : _____

Signature of the Student : _____

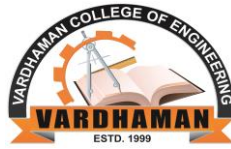
Name of the Parent/Guardian : _____

Contact Number : _____

Residential Address : _____

Signature of the Parent : _____

Statutory Declaration under Section 4(1) (b) of the RTI ACT 2005



VARDHAMAN COLLEGE OF ENGINEERING (AUTONOMOUS)

Approved by AICTE, New Delhi, Accredited by NAAC, Bangalore
Shamshabad– 501 218, Hyderabad

Address of the Institute

Name of the College : Vardhaman College of Engineering (Autonomous)
Address : Kacharam(Village), Shamshabad - 501218, Hyderabad
Contact No : +91 9502653333, 08413-253201
Email ID : principal@vardhaman.org, info@vardhaman.org

About the Institute:

Vardhaman College of Engineering (VCE) was established in the year 1999. VCE currently offering 6 UG programs (B. Tech) and 7 PG programs (M. Tech & MBA) with student toll upto 4500. The college is approved by AICTE and has permanent affiliation with JNTUH University. It has been recognized by the UGC and hold Autonomous status since 2014 and accreditation from NAAC with CGPA 3.24 on a four point scale. Five of its UG Programs are accredited by NBA. NIRF ranked VCE in top 151 to 200 Engineering Colleges of India in 2017 and 2018 Rankings. VCE is accomplished to have recognition by the UGC in accordance of Colleges with Potential for Excellence (CPE). The Department of Science and Technology (DST) recognized it under its aegis of Scientific Industrial Research Organization (SIRO). The college has participating every year in CII survey promoted by AICTE. It is an ISO 9001:2015 certified institution. The college is graded AAA+ by Careers360 magazine successively during the past three years.

VCE, Autonomous Intuition outlined the significance of Out Come Based Education for better dissemination of the benefits of Technology.

The college is Wi-Fi enabled and high internet band width is provision in each laboratory and class room with LCD projectors with effective power backup. All laboratories are well equipped with the sophisticated equipment and software and all of them are Air Conditioned. VCE has E-class rooms, two Air-conditioned sprawling auditoria with 500 and 1500 capacity are available with ICT facility. Besides canteen facility serving hygienic food and two vivid Hostel blocks provided separately for boys and girls. Besides VCE has been earmarking provision to avail the infrastructure made to students who are differently abled. In addition VCE has extraordinary sports infrastructure including cricket stadium equipped with floodlights facility and indoor stadium.

The college with focus on Industry Centric quality education has entered into a large number of Memorandum of Understanding (MOUs') with premier industries as part of institutional drive has formalized student internship as intervention programs besides regular academia.

VCE has worked out the strategies meticulously for campus placements. It has a placement and training center for designing the student career planning where by scheduling of the placements is enabled and expert guidance is provided to students to explore and meet the

cutting edge competition in the industry. To name a few premiers like Capgemini, TechM, Polaris, Flipkart, Mind Tree, Amazon, UHG, NTT DATA and many others were in line with the steady fast trend achieved by the college. The efforts of VCE were appreciated by TASK, a department of Telangana State Government has awarded the college as the Best Institution in providing campus placements offers to more than 80% of eligible students.

VCE with a view to enlarge the scope for industrial extant has launched the 'SEED' Start Up facilitating for launching 'Incubation Centers' which in turn caters the needs of industrial entrepreneurs enabling them the services which are availed for the purposes of trading and franchising. National FDP in Entrepreneurship program was funded by EDI India for hosting the event where in the faculty team from VCE has won 1st prize for its best performance.

VCE stresses and extending expert guidance necessity for the R&D Patent titles by issuing grant in license to the faculty where as the college has already in possession of substantially good number of patents. VCE has adequate number of Research oriented labs with good connectivity and access to infrastructure. VCE with a view to provide an enhanced scope for carrying out research in disciplinary and inter disciplinary domains of its faculty has requested to approve consisting a Research Center in the college from JNTUH and OU.

VCE strictly following the guidelines of AICTE and NBA in terms of FSR, Faculty Retention, Cadre Ratio and maintained an appreciable percentage of Doctorates and also incumbency of Women Faculty.

VCE has retained a unique privilege rare of its kind through holding the 'International Conference on Transformation in Engineering Education – ICTIEE2017' during early 2017. e-Summit Hyderabad was conducted at VCE during 21st and 22nd August 2018 to encourage students to become future entrepreneurs.

The college equally encourages the students undergoing certification courses from centers imparting lateral training in their respective areas of specialization. To name a few companies of repute like IBM, National Instruments, Microsoft, Sales Force, ARK Solutions, FACE, COIGN, etc., have imparted practical training to the students as part of industry centric awareness among them. VCE took the lead and collaborated with the Cambridge English Language Assessment to train the students to qualify in Business English Certificate (BEC) and the college has also been shortlisted for best 25 preparation centers award for higher education across South Asia.

The management, faculty and students of VCE extended support to societal service and needs. IEEE EPICS, a unique program embarking upon the pursuit of engineering inputs provided by the faculty and delivering the resources to benefit the community at large. Rural Women Technological Park (RWTP) is a DST sponsored project to uplift the rural women and safeguarding their avocations and petty trades. As part of NSS activities under taken by VCE in the areas of assisting the women by providing them with small time trades like stitching, school children to acquaint with computer knowledge besides donating computer systems to the nearby government schools. As part of carrying out the mission SwachhBharath in letter

and spirit the college has brought in many cleansing workouts in the campus for a free zone of serenity and healthy ambiance.

VCE has enrolled number of students, faculty under NPTEL to take up the certification courses. VCE has ranked grade 'A' and grabbed 'Gold Medals' and 'All India Toppers'.

The college takes its immense pleasure to join the National Institutional Ranking Frame Work (NIRF) to be part of its educational forums and avail the terms of references mandated by the NIRF.

Innovation Cell, Ministry of HRD, Government of India certified VCE has established Intuition Innovation Council as per the norms.

Vision, Mission & Quality Policy

Vision

To be a pioneer institute and leader in engineering education to address societal needs through education and practice.

Mission

- To adopt innovative student centric learning methods.
- To enhance professional and entrepreneurial skills through industry institute interaction.
- To train the students to meet dynamic needs of the society.
- To promote research and continuing education.

Quality Policy

We at Vardhaman College of Engineering, endeavor to uphold excellence in all spheres by adopting best practices in effort and effect.

Working hours of the office:**Monday to Saturday:**

Office : 08:30AM to 05:00PM

Lunch Time : 01:00 PM to 02:00 PM

Visiting Hours : 09:30 AM to 04:30 PM on all working days

Sunday and Second Saturday are Holidays

Contact Information:

Name	Designation	Email ID	Mobile No
Dr. S.Sai Satyanarayana Reddy	Principal	principal@vardhaman.org	9502653333
Mr. N. Hanuman Reddy	Head of Administrative Office	hanuman@vardhaman.org	9885583649
Mr. Manish K. Srivastava	Dean, Corporate Relations, Training And Placement Officer	pat@vardhaman.org	9007077333
Dr. H. Venkateswara Reddy	Controller of Examinations	coe@vardhaman.org	9491872367
Dr. JVR Ravindra	Dean Academics	jvrravindra@gmail.org	9985306510
Dr. P. Sarah	Dean R & D	p.sarah@vardhaman.org	9440008222
Dr. P. Nageswara Rao	Coordinator IQAC	iqac@vardhaman.org	9908843163
Dr. RajaniKanth Aluvalu	Head, Dept of Computer Science and Engineering	hodcse@vardhaman.org	8688901564
Dr. V Muni Sekhar	Head, Dept of Information Technology	hodit@vardhaman.org	9618392466
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Dr.Kiran Kumar N	Head, Dept of Electrical and Electronics Engineering	hodeee@vardhaman.org	8688901567
Dr. G. Mallikarjuna Rao	Head, Dept of Civil Engineering	hodcivil@vardhaman.org	9963740850
Dr. V Sreehari	Head, Dept of Master of Business Administration	hodmba@vardhaman.org	9550166070
Dr. D.Srinivas Reddy	Head, Dept of Freshman Engineering	hod.freshman@vardhaman.org	8688901570
Prof. Y Pandu Rangaiah	Associate Dean(outreach)	y.pandurangaiah@vardhaman.org	9550070033
Mr. Md. Asif	Associate Dean(Student Affairs)	asif_eee@vardhaman.org	9701526805
Prof. Vivek Kulkarni	Associate Dean, CDC	vivek@vardhaman.org	9866758870
Prof. S. Rajendar	Associate Dean Academics	s.rajendar@vardhaman.org	9885570842



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Code of Conduct for Principal

Roles and Responsibilities

1. Leadership:

- Development, alignment and execution of strategic plan
- Monitoring the curriculum implementation
- Instructional and evaluation strategies
- Motivation

2. Culture:

Development and nurturing a balanced, rigorous, positive and safe culture among the stakeholders.

3. Human Resource Management:

Quality faculty and staff

- Recruitment,
- Orientation,
- Development,
- Evaluation, and
- Retention

4. Organizational Management

- Support, manage, and oversee the operations
- Optimal use of resources of the Institution

5. Communication and Relations

Communication, collaboration and engagement with stakeholders

6. Professionalism

- Demonstrate behavior consistent with legal, ethical, and professional standards
- Engage in continuous professional development
- Contribute to the profession.

7. Student Progress

Foster student overall development in line with vision and mission of the institution.

8. Regulatory Compliance

Ensure that information is provided to all regulatory agencies permitting to the institution timely.



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Code of Conduct for Dean Academics

Roles and Responsibilities

- To introduce and implement innovative methods in teaching, learning and evaluation and shall act as Vision Head.
- To coordinate curriculum design, and updating the syllabus.
- To prepare academic calendar containing all details (including holidays)
- To prepare year plan for organizing Seminars/ Guest Lectures / Expert lectures/ Add-on courses/ Student Paper contests/ Exhibitions/ Workshops/ FDPs in consultation with HODs and to monitor proper execution of the programs.
- To oversee the conduct of diagnostic tests to identify slow learners.
- To analyze the results and organize reinforcement classes and report to the Principal/Management.
- To verify the course files and to counsel the faculty.
- To verify the students' attendance registers vis-a-vis lesson plans.
- To monitor the monthly progress reports of the students.
- To assist the principal in organizing the meetings of Governing Body, Academic Council and Boards of Studies.
- To plan, monitor and apprise the Principal regarding the execution of the Academic practices of all the departments.
- To advise and assist HODs in day-to-day discharge of their duties whenever required.
- To monitor all academic activities to fulfill the objectives of autonomous status.

Any other academic work assigned by the Management/ Principal from time to time.



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Code of Conduct for Dean IQAC

Roles and Responsibilities

- Development and application of quality benchmarks/parameters for various academic and administrative activities of the institution;
- Facilitating the creation of a learner-centric environment conducive to quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching and learning process;
- Arrangement for feedback response from students, parents and other stakeholders on quality related institutional processes;
- Dissemination of information on various quality parameters of higher education;
- Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles;
- Documentation of the various programmes / activities leading to quality improvement;
- Acting as a nodal agency of the institution for coordinating quality related activities, including adoption and dissemination of best practices;
- Development and maintenance of institutional database through MIS for the purpose of maintaining /enhancing the institutional quality;
- Development of quality culture in the institution;
- Preparation of the Annual Quality Assurance Report (AQAR)



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Code of Conduct for Dean R&D

Roles and Responsibilities

- To encourage faculty to perform outcome based research
Measurable Outcomes:
 1. Research papers
 2. Research projects
 3. Consultancy
 4. Patents
- To assist departments in establishing research centers with state-of-the-art equipment.
- Organizing the resources to the HODs and research faculty available in the R&D centers.
- Organizing review meetings on the progress of the research projects and consultancy works once in a quarter and to submit a report to the Dean (R&D).
- Interacting with the HODs in fixing the focus areas of research and consultancy assignments opted by the faculty, breaking the research areas into modules and modules into mini projects and major projects.
- Developing a research plan based on the proposals of each of the faculty and the Dean (R&D, Consultancy and IIR).



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Code of Conduct for Controller of Examinations

Roles and Responsibilities

- Year / Semester End Question Paper Correspondence.
- Question bank preparation.
- Payments to the question paper setters.
- Issue of examination notifications and timetables
- Conduction of examinations
- Generation and distribution of question paper on the day of examination.
- Collecting comments from the departments.
- Safe custody of encoded answer scripts.
- Handing over and collection of answer scripts at spot valuation center.
- Making payments at spot center.
- Estimation and procurement of stationery for internal and external year / semester end examinations.
- Preparation of annual budget for examination section.
- Submitting the requirements for the upgradation of examination section.
- Procurement (design and printing) of grade sheets, provisional certificates, consolidated grade sheets.
- Organizing the results committee meetings and publishing of results.
- Organizing the malpractice redressal committee meetings to resolve the malpractice issue.
- Issue of notification for revaluation / recounting / personal verification.
- Getting scripts re-valued.
- Printing and issue of grade sheets, consolidated grade sheets and provisional certificates.
- Publishing final results of examinations
- Organizing graduation day.
- Making correspondence to JNTUH (Affiliating University) in all the aspects.
- Making correspondence to TE, TS in all the aspects.
- Issue of duplicate grade sheets; consolidated grade sheets, provisional certificates and transcripts.
- Addressing students grievances and ensuring of discipline in conduction of examinations.
- Organizing competitive examinations conducted by other institutions.
- Providing service to the organizations in setting question papers and conducting spot valuation.
- Maintenance and repairs of electronics' and reprographic equipment.
- Maintenance and repairs of examination section vehicle.
- Maintenance of accounts related to examination section, stock of equipment and stationery through ledger and daybook.
- Maintenance and adherence of examination section staff establishment rules.
- Execution of duties assigned by the chief controller of examinations time to time.



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Code of Conduct for Placement Officer

Roles and Responsibilities

- Organize comprehensive and continuous in house placement related training programs for students.
- Organize lectures from experts on personality development and soft skills.
- Arrange short term campus readiness training with expert agencies just before the placement season.
- Liaise with agencies for student certifications and internships.
- Correspond with prospective recruiters for placements and build an effective network of potential recruiters and maintain a comprehensive database.
- Explore hiring opportunities in core companies for students.
- Eliciting the feedback from recruiters during placements and share the same with students and HoDs
- Co-ordinate with Heads of the Department on campus recruitment training, mock interviews and assessments.
- Co-ordinate with Training & Placement co-coordinators, administrative staff, and HoDs for logistics arrangement, facilities for campus interviews and smooth execution of placements.
- Timely receipt of offer letters/appointment letters after completing the interviews.
- Distribute appointment letters and collect acceptance letters from the students and handover/ dispatch to employees.
- Invite industry experts and alumni for interactive sessions with students.
- Update the institute website and placement brochure.



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Code of Conduct for Heads of the Departments

Roles and Responsibilities

HODs shall report to the principal regarding various activities and take his guidance and advice in all academic matters. He is solely responsible in all aspects to run the department democratically, giving leadership and directing, monitoring, controlling and checking progress of his department. He is responsible for:

- Planning for department operations, maintenance and development of budgets and submit reports to GB for approval in consultation with Deans and Principal.
- Conducting DDC meetings for academic / laboratory development once in a year.
- Conducting DAC meetings once in a semester to discuss matters of academic interest.
- Submit performance appraisals of faculty and staff
- Preparing and submitting the departmental annual report to principal
- Assigning teaching schedules and workloads to all faculty and staff
- Distributing departmental work by forming appropriate committees with faculty members and assigning duties and responsibilities to run the department effectively, efficiently and democratically regarding.
 - Administration
 - Academic Planning and Development
 - Maintenance and up-keeping
 - Examinations
 - Association activities.
 - Organizing industrial tours / visits
 - Counseling students
 - Training & Placement activities
 - Co and extracurricular works
 - Research and project works
 - Entrepreneur awareness
 - Alumni contacts and others
 - Library books, Journals, relevant to department
 - Organizing expert lectures and add-on courses
- Monitoring faculty in discharging their academic and other duties such as:
 - Preparation of lesson plans and course work schedule
 - Encourage to enhance new skills and techniques
 - Displaying students attendance, internal marks, lab, performance, results
 - Intimating parents in critical cases
 - Obtaining faculty feedback and offering necessary counseling
 - Apprising the faculty, students and parents about VCE's mission and goals
 - Maintaining constant rapport with faculty and students
 - Identifying thrust areas of R & D and interdisciplinary areas useful for employability of students
 - Improving qualifications
 - Overseeing the general maintenance of classrooms, labs.



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

INSTRUCTIONS TO THE FACULTY

Faculty members are required to comply the following instructions:

1. To mark the arrival time and leaving time in biometric system invariably before 10.00 AM in the morning and after 04.30 PM in afternoon.
2. To put the signature in the attendance register before 10.00 AM
3. To inform the irregularity of the students to the HOD.
4. To submit a report after attending any workshop/seminar/winter or summer school after they come back and they should give a seminar on that topic to the students/other faculty.
5. To be regular in evaluating the records of the students in the Labs.
6. Not to reassign the work allotted to him/her to somebody else without permission of HOD/principal.
7. Lab in-charge for each laboratory has to submit the requirement well in advance before the semester begins.
8. To keep the faculty room clean.
9. Faculty should record in the movement register when they go out during college hours after taking prior permission from the concerned HOD./ and applying on line at faculty.vardhamn.org
10. To submit the lesson plan to the concerned HOD before the commencement of the semester, and copy of it will be returned after approval.
11. To maintain teaching dairy (in the attendance register) and it is to be attested by HOD for every fortnight.
12. The faculty members are supposed to give standard projects which are based on latest technology. Students must be discouraged to do study projects. The guide should see that all the members in the batch involve in executing the projects.
13. To offer the counseling to the students allotted to them and motivate the students to excel in their studies. It should be recorded.
14. Each faculty should maintain Course file which contains:
Syllabus, Lesson plan, course out comes, Mapping between course outcomes and POs, Lecture notes, Previous University and mid examination question papers, Tutorial problems with solutions, lesson diary, attendance register, evaluation procedure, CO attainment etc
15. To engage classes regularly as per the time table and go to the classes punctually.
16. Make the alternate arrangements for their class work, whenever they apply leave. It must be adjusted to the faculty who handles the subject to that particular class.
17. Faculty should read the circular signed by the principal/HOD. Don't allow any student to make any announcements/ canvas without prior permission.



VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

GUIDE LINES TO THE CLASS TEACHERS

1. Advise the students who are irregular to the classes to be careful and inform the same to their parents over phone or by post.
2. They should see that whether the attendance is entered in online regularly or not at the end of day.
3. The attendance of the students who have less than 75 % must be sent to the parents by post. It must be sent by registered post, if the attendance is less than 65 %.
4. Internal marks of all the students should be sent to the parents.
5. The class teachers are required to prepare the minutes of meeting held with CRs and same must be submitted to HOD within two days of the meeting. If any important point in the minutes is required to discuss with the Principal or Management it is to be brought to the notice of Principal through HOD.



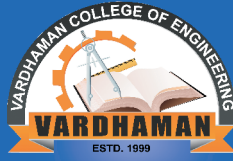
VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

Class Teachers

1. Every employee shall be governed by these rules and is liable for consequences in the event of any breach of rules by him/her.
2. Every employee shall at all times, maintain integrity, be devoted to his duty and be honest and impartial in his/her official dealings. An employee shall, at all times be courteous and polite in his/her dealings with the Management, with other members of staff, students and with members of the public. He shall exhibit utmost loyalty and shall, always act in the interests of the College.
3. An employee shall be required to observe the scheduled hours of working during which he/she must be present at the place of his/her work. No employee shall be absent from duty without prior permission. Even during leave or vacation, no employee shall leave head-quarters except with the prior permission of proper authority. Whenever leaving station, an employee shall inform the Principal in writing through the respective HOD or the Principal directly if the employee happens to be a HOD, the address at which he/she would be available during the period of his/her absence from the head-quarters.
4. No employee shall take part in politics or be associated with any party or organization which takes part in political activity, nor shall subscribe in the aid or assist in any manner any political movement or activity.
5. No employee shall make any statement, publish or write through any media which has the effect of an adverse criticism of any policy or action of the College or detrimental to the interests of the College.
6. No employee except with the prior permission of the competent authority engages directly or indirectly in any trade or any private tuition or undertakes employment outside his official assignment, whether for any monetary gain or not.
7. An employee against whom an Insolvency Proceedings commenced in the Court of law shall forthwith report full facts thereof to the College.
8. An employee against whom Criminal Proceedings are initiated in a Court of law shall immediately inform the competent authority of the College regarding the details thereof.
9. No employee shall, except with prior permission of the competent authority, has recourse to any court of law or to the press for the vindication of any official act of the College which has been the subject matter of adverse criticism or attack of defamatory character.
10. Whenever an employee wishes to put forth any claim or seeks redressal of any grievance he/she must forward his / her case in writing through proper channel to the competent authority and shall not forward any such advance copies of his/her application to any higher authorities unless the competent authority has rejected his claim or refused redressal of the grievance or has delayed the matter beyond a reasonable time.
11. No employee who has a living spouse shall contract another marriage without first obtaining the permission of the Governing Council notwithstanding that a subsequent marriage is permissible under personal and religious law for the time being applicable to him/her and violation of this rule will lead to the removal from the service of the college.

12. An employee who commits any offense or dereliction of duty or does an act detrimental to the interests of the college is subject to an enquiry and punishment by the competent authority. However, any employee aggrieved with the decision of the competent authority may appeal against such punishment or decision within 15 days of the receipt of the orders of the decision to the Governing Council and the decision of the Governing Council thereon, is final and binding on the employee
13. No employee shall engage in strike or incitement there to or in similar activities such as absence from work or neglect of duties or participate in hunger strike etc., violation of this rule will amount to misconduct and attract deterrent punishment.
14. The staff members shall not involve themselves in activities not related to their work, during working hours. The habit of reading irrelevant magazines, papers, books etc. during working hours is to be avoided.
15. Staff members are strongly encouraged to take up consultancy projects but only with the permission of the management.
16. The staff members are prohibited from accepting valuable gifts in any form from the students/ parents/companies having business transactions with the college.
17. The staff members shall not interfere in any matter not connected to their job requirement.
18. The details of students' feedback forms and performance appraisal reports given by the superiors shall be treated as confidential.



VARDHAMAN COLLEGE OF ENGINEERING

(AUTONOMOUS)

Kacharam, Shamshabad, Hyderabad - 501218

SERVICE RULES RECRUITMENT POLICY & PROMOTION POLICY LEAVE RULES AND INCENTIVE POLICY

For
Vardhaman College of Engineering
Staff & Faculty

1. SERVICE RULES AND PROCEDURES

SERVICE RULES AND PROCEDURES

1. PREAMBLE

- a. The following rules shall regulate the service conditions of all Teaching and Nonteaching staff of Vardhaman College of Engineering, either regular or probationary /Adhoc appointed in the vacancy of an approved post.
- b. The Rules shall come into force with effect from 9-4-2016.
- c. The Managing Body of Vardhaman College of Engineering is the final authority relating to the appointments, service conditions, fixing or adoption of pay scales of all employees of the College.
- d. The Managing Body of Vardhaman College of Engineering may exclude wholly or partly, from the operation of these rules to the holder of any post or the holders of any class of posts, and prescribe separate rules for such person(s).
- e. The Managing Body of the college may add, amend, alter or change these service conditions as and when it deems it necessary.

2. DEFINITIONS

- a. College/Institution means Vardhaman College of Engineering, Kacharam Vil, Shamshabad, Hyderabad.
- b. Managing Body means the Governing Council of the college / Vardhaman College of Engineering.
- c. University means the Jawaharlal Nehru Technological University, Hyderabad or any other university to which the college / course is affiliated.
- d. Principal means Principal of the College or any other person authorized by the Management to discharge the duties and responsibilities of the Principal, whatever be his designation.
- e. Year means a calendar year, unless qualified otherwise.

- f. Month means a Calendar Month.
- g. Pay means Basic Pay with full allowances excluding House Rent Allowance. Half-pay means Half of Basic pay with full allowances.
- h. Duty: A person is said to be 'on duty'
 - i. When he is performing the duties of a post to which he is appointed or undergoing the probation or training prescribed for such post, provided that the performance of such duties is followed by confirmation.
 - ii. When he is absent from duty on authorized holidays or on leave taken in accordance with instructions regulating such leave issued by the Managing Body / Governing Council having been on duty immediately before and immediately after such absence or
 - iii. When he is absent during vacation, or When he is attending conferences of learned societies on deputation by the College, or while he is on joining time.
 - iv. When he is absent from headquarters or from his routine work attending to other university work not connected with his usual routine to which he has been specifically deputed in his official capacity either by the Principal or by the Managing Body.
 - v. When he is absent from headquarters or routine work in connection with college duties either remunerative or non-remunerative, provided the duties have been assigned by the Principal or by the Managing Body.
- i. Employee means a person borne on the Teaching or Non-Teaching Staff of the Vardhaman College of Engineering, Shamshabad, Hyderabad and wherever the word 'he' is used to refer to a male employee. The word

“she” is to be read in relation to the female employee, as applicable.

3. GENERAL CONDITIONS OF SERVICE

- a. Appointments: The Managing Body of the college shall be the authority competent to appoint any members of teaching and non-teaching staff on the recommendation of the Staff Selection Committees/ Principal described under rules “d” and “e”. The order of appointment shall specifically state whether the member of staff has been appointed on probation or in a temporary capacity.
- b. The appointments on probation can be made only to the posts approved by the Managing Body. For this purpose, the Managing Body has the right to fix, add, alter or delete any post or posts at any time depending on the requirements of the college.
- c. All teaching staff appointed in the cadre of lecturer and above shall be filled in by open competition. The selection should be based on the recommendation of a Staff Selection Committee, duly constituted as per the norms prescribed by the Government/ University/AICTE.
- d. Appointments to all other teaching and non-teaching posts, temporary and adhoc shall be made by the Managing Body / Principal.
- e. All administrative appointments such as Heads of the Departments will be through nomination by the Principal for a specific period, based on the candidate’s relevant academic qualifications, relevant experience, performance in college, and administrative capabilities.
- f. The qualifications, experience and pay scales for various teaching posts shall be as decided by the Managing Body/Governing Council from time to time and shall generally be as per the AICTE guidelines.

- g. The services of Non-Teaching staff shall be regularized by the Managing Body based on the recommendations of the Principal.
- h. The qualifications, experience and pay scales for various non-teaching posts shall be as decided by the Managing Body of the College from time to time and shall generally be as per the guidelines of State Government.
- i. An employee appointed on probation shall be on probation for an uninterrupted period of two years on duty. However, an employee whose probation has been declared on a lower post and is subsequently selected and appointed to a higher post, the uninterrupted period of probation shall be one year on duty.
- j. The Chairman of the Managing Body / Governing Council upon the recommendation of the Managing Body in the case of Teaching Staff and Non-teaching Staff, by order may terminate the probation of a probationer, and discharge him from service without assigning reasons giving one month's notice or one month's salary in lieu of such a notice.
- k. The Chairman, upon the recommendation of the Principal, without assigning any reason may extend the period of probation of an employee by a maximum period of one year.
- l. Upon the recommendations of the Principal, the Chairman will issue an order / authorize the Principal to issue order declaring the probationer to have satisfactorily completed his / her probation. On the issue of such order, the probationer shall be declared to have satisfactorily completed his probation on the date of the expiry of the prescribed or extended period of probation.
- m. Unless the order declaring the satisfactory completion of probation is issued, the employee on probation shall be

deemed to be probationer even after the expiry of the prescribed or extended period of probation.

- n. All uninterrupted service shall count for increments in the time scale applicable to the post. An increment shall be granted by the Principal, based on satisfactory conduct and work performance during the year. The increment of an employee may be withheld by the Principal if his/her conduct has not been good or if his/her work performance has not been satisfactory. The employee whose increment is withheld may appeal to the Managing Body for redressal.
- o. The services of all employees on probation and all temporary appointments are terminable with one month's notice or one month's salary in lieu of such a notice. However, that as a disciplinary measure, the competent authority i.e., the Managing Body may discharge the employee without any notice.
- p. The employee who has once tendered his resignation is not entitled to withdraw it unless permitted to do so by the Chairman.
- q. No employee shall undertake any work, remunerative or otherwise, apart from that falling within ambit of his job in the Vardhaman College of Engineering without the prior permission in writing of the Principal under intimation to the Chairman.
- r. No employee shall apply for appointments elsewhere except through the Principal of the College and the College may forward not more than two applications in a year.

4. RESIGNATION, TERMINATION & RELIEF

- a. The services of teaching staff who have satisfactorily completed their period of probation on probation are liable to be terminated by the College by giving three

- months' notice or three months' salary in lieu of such notice.
- b. The service of teaching staff on temporary / adhoc appointments are liable to be terminated by the College by giving one month notice or one month salary in lieu of such notice.
 - c. The services of all non-teaching staff who are on regular basis are liable to be terminated by the College by giving one month notice or one month salary in lieu of such notice.
 - d. Teaching staff who have completed their period of probation or who are on probation can resign from service by giving either three months' notice or by paying three months' salary in lieu of such notice to the college. If their resignation is for the purpose of higher studies the notice period is reduced to 45 days instead of three months. (The timing of resignation should be such that the incumbent will be relieved at the end of the academic year / semester.)
 - e. Teaching staff who are on temporary/adhoc appointments can resign from service by giving either one month notice or by paying one month salary in lieu of such notice to the employer or till completion of academic work whichever is later.
 - f. All the Non-Teaching Staff who are on regular basis can resign from service by giving one month notice or by paying one month salary in lieu of such notice to the employer.
 - g. In the case of teaching staff, who have completed probation and are seeking employment elsewhere two applications per year will be forwarded subject to the condition that they will be relieved at the end of the academic year / semester only. In addition, all applications

for admission to higher studies and for All India Service Examinations (such as IAS, IES etc.) will also be forwarded. However, the Management has discretion to relax the rule in appropriate case basing on the merits and demerits of the case.

- h. In the case of teaching staff, who are on probation no application seeking employment elsewhere will be forwarded. However, all applications for admission to higher studies and All India Service Examinations (such as IAS, IES, etc) will be forwarded.
- i. In the case of teaching staff, who are appointed on temporary / adhoc basis and are seeking employment elsewhere two applications per year will be forwarded, subject to the condition that they will be relieved at the end of the academic year/semester only. In addition, all applications for admission to higher studies and All India Services Examinations (such as IAS, IES, etc.) will be forwarded.
- j. In the case of non-teaching staff no application seeking employment elsewhere will be forwarded during probation period. After completion of probation two applications per year will be forwarded subject to the condition that they will be relieved at the end of academic year/semester only.
- k. In the case of non-teaching staff (whether they are on probation or on regular basis) all applications for admission to higher studies will be forwarded.
- l. If the employee resigns after giving due notice and works for part of the notice period and then wishes to be relieved immediately he/she can do so by paying for the remaining part of the notice period.
- m. If the College issues termination notice to any employee and wishes to terminate the employee within the notice

period, the employer can do so by paying for remaining part of the notice period.

- n. In all the above sub clauses of this article, notice period does not include vacation or earned leave or leave on loss of pay granted to the employee.

5. DISCIPLINARY ACTION

- a. All employees are liable for disciplinary action for disobedience, misconduct and dereliction/ negligence of duty. However, such disciplinary action is initiated and after a fair opportunity has been provided to the employee to defend himself.
- b. As part of the disciplinary action, the following penalties / punishments for valid and sufficient reasons may be imposed upon the employees.
 - i. Censure.
 - ii. Fine.
 - iii. Withholding of Increment.
 - iv. Recovery from pay of the whole or part of any pecuniary loss caused to the college by negligence or breach of orders.
 - v. Reduction to a lower rank in the seniority or to a lower post or to a lower stage in the time scale.
 - vi. Suspension.
- c. Removal from the college service.
 - i. Dismissal from the college service.
- d.
 - i. The discharge of a person appointed on probation, during the period of probation or of a person engaged under contract in accordance with the terms of his contract or a person appointed otherwise than under contract to hold a temporary appointment on

the expiry of the period of the appointment, does not amount to removal or dismissal within the meaning of this rule.

- ii. The penalty under 5.1 may be imposed in addition to any other penalty, which may be inflicted in respect of the same negligence or breach of orders.
 - iii. The removal of an employee from the college service shall not disqualify him from future employment but the dismissal of a person from the college service shall ordinarily disqualify him from future employment in the college.
- e. Following are the valid reasons for which the penalties may be imposed on an employee:
- i. Irregularity in observing the college timings.
 - ii. Irregularity and/ or irresponsibility in attending to duties in the college.
 - iii. Unauthorized absence from work.
 - iv. Irregularity and/or irresponsibility in attending to duties like examination duty, etc. assigned from time to time.
 - v. Insubordination including failure to follow the specific instructions of the superior.
 - vi. Instigation of staff/students against the administration and / or management.
 - vii. Participation in the strike, meetings or rallies directed against the administration and/or management.
 - viii. Misappropriation of college funds.
 - ix. Conviction in the Court of Law.
 - x. If the employee is suffering from any incurable infectious disease or is declared insane by a panel of doctors approved by the competent Authority.

- xi. Participation of the employee in any act or movement calculated to bring the college into disrepute.
 - xii. If the employee indulges in any public criticism of the College administration or Management amounting to defiance and insubordination or causes or is likely to cause embarrassment to the administration in its relation to the staff or students or in its relation to the Government or the University.
- f. The competent authority, which may impose any of the penalties prescribed in 5.a, shall be the Chairman (on the recommendations of the Principal) and Appellate authority shall be the Governing Council.
 - g. In ordering the withholding of an increment, the withholding authority shall state the period for which it is withheld and whether it shall have the effect of postponing future increments. It shall be further stated in the order that the period for which increment has been stopped will be exclusive of any interval spent on leave before the period is completed.
 - h. Procedure: Before any of the penalties specified under 5.a(vi) to (viii) above is imposed against an employee of the college it is necessary to give him a reasonable opportunity to show cause against the disciplinary action which is proposed to be taken against him. This can best be done by intimating to the person concerned the grounds on which it is proposed to impose the penalty and by directing him to show cause why it should not be imposed.
 - i. Enquiry relating to any disciplinary action may be made by a Committee of three members appointed by the Chairman and consisting of the Principal and two other members. No teacher (other than the Principal) of the college shall be on the Committee.

- ii. No order of dismissal, removal or reduction shall be imposed on any employee of the college (other than an order based on facts which have led to this conviction in a criminal court) unless he has been informed in writing of the grounds on which it is proposed to take action and has been afforded an adequate opportunity of defending himself. The grounds on which it is proposed to take action shall be reduced to the form of a definite charge or charges, which shall be communicated to the person charged together with a statement of allegations in passing order in the case. He shall be required within a reasonable time to put in a written statement of his defense and to state whether he desires an oral enquiry to be conducted or only to be heard in person. If he desires an oral enquiry or if the authority concerned so directs, an oral enquiry shall be held. At that enquiry, oral evidence shall be heard as to such of the allegations as are not admitted, and the person charged shall be entitled to cross examine the witnesses and to give evidence in person. If no oral enquiry is held and if he desires to be heard in person, a personal hearing shall be given to him. The proceedings shall contain a sufficient record of evidence and a statement of the finding and the grounds thereof.
- iii. The requirement of rule "5.h.2" shall not apply where the person concerned has absconded, or where it is for other reasons impracticable to communicate with him/her.
- iv. All or any of the provisions of rule "5.h.2" may, in exceptional cases, and for special and sufficient reason to be recorded in writing, be waived, where

there is a difficulty in observing exactly the requirements of the rule and those requirements can be waived without injustice to the person charged.

- v. Where the authority holding the enquiry is not competent to award a penalty, his/her duty ends with the recording of his or its findings on the charges and it is not part of the function to make any suggestion regarding the penalty to be awarded or the further disposal of the case.
- vi. Any member in the college service may be placed under suspension by the competent authority pending enquiry into grave charges, where such suspension is deemed to be necessary in the interests of the college.
- i. During the period of suspension, or pending enquiry he may be paid subsistence allowance of 1/2 of his salary including allowances during the first six months and not exceeding three-fourths of the salary after six months.
- j. Every employee of the college shall be entitled to one appeal as hereinafter provided, from an order passed by an authority -
 - i. Imposing upon him any of the penalties specified in rule 5.1.
 - ii. Discharging him in accordance with the terms of his contract if he has been engaged on a contract for a fixed or for an indefinite period and has rendered, under either form of contract, continuous service for a period exceeding five years at the time when his services are terminated.
- k. In the case of an appeal under rule 5.i.i, the appellate authority shall consider
 - i. Whether the facts on which the order was based have been established

- ii. 'whether the facts established afford sufficient ground for taking action and
- iii. 'Whether the penalty is excessive, adequate or inadequate, and after such consideration, shall pass such order as it thinks proper.
- l. In the case of an appeal under rule 5.i.i, the appellate authority shall pass such order as appears to be just and equitable having regard to all circumstances of the case.
- m. Every person preferring an appeal shall do so separately and in his own name to the appellate authority specified in rule 5.c.
- n. Every appeal preferred under these rules shall contain all material statements and arguments relied on by the appellant, shall contain no disrespectful or improper language and be complete in itself. Every such appeal shall be addressed to the authority to which the appeal is preferred and submitted through the Head of the Department to which the appellant belongs or belonged and through the authority against whose order the appeal is preferred.
- o. An appeal may be withheld by an authority not lower than the authority against whose order it is preferred if,
 - i. It is an appeal in a case in which under these rules no appeal lies, or
 - ii. It does not compare with the provisions of rule 5.m
 - iii. It is not preferred within sixty days after the date of the service of the order appealed against and no reasonable cause is shown for the delay, or
 - iv. It is a repetition of a previous appeal and is made to the same appellate authority by which such an appeal has been decided and no new facts or circumstances are adduced which afford grounds for a reconsideration of the case, or

- v. It is addressed to an authority to which no appeal lies under the provision of rule 5.c.
- p. The authority by which an order imposing a penalty specified in 5.1 may be reversed or altered in cases in which no appeal is preferred, shall be the appellate authority prescribed in rule 5.c.
- q. The rules shall apply mutatis mutandis to the Principal, as Managing Body may, from time to time, declare that they shall be applicable.
- r. Every appeal which is not withheld under these rules shall be forwarded to the appellate authority by the authority against whose order the appeal is preferred with a reasonable statement.
- s. An appellate authority may consider for any appeal admissible under these rules which have been withheld by a subordinate and he may pass such orders thereon as he considers fit.
- t. Nothing in these rules shall operate to deprive any employee of any right of appeal, to which he is otherwise entitled in respect of any order passed before they come into force. An appeal pending at the time, these rules came into force or preferred thereafter, shall be deemed to be an appeal under these rules, and rule 5.h shall apply as if the appeal is against an order appealable under these rules.

6. CONDUCT RULES

- a. Every employee shall be governed by these rules and is liable for consequences in the event of any breach of rules by him/her.
- b. Every employee shall at all times, maintain integrity, be devoted to his duty and be honest and impartial in his/her official dealings. An employee shall, at all times be courteous and polite in his/her dealings with the

Management, with other members of staff, students and with members of the public. He shall exhibit utmost loyalty and shall, always act in the interests of the College.

- c. An employee shall be required to observe the scheduled hours of working during which he/she must be present at the place of his/her work. No employee shall be absent from duty without prior permission. Even during leave or vacation, no employee shall leave head-quarters except with the prior permission of proper authority. Whenever leaving station, an employee shall inform the Principal in writing through the respective HOD or the Principal directly if the employee happens to be a HOD, the address at which he/she would be available during the period of his/her absence from the head-quarters.
- d. No employee shall take part in politics or be associated with any party or organization which takes part in political activity, nor shall subscribe in the aid or assist in any manner any political movement or activity.
- e. No employee shall make any statement, publish or write through any media which has the effect of an adverse criticism of any policy or action of the College or detrimental to the interests of the College.
- f. No employee except with the prior permission of the competent authority engages directly or indirectly in any trade or any private tuition or undertakes employment outside his official assignment, whether for any monetary gain or not.
- g. An employee against whom an Insolvency Proceedings commenced in the Court of law shall forthwith report full facts thereof to the College.
- h. An employee against whom Criminal Proceedings are initiated in a Court of law shall immediately inform the

competent authority of the College regarding the details thereof.

- i. No employee shall, except with prior permission of the competent authority, has recourse to any court of law or to the press for the vindication of any official act of the College which has been the subject matter of adverse criticism or attack of defamatory character.
- j. Whenever an employee wishes to put forth any claim or seeks redressal of any grievance he/she must forward his / her case in writing through proper channel to the competent authority and shall not forward any such advance copies of his/her application to any higher authorities unless the competent authority has rejected his claim or refused redressal of the grievance or has delayed the matter beyond a reasonable time.
- k. No employee who has a living spouse shall contract another marriage without first obtaining the permission of the Governing Council notwithstanding that a subsequent marriage is permissible under personal and religious law for the time being applicable to him/her and violation of this rule will lead to the removal from the service of the college.
- l. An employee who commits any offense or dereliction of duty or does an act detrimental to the interests of the college is subject to an enquiry and punishment by the competent authority. However, any employee aggrieved with the decision of the competent authority may appeal against such punishment or decision within 15 days of the receipt of the orders of the decision to the Governing Council and the decision of the Governing Council thereon, is final and binding on the employee
- m. No employee shall engage in strike or incitement there to or in similar activities such as absence from work or

neglect of duties or participate in hunger strike etc., violation of this rule will amount to misconduct and attract deterrent punishment.

- n. The staff members shall not involve themselves in activities not related to their work, during working hours. The habit of reading irrelevant magazines, papers, books etc. during working hours is to be avoided.
- o. Staff members are strongly encouraged to take up consultancy projects but only with the permission of the management.
- p. The staff members are prohibited from accepting valuable gifts in any form from the students/ parents/companies having business transactions with the college.
- q. The staff members shall not interfere in any matter not connected to their job requirement.
- r. The details of students' feedback forms and performance appraisal reports given by the superiors shall be treated as confidential.

2. RECRUITMENT POLICY & PROMOTION POLICY

RECRUITMENT POLICY & PROMOTION POLICY

Objective:

To recruit potential employees who have the relevant skills, qualifications and experience to make a positive, innovative contribution towards the development of the college.

Scope and Application:

These rules shall apply to all the regular employees of all the institutions.

These rules are subject to such changes from time to time as may be decided by the Governing Body of the respective institutions.

Central recruitment committee:

The Central Recruitment Committee is composed of the following members:

1. Management representative
2. Head of the Institution
3. All Heads of Departments
4. Coordinator IQAC
5. Subject Expert

Strategy:

Identify vacancy: The identification of vacancies depend on:

- A. Existing changes arising due to termination, resignation, superannuation, leave and/or
- B. New workload requirements such as creation of new position or temporary additional workload

Prepare job description and person specification:

- a) Job description:

- i. Role responsible to
 - ii. Role responsible for
 - iii. Main purpose of the job
 - iv. Principal duties and responsibilities
- b) Person specification: Person specification needs to be neither too narrow nor too broad.
Essential and desirable
- i. Skills and abilities
 - ii. Knowledge
 - iii. Experience
 - iv. Training
 - v. Other requirements

Advertising the vacancy:

An advertisement with the following generic information may be prepared and if required it can be appended with some specific information.

Title of the Position:
Faculty / Department
No. of positions to be advertised
Job summary
Advertisement Text
Closing Period
Proposed Interview Date (if known)

Response Management: The applicants can apply for the posts advertised in both electronic mode and by mail. They shall be received and a database must be created by the Central Recruitment Committee. These applications based

on the discipline / Department will be separated and sent to the respective institutions / departments for short listing.

Short-listing: In this process applications are evaluated to determine the most suitable applicants for interview. These will be the applicants that most closely match the needs as defined in the person specification.

- ❖ If an applicant doesn't meet an essential criterion they should be discounted from the short list.
- ❖ The criteria for rejection must be demonstrated on the application form.
- ❖ Two or more people should shortlist applications, preferably from diverse backgrounds.
- ❖ Ideally aim to identify more candidates to invite to interview. This ensures candidates get fair hearings from alert and interested interviews.
- ❖ If an applicant has written anything on the application that discloses a specific request or recommendation, that must not be used in the decision-making process.
- ❖ The candidates can request to see any notes made about them during the short listing stage.

- ❖ If the number of applicants meeting the essential criteria becomes difficult to manage, you can use the desirable criteria as a further screening method.

Arranging interviews:

- ❖ For eligible applicants, Institution/ Department in-charge shall send email and also call them over phone to inviting them for interview.
- ❖ For unsuccessful applicants, Institution/Department in-charge shall send email and also call them over phone informing them that they have been unsuccessful.
- ❖ Applicant Feedback - If an unsuccessful applicant requests feedback constructive feedback as to why they were not short listed on this occasion shall be provided.

Conducting Interview: Interviewing is the process of asking questions in order to gather evidence about a candidate's ability to fulfill the job role. An interview is the compulsory element of the selection process. This enables an informed decision to be made about who is the best person for the job. It is also an opportunity for the candidate to learn more about the job and institution.

Procedure for Interview

Opening the interview

- ❖ Welcoming the candidate
- ❖ Introducing the panel members (name & role)
- ❖ Providing an outline agenda (including length of interview and when the candidate can ask questions)
- ❖ Informing that the panel will be taking notes for effective questioning and listening:
- ❖ Prudent questioning & more of listening.
- ❖ Begin the interview with less demanding questions to put the candidate at ease
- ❖ Follow the sequence of questions planned but be prepared to deviate if required

Taking notes:

- ❖ All members of the panel must take their own individual notes for each candidate
- ❖ Notes should be recorded using Interview Record Sheet
- ❖ Notes should be factual and accurate for recruiting the most suitable candidate
- ❖ The Interview Record Sheets will be kept on record for verification and audit

Closing the interview:

- ❖ Ensure all of the candidates questions have been answered
- ❖ Tell them how and when they will be informed of the outcome
- ❖ Thank the candidate for their time and interest

Decision making:

Following the interview and any other additional assessment methods that may have been incorporated into the decision making process, panelists should begin discussing each individual's performance to decide whether they are suitable for recruitment. It is important to conduct this stage properly to ensure an objective and sound decision.

- ❖ The members of panel should take some time to individually review their notes including any comments, scores and performance in additional selection methods that were undertaken. Panel members should then independently rank the candidates in order.
- ❖ The panel should then come together to discuss each candidate's performance in relation to the person's

specification criteria, job description and interview record forms to compare performance.

- ❖ This will enable you to discount all candidates that are not suitable for recruitment because they do not meet the criteria
- ❖ Place all candidates of a relevant discipline in a ranked order
- ❖ All panel members must agree for the ranked order.
- ❖ Once you have decided on your first choice candidate, consider other candidates that are eligible for recruitment and rank them so that you can move quickly if your first choice candidate does not accept the job offer.
- ❖ If there are any doubts over the ability of any of the candidates to carry out the role - you should not appoint. It is better to re advertise the vacancy and appoint the right person.

Avoiding bias

In decision making process the members of panel are all potentially susceptible to unconscious bias, stereotyping and distortion. To avoid unwittingly making any potentially discriminatory decisions vide consultations unilateral decision has to be arrived.

Making the appointment

- ❖ The chairman of the panel (as far as possible) should contact the successful candidate by telephone, ideally on the same or next day, to offer them the job.
- ❖ The chairman of the panel should congratulate the candidate and confirm that they have been successful candidates to the standard pre-employment checks (e.g.

qualifications, experience etc) which will be undertaken by establishment section of the institution

- ❖ Positive and enthusiastic feedback on how well they performed need to be given.
- ❖ Discuss on potential start/joining dates
- ❖ Try to establish without pressurizing the candidate, whether they are likely to accept the offer.
- ❖ Explain that establishment section of the institution will be in touch with them shortly to confirm the offer of employment

Communicating the outcome to unsuccessful candidates:

Unsuccessful candidates should be contacted by telephone so that accurate feedback about performance can be provided using the information recorded on the Interview Record Forms within 1-2 days of the interview to confirm that they have not been successful.

Formal offer: Establishment section of the Institution will then liaise with the successful candidate regarding the terms and conditions of employment, any contractual issues and their start date etc.

Induction: The Departmental/Faculty Induction should consist of pre arrival activities (greetings procedures, physical arrangements, ICT services, induction activities and an induction pack).

- ❖ A personalized Induction timetable
- ❖ Information about the Faculty / Department structure, etc
- ❖ Any relevant departmental policies and procedures

- ❖ Any other information appropriate to the Faculty/ Department and staff member's role
- ❖ Depending on what is most appropriate, this could be a hard copy pack or references to key documents.

Recommendations for fixing the salary for Appointing Faculty Position

- A. **Assistant Professor:** M .Tech / M. Sc / MA / MBA / Other Relevant PG (Fresher) from any recognized institute.

Salary: AICTE VI pay (Rs.15,600 – 39,100 with AGP of Rs. 6,000) applicable as on date of appointment.

- B. **Associate Professor:** Ph. D from any recognized university with overall experience of 8 years.

Salary: AICTE VI pay (Rs.37,400 – 67,000 with AGP of Rs. 9,000) applicable as on date of appointment.

- C. **Professor:** 5 years experience after Ph .D and should have overall experience 10 years. Ph.D. from any recognized university.

Salary: AICTE VI pay (Rs.37,400 – 67,000 with AGP of Rs. 10,000, fixed at a stage not below Rs. 43,000) applicable as on date of appointment.

Promotion Policy

- A. **Assistant Professor:** Assistant Professor with Pay Scale of Rs.15,600 – 39,100 with Academic Grade Pay of Rs. 6,000 shall be moved to the next higher grade (Academic Grade Pay of Rs. 7,000) within the same cadre after completion of four years of service if the candidate possesses a PhD degree (or) after completion of six years for non-PhD holders.
- B. **Assistant Professor:** Assistant Professor with Pay Scale of Rs.15,600 – 39,100 with Academic Grade Pay of Rs. 7,000 shall be moved to the next higher grade (Academic Grade Pay of Rs. 8,000) within the same cadre after completion of four years of service if the candidate possesses a PhD degree (or) after completion of six years for non -PhD holders.
- C. **Associate Professor:** Assistant Professor with Pay Scale of Rs.15,600 – 39,100 with Academic Grade Pay of Rs. 8,000 with three years of service shall be promoted as Associate Professor in a pay band of Rs.37,400 – 67,000 with academic grade pay of Rs. 9,000 (the candidate should possess PhD degree).
- D. **Professor:** Associate Professor with Pay Scale of Rs.37,400 – 67,000 with academic grade pay of Rs. 9,000 with five years of service shall be promoted as Professor in a pay band of Rs.37,400 – 67,000 with academic grade pay of Rs. 10,000.

Note: The candidate need to satisfy minimum API score in Performance Based Appraisal System of the College.

3. LEAVE RULES

LEAVE RULES

1. GENERAL

- a. These rules shall be called "Vardhaman College of Engineering Leave Rules".
- b. They shall be deemed to have come into force with effect from 1st June 2000. They shall be applied to all the employees of the college.
- c. "Employee" fits into any of the following categories.
 - i. Appointed on ad-hoc/temporary basis.
 - ii. Regular employee appointed against an approved post and who is on probation.
 - iii. Regular employee, whose probation has been declared.
- d. Leave cannot be claimed as a matter of right. The sanctioning authority has full discretion to refuse or revoke leave of any description when the exigencies of service so demand.
- e. The sanctioning authority may recall an employee to duty before the expiry of his/her leave.
- f. Unauthorized absence from duty may be treated as misbehavior involving disciplinary action. An employee on leave shall not take up any service or accept any employment without the prior sanction of the appointing authority.
- g. Every application for leave on medical grounds shall be accompanied by a medical certificate given by a Registered Medical Practitioner/Asst. Civil Surgeon, in the panel of experts approved by the Governing Council. No employee who has been granted leave on medical grounds may return to duty without producing a medical certificate of fitness.
- h. Leave on loss of pay, half-pay leave, and earned leave cannot be availed for a period of less than three days.

- i. An employee who leaves his place of duty during vacation is liable to be recalled.
- j. The principal shall be the authority competent to grant leave to all employees. In the case of the Principal, Chairman of the Governing Council or his nominee will be the authority to sanction leave.
- k. An employee cannot return to duty before the expiry of leave sanctioned to him unless he is permitted by the competent authority to do so.

2. CASUAL LEAVE (CL)

- a. Casual leave will be admissible to an employee of the college for a total period not exceeding 12 days in a calendar year. If any employee joins the college in the middle of the calendar year, the quantum of casual leave admissible to him/her will be on prorated basis.
- b. It may be granted for a period not exceeding 10 days at a time including holidays. Any balance period of casual leave shall lapse with the calendar year.
- c. Casual leave should not be combined with any kind of regular leave discussed in the following sections or with vacation.
- d. Casual leave required advance sanction and the employee has to make alternative arrangements for his/her work.
- e. Casual leave for half a day can be granted to an employee for the forenoon or afternoon.

3. SPECIAL LEAVES (SL)

- a. Special leave for a total period not exceeding 14 days in an academic year may be granted to a Regular Employee of the college towards any of the following and lapses within the calendar year .

- i. When an employee attends seminars/symposia/workshops etc., organized by institutions of national and international repute.
 - ii. When the employee is prevented from attending to his/her duties on account of prevalence of any infectious disease in his/her house. No SL is admissible when the employee is infected himself/herself.
 - iii. When the employee is prevented from attending his/her duties for want of transport facilities owing to a local or regional or state-wise "Bandh" or the like.
 - iv. When the employee undergoes sterilization operation under the family planning scheme, once during the service period, subject to the production of a medical certificate.
 - v. When a male employees wife undergoes a non-peripheral tubectomy operation under the family planning scheme.
- b. Special leave cannot be combined with ordinary casual leave or with any other leave or with vacation.

4. EARNED LEAVES (EL)

- a. The teaching staff, whose services are regularized shall be eligible for vacation limited to 21 days in an academic year. In case of employees appointed in the middle of the academic year, they shall be eligible for vacation proportionately. Vacation may be declared for a minimum period of 07 days including holidays and Sundays.
- b. The teaching staff whose probation has been declared shall be credited with 3 days of Earned Leave for every year of completed service from the day of declaration of probation.
- c. When the employee is not allowed to avail a part or whole of vacation for the benefit of the college, additional Earned

Leave shall be credited at the rate of one day for every three days of vacation that he/she was deprived of and lapsed in a calendar year.

- d. The Regularized Non-Teaching Staff may avail vacation limited to 07 days in not more than two stretches.
- e. In addition to the above, the Non-Teaching Staff, whose probation has been declared, shall be eligible for Earned Leave of one day for every 60 days of service from the day of declaration of probation.
- f. An employee will however, can have a maximum Earned Leave of 24 days to his/her credit at any given time.
- g. Vacation may be taken in combination with or in continuation of Earned Leave, halfpay leave and extra-ordinary leave provided that the total duration of vacation and leave shall not exceed 12 days.
- h. The grant of Earned Leave at a time shall not exceed 12 days. The competent authority shall however relax this limit for special reasons.
 - i. Earned Leave cannot be availed for a period of less than three days.

5. MEDICAL LEAVES (ML)

- a. Medical Leave admissible to an employee, whose probation has been declared, will be 5 days for each completed year of regular service. However, the employee may avail twice as many days with half-pay.
- b. Medical Leave may be granted to an employee based on the Medical Certificate obtained from any of the doctors in the panel of doctors approved by the College Authorities. Medical Leave can be accumulated up to maximum of 120 days in the entire service.

6. MATERNITY LEAVES

- a. Maternity Leave is admissible only to women employees appointed on regular basis.
- b. The leave may be sanctioned up to 30 days on full pay and half-pay for another 60 days.
- c. The leave is not admissible in case of an employee, who has two or more surviving children.

7. ON DUTY

- a. The principal shall be the authority competent to grant leave to all employees. In the case of the Principal, Chairman of the Governing Council or his nominee will be the authority to sanction leave

8. COMPENSATIVE CASUAL LEAVE (CCL)

- a. The principal shall be the authority competent to grant leave to all employees under important work conducted on public holidays. In the case of the Principal, Chairman of the Governing Council or his nominee will be the authority to sanction leave whenever necessary for the employee.

4 INCENTIVE POLICY

INCENTIVE POLICY

To encourage the faculty towards research, the management has decided to give incentives for publishing research articles published in reputed Journals which are indexed in SCOPUS, web of science, SCI and ISI. The incentives are as given below.

1. If it is paid journal, reimbursement will be made subjected to a maximum of Rs 15,000/-
2. In addition incentive will be paid as given below.
 - SCOPUS / WEB of Science / SCI : Rs. 5,000
 - Indian Citation Index : Rs. 2,000
 - If it is free Journal (SCI/SCOPUS/WEB OF SCIENCE) : Rs. 10,000
 - Additional Rs 1000/- for every citation in a year (the paper must be cited in a Journal which is also a Scopus / Web of Science Indexed).
 - For Conferences, Registration fee will be paid subjected to a maximum of Rs. 8,000/- (Proceedings should be published in Springer / IEEE Xplore / ACM / Association of Civil Engg / Association of Mechanical Engg / Science Direct / IET).
3. Only **First Author** will get the incentive.
4. If it is in the top 25 % of highly cited publications, Rs. 20,000 incentive will be paid in addition to the above mentioned. The data may be collected from Clarivate Analytics and Scopus Database.
5. Faculty who get sponsored project from any funding agency like DST / AICTE / UGC / etc, will be given incentive Rs. 5,000.

6. Faculty who got gold medals (One among top 5%) in online certification programs like NPTEL will be given Rs. 1,000 as incentive.

VISION

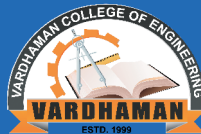
To be a pioneer institute and leader in engineering education to address societal needs through education and practice.

MISSION

- To adopt innovative student centric learning methods.
- To enhance professional and entrepreneurial skills through industry institute interaction.
- To train the students to meet dynamic needs of the society.
- To promote research and continuing education.

QUALITY POLICY

We at Vardhaman College of Engineering, endeavor to uphold excellence in all spheres by adopting best practices in effort and effect.



VARDHAMAN COLLEGE OF ENGINEERING (AUTONOMOUS)

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**Manual
on
Human Values
&
Professional Ethics**

(Extract of Professional Ethics and Human Values by R. S. Nagaarazan, New Age International Publishers)

Human Values

1.0 OBJECTIVES (WHY ENGINEERING ETHICS?)

The objectives of this course on 'Professional Ethics and Human Values' are: (a) to understand the moral values that ought to guide the Engineering profession, (b) resolve the moral issues in the profession, and (c) justify the moral judgment concerning the profession. It is intended to develop a set of beliefs, attitudes, and habits that engineers should display concerning morality.

The prime objective is to increase one's ability to deal effectively with moral complexity in engineering practice.

Alternatively, the objectives of the study on Professional Ethics may be listed as:

- (A) Improvement of the cognitive skills (skills of the intellect in thinking clearly)
 1. Moral awareness (proficiency in recognizing moral problems in engineering)
 2. Cogent moral reasoning (comprehending, assessing different views)
 3. Moral coherence (forming consistent viewpoints based on facts)
 4. Moral imagination (searching beyond obvious the alternative responses to issues and being receptive to creative solutions)
 5. Moral communication, to express and support one's views to others.
- (B) To *act* in morally desirable ways, towards moral commitment and responsible conduct
 6. Moral reasonableness i.e., willing and able to be morally responsible.
 7. Respect for persons, which means showing concern for the well-being of others, besides oneself.
 8. Tolerance of diversity i.e., respect for ethnic and religious differences, and acceptance of reasonable differences in moral perspectives.
 9. Moral hope i.e., believe in using rational dialogue for resolving moral conflicts.
 10. Integrity, which means moral integrity, and integrating one's professional life and personal convictions.

1.1 MORALS

Morals are the welfare principles enunciated by the wise people, based on their experience and wisdom. They were edited, changed or modified or evolved to suit the geography of the region, rulers (dynasty), and in accordance with development of knowledge in science and technology and with time.

Morality is concerned with principles and practices of morals such as: (a) What ought or ought not to be done in a given situation? (b) What is right or wrong about the handling of a situation? and

(c) What is good or bad about the people, policies, and ideals involved?

Morality is different from Ethics in the following ways:

<i>Moralit y</i>	<i>Ethics</i>
1. More general and prescriptive based on customs and traditions.	1. Specific and descriptive. It is a critical reflection on morals.
2. More concerned with the results of wrong action, when done.	2. More concerned with the results of a right action, when not done.
3. Thrust is on judgment and punishment, in the name of God or by laws.	3. Thrust is on influence, education, training through codes, guidelines, and correction.
4. In case of conflict between the two, morality is given top priority, because the damage is more. It is more common and basic.	4. Less serious, hence second priority only. Less common. But relevant today, because of complex interactions in the modern society.
5. Example: Character flaw, corruption, extortion, and crime.	5. Example: Notions or beliefs about manners, tastes, customs, and towards laws.

As against morals and ethics, laws are norms, formally approved by state, power or national or international political bodies. Breaking the norms is called *crime*, and invite specific punishment.

1.2 VALUES

1.2.1 Definition

Humans have the unique ability to define their identity, choose their values and establish their beliefs. All three of these directly influence a person's behavior. People have gone to great lengths to demonstrate the validity of their beliefs, including war and sacrificing their own life! Conversely, people are not motivated to support or validate the beliefs of another, when those beliefs are contrary to their own.

People will act congruent with their personal values or what they deem to be important.

A value is defined as a principle that promotes well-being or prevents harm. Another definition is: *Values are our guidelines for our success—our paradigm about what is acceptable.* Personal values are defined as: *“Emotional beliefs in principles regarded as particularly favorable or important for the individual.”* Our values associate emotions to our experiences and guide our choices, decisions and actions.

A person's observations on its environment are filtered through his values to determine whether or not he should expend energy to do something about his experiences. A person who values gold and sees a large bag of gold (a positive value) in his path as he walks, will be motivated to reach down and pick it up. A person who values his life and knows about venomous snakes will retreat from the sound of a rattlesnake (a negative value) from nearby, when he is walking in the desert. Said in another way, *"Values are the scales we use to weigh our choices for our actions, whether to move towards or away from something."*

Not all values have the same weight or priority. Some are more important than others and must be satisfied before others can be addressed. **Dr. Abraham Maslow** illustrated this with his hierarchy of human needs. Survival has a higher priority than security, which has a higher priority than social acceptance. Self-esteem can only be addressed to the degree that social acceptance is fulfilled. Similarly, self-actualization can only be pursued to the degree that self-esteem has been satisfied.

A person's beliefs, values and identity are usually acquired unconsciously based on his personal experience or observations of others' experiences as to what produces desirable or undesirable results in the environment. A baby's learning *to walk and talk* is a clear example of identifying with human adults, valuing the act of being able to have the mobility and communication ability of an adult and the belief, based on unconscious observation, that humans can do walk and do talk with each other.

Physiologists have identified the parts of the human brain that are involved in producing behavior in accordance with beliefs and values. All information collected by human senses is passed through a net-like group of cells, known as the Reticular Activating System (RAS), located near the top of the brain stem. The RAS compares the data received with accepted values, positive and negative (threats), and beliefs stored in memory and determines whether or not immediate action is required. The results of the RAS's comparison are communicated to the 'amygdala' near the mid-brain.

The 'amygdala' produces neuro-chemicals that cause emotions consistent with the nature of and proportional to the match between environment and values and beliefs. The neuro-chemicals initiate the chemical processes needed for the action to be taken. If the emotions produced are strong enough, the perceived information is blocked from reaching the logical, rational and conscious executive center of the brain, the pre-frontal lobes. In which case, the resulting behavior will be automatic, not necessarily logical or rational, and completely in accordance with the person's strongest held beliefs, values and/or identity.

By positive affirmations, one can modify or create new beliefs about a person's identity and/or what is important to him (values). Verbal repetition of statements intended to become new beliefs, and values will result in these being stored for use by the RAS for comparison with the environment being experienced. This is the mechanism how the beliefs or values are modified.

1.2.2 Types of Values²

The five core human values are: (1) Right conduct, (2) Peace, (3) Truth, (4) Love, and (5) Non-violence.

1. Values related to RIGHT CONDUCT are:
 - (a) SELF-HELP SKILLS: Care of possessions, diet, hygiene, modesty, posture, self reliance, and tidy appearance
 - (b) SOCIAL SKILLS: Good behavior, good manners, good relationships, helpfulness, No wastage, and good environment, and
 - (c) ETHICAL SKILLS: Code of conduct, courage, dependability, duty, efficiency,

- ingenuity, initiative, perseverance, punctuality, resourcefulness, respect for all, and responsibility
2. Values related to PEACE are: Attention, calmness, concentration, contentment, dignity, discipline, equality, equanimity, faithfulness, focus, gratitude, happiness, harmony, humility, inner silence, optimism, patience, reflection, satisfaction, self-acceptance, self-confidence, self-control, self-discipline, self-esteem, self-respect, sense control, tolerance, and understanding
 3. Values related to TRUTH are: Accuracy, curiosity, discernment, fairness, fearlessness, honesty, integrity (unity of thought, word, and deed), intuition, justice, optimism, purity, quest for knowledge, reason, self-analysis, sincerity, spirit of enquiry, synthesis, trust, truthfulness, and determination.
 4. Values related to LOVE are: Acceptance, affection, care, compassion, consideration, dedication, devotion, empathy, forbearance, forgiveness, friendship, generosity, gentleness, humanness, interdependence, kindness, patience, patriotism, reverence, sacrifice, selflessness, service, sharing, sympathy, thoughtfulness, tolerance and trust
 5. Values related to NON-VIOLENCE are:
 - (a) PSYCHOLOGICAL: Benevolence, compassion, concern for others, consideration, forbearance, forgiveness, manners, happiness, loyalty, morality, and universal love
 - (b) SOCIAL: Appreciation of other cultures and religions, brotherhood, care of environment, citizenship, equality, harmlessness, national awareness, perseverance, respect for property, and social justice.

PERSEVERANCE is defined as persistence, determination, resolution, tenacity, dedication, commitment, constancy, steadfastness, stamina, endurance and indefatigability. To persevere is described as to continue, carry on, stick at it (in formal), keep going, persist, plug away, (informal), remain, stand firm, stand fast, hold on and hang on. Perseverance builds character.

ACCURACY means freedom from mistake or error; conformity to truth or to a standard or model and exactness. Accuracy is defined as correctness, exactness, authenticity, truth, veracity, closeness to truth (true value) and carefulness. The value of accuracy embraces a large area and has many implications. Engineers are encouraged to demonstrate accuracy in their behavior through the medium of praise and other incentives. Accuracy includes telling the truth, not exaggerating, and taking care over one's work.

DISCERNMENT means discrimination, perception, penetration, and insight. Discernment means the power to see what is not obvious to the average mind. It stresses accuracy, especially in reading character or motives. Discrimination stresses the power to distinguish or select what is true or genuinely excellent. Perception implies quick and often sympathetic discernment, as of shades of feelings. Penetration implies a searching mind that goes beyond what is obvious or superficial. Insight suggests depth of discernment.

Definitions of other terms are given in the appropriate pages of this book.

1.2.3 Evolution of Human Values

The human values evolve because of the following factors:

1. The impact of norms of the society on the fulfillment of the individual's needs or desires.

2. Developed or modified by one's own awareness, choice, and judgment in fulfilling the needs.
3. By the teachings and practice of Preceptors (Gurus) or Saviors or religious leaders.
4. Fostered or modified by social leaders, rulers of kingdom, and by law (government).

1.3 ETHICS

Ethics is the word that refers to morals, values, and beliefs of the individuals, family or the society. The word has several meanings. Basically it is an activity and process of inquiry. Secondly, it is different from non-moral problems, when dealing with issues and controversies. Thirdly, ethics refers to a particular set of beliefs, attitudes, and habits of individuals or family or groups concerned with morals. Fourth, it is used to mean 'morally correct'.

The study on ethics helps to know the people's beliefs, values, and morals, learn the good and bad of them, and practice them to maximize their well-being and happiness. It involves the inquiry on the existing situations, form judgments and resolve the issues. In addition, ethics tells us how to live, to respond to issues, through the duties, rights, responsibilities, and obligations. In religion, similar principles are included, but the reasoning on procedures is limited. The principles and practices of religions have varied from time to time (history), region (geography, climatic conditions), religion, society, language, caste and creed. But ethics has grown to a large extent beyond the barriers listed above. In ethics, the focus is to study and apply the principles and practices, universally.

1.4 INTEGRITY

Integrity is defined as the unity of thought, word and deed (honesty) and open mindedness. It includes the capacity to communicate the factual information so that others can make well-informed decisions. It yields the person's 'peace of mind', and hence adds strength and consistency in character, decisions, and actions. This paves way to one's success. It is one of the self-direction virtues. It enthruses people not only to execute a job well but to achieve excellence in performance. It helps them to own the responsibility and earn self-respect and recognition by doing the job.

Moral integrity is defined as a virtue, which reflects a consistency of one's attitudes, emotions, and conduct in relation to justified moral values. Further discussion on this is available in Chapter 2.

1.5 WORK ETHICS¹

Industry and Society are the two systems which interact with each other and are interdependent. Society requires industry/business system which provides manufacturing, distribution and consumption activities. It needs investment (capital input), labor (input), supply (raw materials), production (industries, business organizations), marketing and distribution (transport), and consumption (public, customer). A lot of transactions (and interactions) between these sub-systems involving people are needed for the welfare of the society. It is here, the work ethics plays an essential role.

Work ethics is defined as *a set of attitudes concerned with the value of work, which forms the motivational orientation*. The 'work ethics' is aimed at ensuring the economy (get job, create wealth, earn salary), productivity (wealth, profit), safety (in workplace), health and hygiene (working conditions), privacy (raise family), security (permanence against contractual, pension, and retirement benefits), cultural and social development (leisure, hobby, and happiness), welfare (social work), environment (anti-pollution activities), and offer opportunities for all, according to their abilities, but without discrimination.

Many complex social problems exist in the industrial/business scenario, because:

1. The people desire to be recognized as individuals and treated with dignity, as living human beings. Work is intrinsically valuable so far as it is enjoyable or meaningful in allowing personal expression and self-fulfillment. Meaningful work is worth doing for the sense of personal identity and the self-esteem it holds.
2. Economic independence: Work is the major instrumental good in life. It is the main source of providing the income needed to avoid economic dependence on others, for obtaining desired materials and services, and for achieving status and recognition from others.
3. Pay as well as the pace of work should be in commensurate with the expertise required, acquired, and utilized in the persons. Exploitation and bargained pay should be discouraged.
4. Privacy (personal freedom) of the employee, including women, is to be protected. At the same time, confidentiality of the employer is also to be protected. Mutual trust and loyalty both ways play major roles in this aspect.
5. Security during job and upon retirement: This concept is being accepted only in government jobs, public limited companies, and corporate organizations. The western thought has influenced the Indian private industries and multinationals in a paradigm shift from 'life- long employment' to policies such as 'merit only', 'hire and fire', 'pay and use' etc. This situation has no doubt created tension in the Indian scene.
6. Recognition to non-work activities, such as leisure, paid holiday on the day of visit of a dignitary, social service, and other developmental activities. The workers in prosperous countries are less willing to consider 'work' as their prime interest in life. They claim that such service activities give them *peace of mind* and *happiness*. However, such a trend is likely to decline the work ethics.
7. Hard work and productivity are very essential for the success of an industry. The quality of work life deserves to be improved. Hard labor, undignified jobs (human-drawn *rikshaw*, people carrying night soil), and hazardous jobs are to be made less straining, dignified, and safer. Automation and CNC systems to a large extent have been successful in lessening the human burden. Still, many a hard work can not be replaced by 'virtual work', in the near future.
8. Employee alienation: Absence of or inadequate 'recognition and reward system' and 'grievance redressal system', lack of transparency in policy implementation, factions in trade unions etc. lead to ethical problems, affecting the work ethics. Participative management, quality circles, job rotation, and flexible working hours are some of the measures to counter this situation.
9. A different view of work ethics: Work is considered as a necessary evil. It is a thing one must do in order to avoid worse evils, such as dependency and poverty. That is a major source of anxiety and unhappiness.
10. As per the Protestant Work Ethics, the financial success is a sign that is favored by God. It means making maximal profit is a duty mandated by God. It is to be obtained rationally, diligently, and without compromising with other values such as spending time with one's family and not exploiting or harming others¹

To work (job), is not for monetary considerations only. Human beings believe that it is good to work. Work is good for the body and mind. It promotes self-respect, self-esteem, good for the family, and obligation to the society and allow the world to prosper. Work lays a moral and meaningful foundation for life. That is why, work ethics affirms that, the work *per se* is worthy, admirable and valuable at personal and social levels. It improves the quality of life and makes life purposeful, successful, and happy.

By work ethics, duties to the self, family, society, and nation are fulfilled. Rights of the individuals are respected and nourished. Values and virtues are cultivated and enjoyed by all human beings. Further, the quality of life is improved and the environment protected. On the other hand, unemployment and under-employment lead to frustration, social tensions, and occasional militancy. For a developing economy and society, like ours, we need to *promote work ethics*, at all levels, to flourish as developed nation.

1.6 SERVICE LEARNING

Service learning refers to learning the service policies, procedures, norms, and conditions, other than 'the technical trade practices'. The service learning includes the characteristics of the work, basic requirements, security of the job, and awareness of the procedures, while taking decisions and actions. It helps the individuals to interact ethically with colleagues, to effectively coordinate with other departments, to interact cordially with suppliers as well as the customers, and to maintain all these friendly interactions.

Alternatively, the service learning may be defined as the *non-paid activity*, in which service is provided on voluntary basis to the public (have-nots in the community), non-profitable institutions, and charitable organizations. It is the service during learning. This includes training or study on real life problems and their possible solutions, during the formal learning, i.e., courses of study. In the industrial scenario, adoption, study, and development of public health or welfare or safety system of a village or school is an example of service learning by the employees. The engineering student analyzing and executing a socially-relevant project is another example of service learning.

The service learning is a methodology falling under the category of experiential education³. It is one of the forms of experiential learning and community service opportunities. It is distinguished in the following ways:

1. *Connection to curriculum*: Integrating the learning into a service project is a key to successful service learning. Academic ties should be clear and built upon existing disciplinary skills.
2. *Learner's voice*: Beyond being actively engaged in the project, trainees have the opportunity to select, design, implement, and evaluate their service activity.
3. *Reflection*: Structured opportunities are created to think, talk, and write about the service experience. The balance of reflection and action allows the trainee to be constantly aware of the impact of their *work*.
4. *Partners in the community*: Partnership with community agencies are used to identify genuine needs, provide mentorship, and contribute input such as labor and expertise towards completing the project.

1.7 VIRTUES

Virtues are *positive* and *preferred* values. Virtues are desirable attitudes or character traits, motives and emotions that enable us to be successful and to act in ways that develop our highest potential. They energize and enable us to pursue the ideals that we have adopted. Honesty, courage, compassion, generosity, fidelity, integrity, fairness, transparency, self-control, and prudence are all examples of virtues.

Virtues are tendencies which include, solving problems through peaceful and constructive means and follow the path of the golden mean between the extremes of 'excess and deficiency'. They are like habits, once acquired, they become characteristics of a person. Moreover, a person who has developed virtues will naturally act in ways consistent with moral principles. The virtuous person is the ethical person.

1.7.1 Civic Virtues

Civic virtues are the moral duties and rights, as a citizen of the village or the country or an integral part of the society and environment. An individual may exhibit civic virtues by voting, volunteering, and organizing welfare groups and meetings.

The duties are:

1. To pay taxes to the local government and state, in time.
2. To keep the surroundings clean and green.
3. Not to pollute the water, land, and air by following hygiene and proper garbage disposal. For example, not to burn wood, tyres, plastic materials, spit in the open, even not to smoke in the open, and not to cause nuisance to the public, are some of the civic (duties) virtues.
4. To follow the road safety rules.

On the other hand, the rights are:

1. To vote the local or state government.
2. To contest in the elections to the local or state government.
3. To seek a public welfare facility such as a school, hospital or a community hall or transport or communication facility, for the residents.
4. To establish a green and safe environment, pollution free, corruption free, and to follow ethical principles. People are said to have the right to breathe in fresh air, by not allowing smoking in public.
5. People have inalienable right to accept or reject a project in their area. One has the right to seek legal remedy, in this respect, through public interest petition.

George Washington⁴ embodied the civic virtues as indispensable for a self-governing administration.

These virtues are divided into four categories:

1. Civic Knowledge

Citizens must understand what the Constitution says about how the government is working, and what the government is supposed to do and what not to do. We must understand the basis of our responsibilities as citizens, besides duties and rights. We must be able to recognize when the government or another citizen infringes upon our rights. It implies that the government requires the participation of the enlightened citizens, to serve and survive.

2. *Self-Restraint*

For citizens to live in a free society with limited government each citizen must be able to control or restrain himself; otherwise, we would need a police state—that is, a dictatorial government to maintain safety and order. He advocated for morality and declared that happiness is achieved and sustained through virtues and morals. He advocated and demonstrated self-restraint several times in his private and public life, and naturally he was a great leader.

3. *Self-Assertion*

Self-assertion means that citizens must be proud of their rights, and have the courage to stand up in public and defend their rights. Sometimes, a government may usurp the very rights that it was created to protect. In such cases, it is the right of the people to alter or abolish that government (e.g., voting rights, rights call back).

4. *Self-Reliance*

Citizens who cannot provide for themselves will need a large government to take care of them. Once citizens become dependent on government for their basic needs, the people are no longer in a position to demand that government act within the confines of the Constitution. Self-reliant citizens are free citizens in the sense that they are not dependent on others for their basic needs. They do not need a large provider-government, which has the potential to become an oppressive government, to meet those needs. Only a strong self-reliant citizenry will be able to enjoy fully the blessings of liberty. These civic virtues, applicable to local, state, and central governments, nourish freedom and civil liberty at the root of democracy.

1.8 RESPECT FOR OTHERS

This is a basic requirement for nurturing friendship, team work, and for the synergy it promotes and sustains. The principles enunciated in this regard are:

1. Recognize and accept the existence of other persons as human beings, because they have a right to live, just as you have.
2. Respect others' ideas (decisions), words, and labor (actions). One need not accept or approve or award them, but shall listen to them first. One can correct or warn, if they commit mistakes. Some people may wait and watch as fun, if one falls, claiming that they know others' mistakes before and know that they will fall! Appreciate colleagues and subordinates on their positive actions. Criticize constructively and encourage them. They are bound to improve their performance, by learning properly and by putting more efforts.
3. Show 'goodwill' on others. Love others. Allow others to grow. Basically, the goodwill reflects on the originator and multiplies itself on everybody. This will facilitate collinearity, focus, coherence, and strength to achieve the goals.

1.9 LIVING PEACEFULLY

To live peacefully, one should start install peace within (self). Charity begins at home. Then one can spread peace to family, organisation where one works, and then to the world, including the environment. Only who are at peace can spread peace. You can not gift an article which you do not possess. The

essence of oriental philosophy is that one should not *fight* for peace. It is oxymoron. War or peace can be won only by peace, and *not by wars* !

One should adopt the following means to live peacefully, in the world:

Nurture

1. Order in one's life (self-regulation, discipline, and duty).
2. Pure thoughts in one's soul (loving others, blessing others, friendly, and not criticizing or hurting others by thought, word or deed).
3. Creativity in one's head (useful and constructive).
4. Beauty in one's heart (love, service, happiness, and peace).

Get

5. Good health/body (physical strength for service).

Act

6. Help the needy with head, heart, and hands (charity). Service to the poor is considered holier than the service to God.
7. Not hurting and torturing others either physically, verbally, or mentally.

The following are the factors that promote living, with internal and external peace:

1. Conducive environment (safe, ventilated, illuminated and comfortable).
2. Secured job and motivated with 'recognition and reward'.
3. Absence of threat or tension by pressure due to limitations of money or time.
4. Absence of unnecessary interference or disturbance, except as guidelines.
5. Healthy labor relations and family situations.
6. Service to the needy (physically and mentally-challenged) with love and sympathy.

1.10 CARING

Caring is feeling for others. It is a process which exhibits the interest in, and support for, the welfare of others with fairness, impartiality and justice in all activities, among the employees, in the context of professional ethics. It includes showing respect to the feelings of others, and also respecting and preserving the interests of all others concerned. Caring is reflected in activities such as friendship, membership in social clubs and professional societies, and through various transactions in the family, fraternity, community, country and in international councils.

In the present day context, caring for the environment (including the *fauna and flora*) has become a necessity for our very survival. If we do not care for the environment, the environment will scare us.

1.11 SHARING

Primarily, caring influences 'sharing'. Sharing is a process that describes the transfer of knowledge (teaching, learning, and information), experience (training), commodities (material possession) and facilities with others. The transfer should be genuine, legal, positive, voluntary, and without any expectation in return. However, the proprietary information it should not be shared with outsiders. Through this process of sharing, experience, expertise, wisdom and other benefits reach more people faster. Sharing is voluntary and it can not be driven by force, but motivated successfully through ethical principles. In short, sharing is 'charity'

For the humanity, 'sharing' is a *culture*. The 'happiness and wealth' are multiplied and the 'crimes and sufferings' are reduced, by sharing. It paves the way for peace and obviates militancy. Philosophically, the sharing maximizes the happiness for all the human beings. In terms of psychology, the fear, divide, and distrust between the 'haves' and 'have-nots' disappear. Sharing not only paves the way to prosperity, early and easily, and sustains it. Economically speaking, benefits are maximized as there is no wastage or loss, and everybody gets one's needs fulfilled and satisfied. Commercially speaking, the profit is maximized. Technologically, the productivity and utilization are maximized by sharing.

In the industrial arena, code-sharing in airlines for bookings on air travels and the common Effluent Treatment Plant constructed for small-scale industries in the industrial estates, are some of the examples of sharing. The co-operative societies for producers as well as consumers are typical examples of sharing of the goods, profit and other social benefits.

Here is an anecdote that illustrates the benefits of sharing, for the young minds!

The shouting...the screaming...the fighting. That was the breaking point for me as I poured out

mywoestomymother. "How can I get them to share as well as we did as kids?", I pleaded.

Laughter was her reply. "Well, thanks a lot, mom," I said. "I'm sorry," she chuckled, "but you didn't always share." She went on to explain about the "Box of Misbehaved Toys." Every time we fought over a toy, she would quietly take that and put it into the box.

Yes, I did remember that box. I also remember it wasn't always fair since one person may have caused all the commotion. But my mother was consistent. No matter what the reason for the struggle was, the toy disappeared into the box for one week. No questions asked, and no chance of parole. My siblings and I soon learned that sharing a toy was better than losing it. Often, one person would decide to just wait for a time when no one else was playing with the toy, rather than fight and lose it. It was not a perfect system, but I tried it anyway

That box was a shock to my kids and it was close to full, within a few days.....As the weeks progressed, I noticed the box was emptier and the arguing was less. Today, I heard quiet music to my ears as my son said to his sister, "That's OK, you can play with it."

This story illustrates the worthy joy of sharing as compared to the pain of losing.

1.12 HONESTY

Honesty is a virtue, and it is exhibited in two aspects namely,

- (a) Truthfulness and
- (b) Trustworthiness.

Truthfulness is to face the responsibilities upon telling truth. One should keep one's word or promise. By admitting one's mistake committed (one needs courage to do that!), it is easy to fix them. Reliable engineering judgment, maintenance of truth, defending the truth, and communicating the truth, only when it does 'good' to others, are some of the reflections of truthfulness. But trustworthiness is maintaining integrity and taking responsibility for personal performance. People abide by law and live by mutual trust. They play the right way to win, according to the laws or rules (legally and morally). They build trust through reliability and authenticity. They admit their own mistakes and confront unethical actions in others and take tough and principled stand, even if unpopular.

Honesty is mirrored in many ways. The common reflections are:

- (a) Beliefs (intellectual honesty).
- (b) Communication (writing and speech).

- (c) Decisions (ideas, discretion).
- (d) Actions (means, timing, place, and the goals). and
- (e) Intended and unintended results achieved.

As against this, some of the actions of an engineer that leads to dishonesty are:

1. *Lying*: Honesty implies avoidance of lying. An engineer may communicate wrong or distorted test results intentionally or otherwise. It is giving *wrong* information to the *right* people.
2. *Deliberate deception*: An engineer may judge or decide on matters one is not familiar or with insufficient data or proof, to impress upon the customers or employers. This is a self deceit.
3. *Withholding the information*: It means hiding the facts during communication to one's superior or subordinate, intentionally or otherwise.
4. *Not seeking the truth*: Some engineers accept the information or data, without applying their mind and seeking the truth.
5. *Not maintaining confidentiality*: It is giving *right* information to *wrong* people. The engineers should keep information of their customers/clients or of their employers confidential and should not discuss them with others.
6. Giving professional judgment under the influence of extraneous factors such as personal benefits and prejudice. The laws, experience, social welfare, and even conscience are given a go-bye by such actions. Certainly this is a higher-order crime.

1.13 COURAGE

Courage is the tendency to accept and face risks and difficult tasks in rational ways. Self-confidence is the basic requirement to nurture courage.

Courage is classified into three types, based on the types of risks, namely

- (a) Physical courage,
- (b) Social courage, and
- (c) Intellectual courage. In physical courage, the thrust is on the adequacy of the physical strength, including the muscle power and armaments. People with high adrenalin, may be prepared to face challenges for the mere 'thrill' or driven by a decision to 'excel'. The social courage involves the decisions and actions to change the order, based on the conviction for or against certain social behaviors. This requires leadership abilities, including empathy and sacrifice, to mobilize and motivate the followers, for the social cause. The intellectual courage is inculcated in people through acquired knowledge, experience, games, tactics, education, and training. In professional ethics, courage is applicable to the employers, employees, public, and the press.

Look before you leap. One should perform Strengths, Weakness, Opportunities, and Threat (SWOT) analysis. Calculate (estimate) the risks, compare with one's strengths, and anticipate the end results, while taking decisions and before getting into action. Learning from the past helps. Past experience (one's own or borrowed!) and wisdom gained from self-study or others will prepare one to plan and act

with self-confidence, succeed in achieving the desired ethical goals through ethical means. Opportunities and threat existing and likely to exist in future are also to be studied and measures to be planned. This anticipatory management will help any one to face the future with courage.

Facing the criticism, owning responsibility, and accepting the mistakes or errors when committed and exposed are the expressions of courage. In fact, this sets their mind to be vigilant against the past mistakes, and creative in finding the alternate means to achieve the desired objectives. Prof. Sathish Dhawan, Chief of ISRO, was reported to have exhibited his courage and owned responsibility, when the previous space mission failed, but credited Prof. A.P.J. Abdul Kalam (now our revered President), when the subsequent mission succeeded.

The courageous people own and have shown the following characteristics, in their professions:

- (a) Perseverance (sustained hard work),
- (b) Experimentation (preparedness to face the challenges, that is, unexpected or unintended results),
- (c) Involvement (attitude, clear and firm resolve to act), and
- (d) Commitment (willing to get into action and to reach the desired goals by any alternative but ethical means).

1.14 VALUING TIME

Time is rare resource. Once it is spent, it is lost for ever. It can not be either stored or recovered. Hence, time is the most perishable and most valuable resource too. This resource is continuously spent, whether any decision or action is taken or not.

The history of great reformers and innovators have stressed the importance of time and valuing time. The proverbs, 'Time and tide wait for nobody' and 'Procrastination is the thief of time' amply illustrate this point.

An anecdote to highlight the 'value of time' is as follows: To realize the value of one year, ask the student who has failed in the examinations; To realize the value of one month, ask the mother who has delivered a premature baby; to realize the value of one week, ask the editor of weekly; to realize the value of one day, ask the daily-wage laborer; to realize now the value of one hour, ask the lovers longing to meet; to realize the value of one minute, ask a person who has missed the train; to realize the value of one second, ask the person who has survived an accident; to realize the value one milli second, ask the person who has won the bronze medal in Olympics; to realize the value of one micro second, ask the NASA team of scientists; to realize the value of one nano-second, ask a Hardware engineer!; If you have still not realized the value of time, wait; are you an Engineer?

1.15 COOPERATION

It is a team-spirit present with every individual engaged in engineering. Co-operation is activity between two persons or sectors that aims at integration of operations (synergy), while not sacrificing the autonomy of either party. Further, working together ensures, coherence, i.e., blending of different skills required, towards common goals.

Willingness to understand others, think and act together and putting this into practice, is cooperation. Cooperation promotes collinearity, coherence (blend), co-ordination (activities linked in sequence or

priority) and the synergy (maximizing the output, by reinforcement). The whole is more than the sum of the individuals. It helps in minimizing the input resources (including time) and maximizes the outputs, which include quantity, quality, effectiveness, and efficiency.

According to professional ethics, cooperation should exist or be developed, and maintained, at several levels; between the employers and employees, between the superiors and subordinates, among the colleagues, between the producers and the suppliers (spare parts), and between the organisation and its customers.

The codes of ethics of various professional societies insist on appropriate cooperation to nourish the industry. The absence of cooperation leads to lack of communication, misinformation, void in communication, and undue delay between supply, production, marketing, and consumption. This is likely to demoralize and frustrate the employees, leading to collapse of the industry over time and an economic loss to the society.

The impediments to successful cooperation are:

1. Clash of ego of individuals.
2. Lack of leadership and motivation.
3. Conflicts of interests, based on region, religion, language, and caste.
4. Ignorance and lack of interest. By careful planning, motivation, leadership, fostering and rewarding team work, professionalism and humanism beyond the 'divides', training on appreciation to different cultures, mutual understanding 'cooperation' can be developed and also sustained.

1.16 COMMITMENT

Commitment means *alignment to goals and adherence to ethical principles during the activities*. First of all, one must believe in one's action performed and the expected end results (confidence). It means one should have the conviction without an iota of doubt that one will succeed. Holding sustained interest and firmness, in whatever ethical means one follows, with the fervent attitude and hope that one will achieve the goals, is commitment. It is the driving force to realize success.

This is a basic requirement for any profession. For example, a design engineer shall exhibit a sense of commitment, to make his product or project designed a beneficial contribution to the society. Only when the teacher (Guru) is committed to his job, the students will succeed in life and contribute 'good' to the society. The commitment of top management will naturally lead to committed employees, whatever may be their position or emoluments. This is bound to add wealth to oneself, one's employer, society, and the nation at large.

1.17 EMPATHY

Empathy is social radar. Sensing what others feel about, without their open talk, is the essence of empathy. Empathy begins with showing concern, and then obtaining and understanding the feelings of others, from others' point of view. It is also defined as the ability to put one's self into the psychological frame or reference or point of view of another, to know what the other person feels. It includes the imaginative projection into other's feelings and understanding of other's background such as parentage, physical and mental state, economic situation, and association. This is an essential ingredient for good human relations and transactions.

To practice 'Empathy', a leader must have or develop in him, the following characteristics⁵

1. *Understanding others*: It means sensing others feelings and perspectives, and taking active interest in their welfare.
2. *Service orientation*: It is anticipation, recognition and meeting the needs of the clients or customers.
3. *Developing others*: This means identification of their needs and bolstering their abilities. In developing others, the one should inculcate in him the 'listening skill' first. Communication = 22% reading and writing + 23% speaking + 55% listening
One should get the feed back, acknowledge the strength and accomplishments, and then coach the individual, by informing about what was wrong, and giving correct feedback and positive expectation of the subject's abilities and the resulting performance.
4. *Leveraging diversity* (opportunities through diverse people): This leads to enhanced organizational learning, flexibility, and profitability.
5. *Political awareness*: It is the ability to read political and social currents in an organization. The benefits of empathy include:
 1. Good customer relations (in sales and service, in partnering).
 2. Harmonious labor relations (in manufacturing).
 3. Good vendor-producer relationship (in partnering.) Through the above three, we can maximize the output and profit, as well as minimizing the loss. While dealing with customer complaints, empathy is very effective in realising the unbiased views of others and in admitting one's own limitations and failures. According to Peter Drucker, purpose of the business is not to *make a sale*, but to *make and keep a customer*. Empathy assists one in developing courage leading to success!

1.18 SELF-CONFIDENCE

Certainty in one's own capabilities, values, and goals, is self-confidence. These people are usually positive thinking, flexible and willing to change. They respect others so much as they respect themselves.

Self-confidence is positive attitude, wherein the individual has some positive and realistic view of himself, with respect to the situations in which one gets involved. The people with self-confidence exhibit courage to get into action and unshakable faith in their abilities, whatever may be their positions. They are not influenced by threats or challenges and are prepared to face them and the natural or unexpected consequences.

The self-confidence in a person develops a sense of partnership, respect, and accountability, and this helps the organization to obtain maximum ideas, efforts, and guidelines from its employees. The people with self-confidence have the following characteristics:

1. A self-assured standing,
2. Willing to listen to learn from others and adopt (flexibility),
3. Frank to speak the truth, and
4. respect others' efforts and give due credit.

On the contrary, some leaders expose others when failure occurs, and own the credit when success comes.

The factors that shape self-confidence in a person are:

1. Heredity (attitudes of parents) and family environment (elders),
2. Friendship (influence of friends/colleagues),
3. Influence of superiors/role models, and
4. Training in the organization (e.g., training by Technical Evangelists at Infosys

Technologies). The following methodologies are effective in developing self-confidence in a person:

1. Encouraging SWOT analysis. By evaluating their strength and weakness, they can anticipate and be prepared to face the results.
2. Training to evaluate risks and face them (self-acceptance).
3. Self-talk . It is conditioning the mind for preparing the self to act, without any doubt on his capabilities. This make one accepts himself while still striving for improvement.
4. Study and group discussion, on the history of leaders and innovators (e.g., Sam Walton of Wal-Mart, USA).

1.19 CHALLENGES IN THE WORKPLACE

The biggest workplace challenge is said to be the employee's work ethics: showing up to work every day (interest in work and attendance), showing up to work on time (punctuality), taking pride in the quality of their work, commitment to the job, and getting along with others. This situation demands inculcation of good character in the workplace by employees.

1.19.1 Character

It is a characteristic property that defines the behavior of an individual. It is the pattern of virtues (morally-desirable features). Character includes attributes that determine a person's moral and ethical actions and responses. It is also the ground on which morals and values blossom.

People are divided into several categories, according to common tendencies such as ruthless, aggressiveness, and ambition, constricting selfishness, stinginess, or cheerfulness, generosity and goodwill. Individuals vary not only in the type of their character but also in the degree. Those whose lives are determined and directed by the prevailing habits, fashions, beliefs, attitudes, opinions and values of the society in which they live have at best a developed *social* as opposed to an *individual* character.

The character is exhibited through conduct. Character is determined by the expectations of society. Many act and live within its norms, refusing to fall below the required social minimum, failing to rise above the maximum expected of a normal member of the group. On one extreme are those that do not even conform to the minimum standards, and fail to acquire the socially-required behaviors, attitudes and values. These individuals have an unformed social character. At the other extreme are those whose beliefs, attitudes and values are determined internally by the strength of their own convictions. These are individuals with developed minds and formed characters of their own.

Individuals do not live or act in a vacuum. They exist and act in a human social environment of other people that constantly act on them and react to their actions. They also live in a natural environment of physical objects and material forces such as the winds and rains. And those with occult and spiritual

traditions recognize that there is also a subtle environment of other planes of existence, both higher planes of spiritual influence and lower planes of negative forces in universal nature seeking to act on the lives. All of the social, material and the occult planes constitute the field of human activity. Each of them functions according to its own laws or principles. Each of them has its own characteristic modes of action and influence on human life.

Character is the expression of the personality of a human being, and that it reveals itself in one's conduct. In this sense every human has a character. At the same time only human beings, not animals have character: it implies rationality. But in addition to this usage, the term is also employed in a narrower sense, as when we speak of a person "of character". In this connotation, character implies certain unity of qualities with a recognizable degree of *constancy* in mode of action. Psychology analyzes the elements of character to trace the laws of its growth, to distinguish the chief agencies which contribute to the formation of different types of character, and to classify them. Many psychologists world over, during the last 40 years have given a large quantity of acute observations on the topic of character. Still these contributions do not constitute a science.

1.19.2 The Four Temperaments⁵

The original endowment or native element in character with which the individual starts life is practically identical with what the Ancients recognized as *temperament*. From the times of Hippocrates, they distinguished four main types of temperaments: the Sanguine, the Choleric, the Phlegmatic, and the Melancholic. The modern speculation accepts the same classification, but under other names. These different types of temperaments are accounted for differences in physiological conditions of the tissues of the body, by diverse rates of activities in the processes of nutrition and waste, in the changes of nerve-energy, or in circulation, and by differences of tonicity in the nerves. Irrespective of the physiological explanation, the four-fold classification seems to be fair. Moreover, though scientists are still far from agreeing upon the precise elements in the organism on which temperament depends, the fact that different forms of temperaments have an organic basis such as *hormones* seems certain. Although our original temperament is given to us independently of our will by heredity, we play an important part in moulding our character, and we thus become responsible for certain ethical qualities in it.

Character has been defined as "*natural temperament completely fashioned by the will*". It is, in fact, a resultant of our acquired habits with our original disposition. The regular use of the intellect, the controlled activity of the imagination, the practice of judgment and reflection, all contribute to the formation and refinement of habits of mind. The frequent indulgence in particular forms of emotion, such as anger, envy, sympathy, melancholy, fear, and the like, fosters tendencies towards these sentiments which give a subconscious bent to a large part of man's behavior. But finally, the exercise of the will plays the predominant role in moulding the type of character. The manner and degree in which currents of thought and waves of emotion are initiated, guided, and controlled by the will, or allowed to follow the course of spontaneous impulse, has more effect in determining the resultant type of character than the quality of the thoughts or emotions themselves.

The life of the animal is entirely ruled by instinct from within, and by accidental circumstances from without. It is therefore incapable of acquiring a character. A human, through reasoning and the growth of reflection, by the exercise of choice against the impulse, gradually develops self-control; and it is by the exercise of this power that moral character is formed and reformed. Character is in fact

the outcome of a series of volitions, and it is for this reason we are responsible for our characters, as we are for the individual habits which go to constitute them.

1.19.3 Types of Character

From the four fundamental temperaments, various classifications of character have been adopted by different psychologists. The intellectual, the emotional, and the volitional or energetic are the chief types with A. Bain. M. Pérez, based on the phenomenon of movement, distinguishes characters as lively, slow, ardent, and well-balanced. M. Ribot, with more subjective division and excluding indefinite types as 'characterless', recognizes the forms as:

- (a) the sensitive (humble, contemplative and emotional,
- (b) the active (great and the mediocre), and
- (c) the apathetic (purely apathetic or dull), and
- (d) the intelligent.

1.19.4 Ethics and Character

Whilst psychology investigates the growth of different types of character, ethics considers the relative value of such types and the virtues which constitute them. The problem of the true moral ideal is a question of the relative value of different types of character. The effect on the person's character of a particular form of conduct is a universally accepted as a test of its moral quality. Different systems of ethics emphasize different virtues in constituting the ideal moral character.

With the utilitarian, who places the ethical end in the maximum happiness for the whole community, *benevolence* will form the primary element in the ideal character. For the stoic, fortitude and *self-control* are the chief excellences.

In all conceptions of ideal character, firmness of will, fortitude, constancy in adhering to principle or in pursuit of a noble aim are held important. A man of character is frequently equivalent to being capable of adhering to a fixed purpose. Another essential is the virtue of justice, the recognition of the rights, duties, and claims of others. The richer the culture of the mind, the larger the intellectual horizon, the broader the sympathies, the more will the character approximate to the ideal of human perfection.

1.19.5 Education and Character

The aim of education is not only the cultivation of the intellect but also the formation of moral character. Increased intelligence or physical skill may as easily be employed to the detriment or benefit of the community, if not accompanied by improved will. It is the function of ethics to determine the ideals of human character. The theory and science of education are to study the processes by which that end may be attained.

1.19.6 Building Character in the Workplace

Managers have to influence and employ creative means of stressing the importance of good character in the workplace, in the following ways^{6,7}:

1. Employee Hiring, Training, and Promotion Activities

- (a) Institute and adopt an organization policy statement to positive character in the workplace. For example, commitment to civility pledges. This may be communicated through printing on the back of the business cards of the employees.

- (b) Prominently and explicitly include character considerations in recruiting procedures, during interviews and in the hiring deliberations.
- (c) Emphasize the importance of character and adherence to the 'six pillars' of character in orientation, initial job training, and during in-service training. The six pillars of character are the ethical values, such as: trustworthiness, respect, responsibility, fairness, caring and citizenship. Respect means showing high regard for self, others, authority, property and country. It includes showing appreciation for cultural diversity by valuing all people as human beings. Responsibility is
 - (i) being accountable for one's actions,
 - (ii) being dependable in carrying out obligations and duties,
 - (iii) being reliable and consistent in word and action, and
 - (iv) being committed to community development. Integrity or fairness means showing the inner strength and courage to be truthful, trustworthy, fair and honest in all things. It includes acting justly and honorably. Caring means being kind, considerate, courteous, helpful, friendly and generous to others, and being compassionate by treating others as you would like to be treated. Citizenship means accepting and adopting civic rights and duties as a citizen of the country.
- (d) Include evaluation of fundamental character values such as honesty, promise keeping, accountability, fairness, and caring, in appraisals/reviews.
- (e) Institute recognition and reward system for the employees who exemplify the positive character. for example, awards and medals.
- (f) Think of your employees, especially the younger ones, as people whose personal and work values will be influenced by what you expect of them and how you treat them.
- (g) Think of your employees as present or future mentors, coaches, and volunteers.

2. Internal Communication

Use internal communication channels to create a friendly environment that praises positive role modeling at the workplace and in the community by encouraging voluntarism, and mentoring, e.g., through

- (a) Internal newsletters,
- (b) Workplace posters in canteens and recreation rooms,
- (c) Mailers, and
- (d) Electronic mails.

3. External Communication

In relations with customers, vendors and others, consciously communicate affirming messages about character and ethics, such as

- (a) Advertise and market honoring consensual values (the six pillars),
- (b) Assure that none of your products and services undermines character building,
- (c) Include positive messages about voluntarism and celebrate, and
- (d) 'Character counts' week in advertising, billings and other mailers.

4. Financial and Human Resources

- (a) Support local and national 'character' projects and the activities of the members by encouraging staff members to get involved. Offer incentives such as paying employees for the time they contribute at a local youth-service organization.
- (b) Sponsor 'character' movement through financial support.

5. Community Outreach

- (a) Use public outreach structures to encourage mentoring and other character-building programs.
- (b) Encourage educational and youth organizations to become active in character building.
- (c) Use corporate influence to encourage business groups (chambers of commerce, conference boards, and Rotary clubs) and other companies to support 'character' building.

1.20 SPIRITUALITY

Spirituality is a way of living that emphasizes the constant awareness and recognition of the spiritual dimension (mind and its development) of nature and people, with a dynamic balance between the material development and the spiritual development. This is said to be the great virtue of Indian philosophy and for Indians. Sometimes, spirituality includes the faith or belief in supernatural power/ God, regarding the worldly events. It functions as a fertilizer for the soil 'character' to blossom into values and morals.

Spirituality includes creativity, communication, recognition of the individual as human being (as opposed to a life-less machine), respect to others, acceptance (stop finding faults with colleagues and accept them the way they are), vision (looking beyond the obvious and not believing anyone blindly), and partnership (not being too authoritative, and always sharing responsibility with others, for better returns).

Spirituality is motivation as it encourages the colleagues to perform better. Remember, lack of motivation leads to isolation. Spirituality is also energy: Be energetic and flexible to adapt to challenging and changing situations. Spirituality is flexibility as well. One should not be too dominating. Make space for everyone and learn to recognize and accept people the way they are. Variety is the order of the day. But one can influence their mind to think and act together. Spirituality is also fun. Working is okay, but you also need to have fun in office to keep yourself charged up. Tolerance and empathy are the reflections of spirituality. Blue and saffron colors are said to be associated with spirituality.

Creativity in spirituality means conscious efforts to see things differently, to break out of habits and outdated beliefs to find new ways of thinking, doing and being. Suppression of creativity leads to violence. People are naturally creative. When they are forced to crush their creativity, its energy turns to destructive release and actions. Creativity includes the use of color, humor and freedom to enhance productivity. Creativity is fun. When people enjoy what they do, it is involvement. They work much harder.

1.20.1 Spirituality in the Workplace

Building spirituality in the workplace: Spirituality is promoted in the workplace by adhering to the following activities:

1. Verbally respect the individuals as humans and recognize their values in all decisions and actions.

2. Get to know the people with whom you work and know what is important to them. Know their goals, desires, and dreams too.
3. State your personal ethics and your beliefs clearly.
4. Support causes outside the business.
5. Encourage leaders to use value-based discretion in making decisions.
6. Demonstrate your own self-knowledge and spirituality in all your actions.
7. Do unto others as you would have them do unto you.

1.20.2 Spirituality for Corporate Excellence⁸

The spiritual traits to be developed for excellence in corporate activities are listed as follows:

1. *Self-awareness* — Realization of self-potential. A human has immense capability but it needs to be developed.
2. *Alertness in observation and quickness in decision making*, i.e., spontaneity which includes quick reflexes, no delay but also no hasty decisions.
3. *Being visionary and value based* — This includes an attitude towards future of the organization and the society, with clear objectives.
4. *Holism* — Whole system or comprehensive views and interconnected with different aspects. Holistic thinking, which means the welfare of the self, family, organization and the society including all other living beings and environment.
5. *Compassion* — Sympathy, empathy and concern for others. These are essential for not only building the team but also for its effective functioning.
6. *Respect for diversity* — It means search for unity in diversity i.e., respect others and their views.
7. *Moral Autonomy* — It means action based on rational and moral judgment. One need not follow the crowd or majority i.e., band-wagon effect.
8. *Creative thinking and constant reasoning* — Think if we can do something new and if we can improve further?
9. *Ability to analyze and synthesize* — Refrain from doing something only traditional.
10. *Positive views of adversity* — Make adversities one's source of power—a typical Karma yogi's outlook! Every threat is converted into opportunity.
11. *Humility* — The attitude to accept criticism (it requires courage!) and willing to correct. It includes modesty and acknowledging the work of colleagues.
12. *Sense of vocation* — Treat the duty as a service to society, besides your organization.

Professional Ethics

2.0 OVERVIEW

Engineering Ethics is the activity and discipline aimed at

- (a) understanding the moral values that ought to guide engineering profession or practice,
- (b) resolving moral issues in engineering, and
- (c) justifying the moral judgments in engineering. It deals with set of moral problems and issues connected with engineering.

Engineering ethics is defined by the codes and standards of conduct endorsed by engineering (professional) societies with respect to the particular set of beliefs, attitudes and habits displayed by the individual or group.

Another important goal of engineering ethics is the discovery of the set of justified moral principles of obligation, rights and ideals that ought to be endorsed by the engineers and apply them to concrete situations. Engineering is the largest profession and the decisions and actions of engineers affect all of us in almost all areas of our lives, namely public safety, health, and welfare.

2.01 Scope

The scope of engineering ethics are twofold:

1. Ethics of the workplace which involves the co-workers and employees in an organization.
2. Ethics related to the product or work which involves the transportation, warehousing, and use, besides the safety of the end product and the environment outside the factory.

2.02 Approach

There are conventionally two approaches in the study of ethics:

1. Micro-ethics which deals with decisions and problems of individuals, professionals, and companies.
2. Macro-ethics which deals with the societal problems on a regional/national level. For example, global issues, collective responsibilities of groups such as professional societies and consumer groups.

2.1 SENSES OF ENGINEERING ETHICS

There are two different senses (meanings) of engineering ethics, namely the Normative and the Descriptive senses. The normative sense include:

- (a) Knowing moral values, finding accurate solutions to moral problems and justifying moral judgments in engineering practices,
- (b) Study of decisions, policies, and values that are morally desirable in the engineering practice and research, and
- (c) Using codes of ethics and standards and applying them in their transactions by engineers. The descriptive sense refers to what specific individual or group of engineers believe and act, without justifying their beliefs or actions.

2.2 VARIETY OF MORAL ISSUES

It would be relevant to know why and how do moral issues (problems) arise in a profession or why do people behave unethically? The reasons for people including the employer and employees, behaving unethically may be classified into three categories:

1. Resource Crunch

Due to pressure, through time limits, availability of money or budgetary constraints, and technology decay or obsolescence. Pressure from the government to complete the project in time (e.g., before the elections), reduction in the budget because of sudden war or natural calamity (e.g., Tsunami) and obsolescence due technology innovation by the competitor lead to manipulation and unsafe and unethical execution of projects.

Involving individuals in the development of goals and values and developing policies that allow for individual diversity, dissent, and input to decision-making will prevent unethical results.

2. Opportunity

- (a) Double standards or behavior of the employers towards the employees and the public. The unethical behaviors of World Com (in USA), Enron (in USA as well as India) executives in 2002 resulted in bankruptcy for those companies,
- (b) Management projecting their own interests more than that of their employees. Some organizations over-emphasize short-term gains and results at the expense of themselves and others,
- (c) Emphasis on results and gains at the expense of the employees, and
- (d) Management by objectives, without focus on empowerment and improvement of the infrastructure.

This is best encountered by developing policies that allow 'conscience keepers' and whistle blowers and appointing ombudsman, who can work confidentially with people to solve the unethical problems internally.

3. Attitude

Poor attitude of the employees set in due to

- (a) Low morale of the employees because of dissatisfaction and downsizing,

- (b) Absence of grievance redressal mechanism,
- (c) Lack of promotion or career development policies or denied promotions,
- (d) Lack of transparency,
- (e) Absence of recognition and reward system, and
- (f) Poor working environments.

Giving ethics training for all, recognizing ethical conduct in work place, including ethics in performance appraisal, and encouraging open discussion on ethical issues, are some of the directions to promote positive attitudes among the employees⁹.

To get firm and positive effect, ethical standards must be set and adopted by the senior management, with input from all personnel.

2.3 TYPES OF INQUIRIES

The three types of inquiries, in solving ethical problems are: normative inquiry, conceptual inquiry, and factual or descriptive inquiry.

The three types of inquiries are discussed below to illustrate the differences and preference.

1. Normative Inquiry

It seeks to identify and justify the morally-desirable norms or standards that should guide individuals and groups. It also has the theoretical goal of justifying particular moral judgments. Normative questions are about what ought to be and what is good, based on moral values. For example,

1. How far does the obligation of engineers to protect public safety extend in any given situation?
2. When, if ever, should engineers be expected to blow whistle on dangerous practices of their employers?
3. Whose values ought to be primary in making judgment about acceptable risks in design for a public transport system or a nuclear plant? Is it of management, senior engineers, government, voters or all of them?
4. When and why is the government justified in interfering with the organisations?
5. What are the reasons on which the engineers show their obligations to their employees or clients or the public?

2. Conceptual Inquiry

It is directed to clarify the meaning of concepts or ideas or principles that are expressed by words or by questions and statements. For example,

- (a) What is meant by safety?
- (b) How is it related to risk?
- (c) What is a bribe?
- (d) What is a profession?

When moral concepts are discussed, normative and conceptual issues are closely interconnected.

3. Factual or Descriptive Inquiry

It is aimed to obtain facts needed for understanding and resolving value issues. Researchers conduct factual inquiries using mathematical or statistical techniques. The inquiry provide important information on business realities, engineering practice, and the effectiveness of professional societies in fostering moral conduct, the procedures used in risk assessment, and psychological profiles of engineers. The facts provide not only the reasons for moral problems but also enable us to develop alterative ways of resolving moral problems. For example,

1. How were the benefits assessed?
2. What are procedures followed in risk assessment?
3. What are short-term and long-term effects of drinking water being polluted? and
4. Who conducted the tests on materials?

2.4 MORAL DILEMMA

2.4.1 Definition

Dilemmas are situations in which moral reasons come into conflict, or in which the application of moral values are problems, and one is not clear of the immediate choice or solution of the problems. Moral reasons could be rights, duties, goods or obligations. These situations do not mean that things had gone wrong, but they only indicate the presence of moral complexity. This makes the decision making complex. For example, a person promised to meet a friend and dine, but he has to help his uncle who is involved in an accident — one has to fix the priority.

There are some difficulties in arriving at the solution to the problems, in dilemma. The three complex situations leading to moral dilemmas are:

1. The problem of *vagueness*: One is unable to distinguish between good and bad (right or wrong) principle. Good means an action that is obligatory. For example, code of ethics specifies that one should obey the laws and follow standards. Refuse bribe or accept the gift, and maintain confidentiality
2. The problem of *conflicting reasons*: One is unable to choose between two good moral solutions. One has to fix priority, through knowledge or value system.
3. The problem of *disagreement*: There may be two or more solutions and none of them mandatory. These solutions may be better or worse in some respects but not in all aspects. One has to interpret, apply different morally reasons, and analyze and rank the decisions. Select the best suitable, under the existing and the most probable conditions.

2.4.2 Steps to Solve Dilemma

The logical steps in confronting moral dilemma are:

1. Identification of the moral factors and reasons. The clarity to identify the relevant moral values from among duties, rights, goods and obligations is obtained (conceptual inquiry). The most useful resource in identifying dilemmas in engineering is the professional codes of ethics, as interpreted by the professional experience. Another resource is talking with colleagues who can focus or narrow down the choice of values.

2. Collection of all information, data, and facts (factual inquiry) relevant to the situation.
3. Rank the moral options i.e., priority in application through value system, and also as obligatory, all right, acceptable, not acceptable, damaging, and most damaging etc. For example, in fulfilling responsibility, the codes give prime importance to public safety and protection of the environment, as compared to the individuals or the employers (conceptual inquiry).
4. Generate alternate courses of action to resolve the dilemma. Write down the main options and sub-options as a matrix or decision tree to ensure that all options are included.
5. Discuss with colleagues and obtain their perspectives, priorities, and suggestions on various alternatives.
6. Decide upon a final course of action, based on priority fixed or assumed. If there is no ideal solution, we arrive at a partially satisfactory or 'satisficing' solution.

2.5 MORAL AUTONOMY

Moral autonomy is defined as, decisions and actions exercised on the basis of moral concern for other people and recognition of good moral reasons. Alternatively, moral autonomy means 'self determinant or independent'. The autonomous people hold moral beliefs and attitudes based on their critical reflection rather than on passive adoption of the conventions of the society or profession. Moral autonomy may also be defined as a skill and habit of thinking rationally about the ethical issues, on the basis of moral concern.

Viewing engineering as social experimentation will promote autonomous participation and retain one's professional identity. Periodical performance appraisals, tight-time schedules and fear of foreign competition threatens this autonomy. The attitude of the management should allow latitude in the judgments of their engineers on moral issues. If management views *profitability* is more important than *consistent quality and retention of the customers* that discourage the moral autonomy, engineers are compelled to seek the support from their professional societies and outside organizations for moral support. It appears that the blue-collar workers with the support of the union can adopt better autonomy than the employed professionals. Only recently the legal support has been obtained by the professional societies in exhibiting moral autonomy by professionals in this country as well as in the West.

The engineering skills related to moral autonomy are listed as follows:

1. Proficiency in recognizing moral problems in engineering and ability to distinguish as well as relate them to problems in law, economics, and religion,
2. Skill in comprehending, clarifying, and critically-assessing arguments on different aspects of moral issues,
3. Ability to form consistent and comprehensive view points based on facts,
4. Awareness of alternate responses to the issues and creative solutions for practical difficulties,
5. Sensitivity to genuine difficulties and subtleties, including willingness to undergo and tolerate some uncertainty while making decisions,
6. Using rational dialogue in resolving moral conflicts and developing tolerance of different perspectives among morally reasonable people, and
7. Maintaining moral integrity.

Autonomy which is the independence in making decisions and actions, is different from authority. Authority provides freedom for action, specified within limits, depending on the situation. Moral autonomy and respect for authority can coexist. They are not against each other. If the authority of the engineer and the moral autonomy of the operator are in conflict, a consensus is obtained by the two, upon discussion and mutual understanding their limits.

2.6 MORAL DEVELOPMENT (THEORIES)

1. Kohlberg Theory

Moral development in human being occurs over age and experience. Kohlberg suggested there are three levels of moral development, namely pre-conventional, conventional, and post-conventional, based on the type of reasoning and motivation of the individuals in response to moral questions.

In the pre-conventional level, right conduct for an individual is regarded as whatever directly benefits oneself. At this level, individuals are motivated by obedience or the desire to avoid punishment or to satisfy their own needs or by the influence by power on them. All young children exhibit this tendency. At the conventional level, people respect the law and authority. Rules and norms of one's family or group or society is accepted, as the standard of morality. Individuals in this level want to please or satisfy, and get approval by others and to meet the expectations of the society, rather than their self interest (e.g., good boy, good girl). Loyalty is regarded as most important. Many adults do not go beyond this level.

At the post-conventional level, people are called *autonomous*. They think originally and want to live by universally good principles and welfare of others. They have no self-interest. They live by principled conscience. They follow the golden rule, 'Do unto others as you would have them do unto you'. They maintain moral integrity, self-respect and respect for others.

Kohlberg believed that individuals could only progress through these stages, one stage at a time.

He believed that most of the moral development occurs through social interactions.

2. Gilligan's Theory

Carol Gilligan found that Kohlberg's theory had a strong male bias. According to Gilligan's studies, men had a tendency to solve problems by applying abstract moral principles. Men were found to resolve moral dilemma by choosing the most important moral rule, overriding other rules. In contrast, women gave importance to preserve personal relationships with all the people involved. The context oriented emphasis on maintaining personal relationships was called the *ethics of care*, in contrast with the *ethics of rules and rights* adopted by men.

Gilligan revised the three levels of moral development of Kohlberg, as stages of growth towards ethics of caring. The pre-conventional level, which is same as that of Kohlberg's first one, right conduct, is viewed in a selfish manner solely as what is good for oneself. The second level called *conventional level*, the importance is on not hurting others, and willing to sacrifice one's own interest and help others. This is the characteristic feature of women. At the post-conventional level, a reasoned balance is found between caring about others and pursuing the self-interest. The balance one's own need and the needs of others, is aimed while maintaining relationship based on mutual caring. This is achieved by context-oriented reasoning, rather than by hierarchy of rules.

The theories of moral development by Kohlberg and Gilligan differ in the following respects.

Kohlberg's Theory	Carol Gilligan's Theory
A. Basic Aspects	
<ol style="list-style-type: none"> 1. Is based on the study on men. 2. Men give importance to moral rule. 3. Ethics of rules and rights. 	<ol style="list-style-type: none"> 1. Is based on the study on men and women 2. Women always want to keep up the personal relationships with all the persons involved in the situations. 3. Women give attention to circumstances leading to critical situations rather than rules: (context-oriented and ethics of care)
B Characteristic Features	
<ol style="list-style-type: none"> 1. Justice 2. Factual 3. Right or wrong 4. Logic only 5. Logic and rule-based 6. Less of caring 7. Matter of fact (practical) 8. Present focus 9. Strict rules 10. Independence 11. Rigid 12. Taking a commanding role 13. Transactional approach 	<ol style="list-style-type: none"> 1. Reason 2. Emotional 3. Impact on relationships 4. Compassion too 5. Caring and concern 6. More of caring 7. Abstract 8. Future focus 9. Making exceptions 10. Dependence 11. Human-oriented 12. Shying away from decision-making 13. Transformational approach

The difference in these two theories is explained through the well-known example, *Heinz's dilemma*¹. Heinz being poor and a debtor could not buy the costly medicine for his sick wife, at ten times the normal cost. Initially he begged the Pharmacist to sell at half the price or allow him to pay for it later. Pharmacist refused to oblige him either way. Finally he forcibly entered the Pharmacy and stole the drug.

According to Kohlberg study, men observed that the theft was morally 'wrong' at the conventional level, because the property right was violated. But men at the post-conventional level, concluded that the theft was 'right', as the life of the human being was in danger. But women observed that Heinz was wrong. They observed that instead of stealing he could have tried other solutions (threatening or payment in installments?) to convince the Pharmacist. Gilligan however attributed the decision by women as context-oriented and not on the basis of rules ranked in the order of priority.

2.7 CONSENSUS AND CONTROVERSY

In the study of moral autonomy, consensus and controversy are relevant factors to discuss on. Consensus means agreement and controversy means conflict or disagreement.

In exercising moral autonomy, one is not likely to obtain the same results as by others. This situation is likely to end in a controversy. In this case, good amount of tolerance among the individuals who are autonomous, reasonable and responsible is necessary. This does not mean forcing the engineers to reach unique moral solutions . Many reasonable solutions are possible to a given ethical problem. The ethics make the engineers realize the importance of tolerance among them, in case of disagreement while applying moral autonomy.

2.8 PROFESSION

2.8.1 Definitions

- A. PROFESSION is defined as any occupation/job/vocation that requires advanced **expertise** (skills and knowledge), self -regulation, and concerted service to the public good. It brings a high status , socially and economically. The characteristics of a profession are:
1. *Advanced expertise:* Many professions require sophisticated skills (do-how) and theoretical knowledge (know-how and why). Formal education, training, continuing education, updating are needed.
 2. *Self regulation:* Professional societies play important role in setting standards for admission to profession, drafting codes of ethics, enforcing standards of conduct, and representing the profession before the public and the government.
 3. *Public good:* The occupation provides some important public good, by concerted efforts to maintain ethical standards. For example, a physician promotes health, a lawyer protects the legal rights, an engineer provides a product or a project for use by the public towards their health, welfare, and safety. Teaching is also claimed as a profession as it helps shaping and training the minds of the students, young as well as old.

Some argue that jobs such as carpenter, barbers, porters, and drivers are to be recognized as professions. It is open for discussion. Such things can not be decided by referring to dictionary alone. A thorough analysis of the activities expected of these jobs is to be made and checked

with explanation of the requirements of a profession before deciding it as profession . For example, having been engaged for driving one's vehicle is not a profession. But an ace driver who is engaged by a travel agency to drive different types of cars for tourists extends courtesy to the customers, requires education, expertise (a valid driving license), and respect to the public. His job may be termed as a profession. A mercenary is not a professional as he acts against public good

- B. PROFESSIONAL relates to a person or any work that a person does on profession, and which requires expertise (skills and knowledge), self-regulation and results in public good. The term professional means a 'person' as well as a 'status' .
- C. PROFESSIONALISM : It is the status of a professional which implies certain attitudes or typical qualities that are expected of a professional. According to **Macintyre**, professionalism is defined as the *services related to achieving the public good, in addition to the practices of the knowledge of moral ideals.*

The *criteria* for achieving and sustaining professional status or professionalism are:

1. *Advanced expertise*: The expertise includes sophisticated skills and theoretical knowledge in exercising judgment. This means a professional should analyse the problem in specific known area, in an objective manner.
2. *Self-regulation*: One should analyse the problem independent of self-interest and direct to a decision towards the best interest of the clients/customers. An autonomous judgment (unbiased and on merits only) is expected. In such situations, the codes of conduct of professional societies are followed as guidance.
3. *Public good*: One should not be a mere paid employee of an individual or a teaching college or manufacturing organization, to execute whatever the employer wants one to do. The job should be recognised by the public. The concerted efforts in the job should be towards promotion of the welfare, safety, and health of the public.

2.8.2 Characteristics

The characteristics of the 'profession' as distinct from 'non-professional occupation' are listed as follows:

1. Extensive Training

Entry into the profession requires an extensive period of training of intellectual (competence) and moral (integrity) character. The theoretical base is obtained through formal education, usually in an academic institution. It may be a Bachelor degree from a college or university or an advanced degree conferred by professional schools.

2. Knowledge and Skills

Knowledge and skills (competence) are necessary for the well-being of the society. Knowledge of physicians protects us from disease and restores health. The lawyer's knowledge is useful when we are sued of a crime, or if our business is to be merged or closed or when we buy a property. The Chartered Accountant's knowledge is important for the success of recording financial transactions or when we file the income return. The knowledge, study, and research of the engineers are required for the safety of the air plane, for the technological advances and for national defense.

3. Monopoly

The monopoly control is achieved in two ways:

- (a) the profession convinces the community that only those who have graduated from the professional school should be allowed to hold the professional title. The profession also gains control over professional schools by establishing accreditation standards
- (b) By persuading the community to have a licensing system for those who want to enter the profession. If practicing without license, they are liable to pay penalties.

4. Autonomy in Workplace

Professionals engaged in private practice have considerable freedom in choosing their clients or patients. Even the professionals working in large organizations exercise a large degree of impartiality, creativity and discretion (care with decision and communication) in carrying their responsibilities. Besides this, professionals are empowered with certain rights to establish their autonomy.

Accordingly physicians must determine the most appropriate medical treatments for their patients and lawyers must decide on the most successful defense for their clients. The possession of specialized knowledge is thus a powerful defense of professional autonomy.

5. Ethical Standards

Professional societies promulgate the codes of conduct to regulate the professionals against their abuse or any unethical decisions and actions (impartiality, responsibility) affecting the individuals or groups or the society.

2.9 MODELS OF PROFESSIONAL ROLES

Promotion of public good is the primary concern of the professional engineers. There are several role models to whom the engineers are attracted. These models provoke their thinking, attitudes and actions.

1. Savior

The engineer as a savior, save the society from poverty, illiteracy, wastage, inefficiency, ill health, human (labor) dignity and lead it to prosperity, through technological development and social planning. For example, R.L. Stevenson.

2. Guardian

He guards the interests of the poor and general public. As one who is conversant with technology development, is given the authority befitting his expertise to determine what is best suited to the society. For example, Lawrence of Arabia (an engineer).

3. Bureaucratic Servant

He serves the organization and the employers. The management of an enterprise fixes its goals and assigns the job of problem solving to the engineer, who accepts the challenge and shapes them into concrete achievements. For example, Jamshedji Tata.

4. Social Servant

It is one who exhibits social responsibility. The engineer translates the interest and aspirations of the society into a reality, remembering that his true master is the society at large. For example, Sir M.Viswesvarayya.

5. Social Enabler and Catalyst

One who changes the society through technology. The engineer must assist the management and the society to understand their needs and make informed decisions on the desirable technological development and minimize the negative effects of technology on people and their living environment. Thus, he shines as a social enabler and a catalyst for further growth. For example, Sri Sundarlal Bahuguna.

6. Game Player

He is neither a servant nor master. An engineer is an assertive player, not a passive player who may carry out his master's voice. He plays a unique role successfully within the organization, enjoying the excitement of the profession and having the satisfaction of surging ahead in a competitive world. For example, Narayanamurthy, Infosys and Dr. Kasthurirangan, ISRO.

2.10 RESPONSIBILITY

2.10.1 Senses

There are different senses of responsibility, such as:

1. *Characteristic Quality*

Primarily responsibility implies duty with care and efforts.

2. *Obligations*

These are one's moral responsibility i.e., duty to act right and in moral ways. The obligations such as honesty, fairness, and decency are incumbent on every one. In addition to this, we have role responsibilities assigned by taking up various roles, such as parents, inspectors, and employees. For example, a Safety Engineer has a responsibility to make regular inspections in a factory shops.

3. *General Moral Capacity*

One has the general capacity for moral agency, including the understanding and action on moral reasons.

4. *Liability and Accountability*

Liability and Accountability for actions. It means that one is liable (with a legal sense) to meet the obligations in better ways. The person is likely to respond legally, if necessary.

Accountable means that one is willing to justify or defend the decisions, actions or means and outcomes. It could include offering a reasonable excuse or accepting the shame for not having met the end results or accepting the guilt for harming others. One is also answerable to the assessment by others on one's actions (means) or outcomes.

5. *Praiseworthiness/Blameworthiness*

When accountability for wrong actions or results is at issue, responsibility means blameworthy. When the right conduct or successful result is at issue, responsible is synonymous with praiseworthy.

2.10.2 Types

Different types of responsibilities exhibited in human transactions are:

1. *Moral Responsibility*

Moral responsibility as applied to a professional: A professional must be responsible morally, in creating internal good or good outcomes, and eliminating /minimizing un- intended side-effects, from engineering and technology. It includes:

- (a) *Obligations*: A commitment to moral actions (primary obligation to protect the safety of the human beings and respect their rights),
- (b) *Conscientious*: A comprehensive perspective to accept the duties, and diligently do the right things by putting their heart, head and hands (awareness of the experimental nature of the product/project, anticipating possible and unexpected outcomes and putting efforts to monitor them),
- (c) Accountability (being accountable for the decisions, actions, and the results of product/ project including safety), and
- (d) Praiseworthy/Blameworthy as applied to context of doing things right/doing things wrongly, respectively.

2. Causal Responsibility

It is being a cause of some event. For example, a child playing with matches cause a house to burn. The child is causally responsible, but the parent who left the child with matches, is morally responsible.

3. Job Responsibility

It consists of assigned tasks at the place of employment and achieving the objectives.

4. Legal Responsibility

It is the response required by law and includes legal obligations and accountability to meet them. Many of these responsibilities overlap with moral responsibility.

2.10.3 Responsible Professionalism

The most comprehensive virtue of engineers is responsible professionalism. It can also be called Professional Responsibility. This consists of five types of virtues, as follows:

1. Self-direction (Self-governance) virtues are fundamental and necessary in exercising moral responsibility. On the basis of 'understanding and cognition', it includes self-understanding, humility (proper assessment of one's character), and good moral judgment (termed as 'practical wisdom' by Aristotle). On the basis of 'commitment and action', it covers courage, self-discipline, perseverance, self-respect, and integrity. Honesty a virtue common to both bases as it implies truthfulness in thoughts and words and trustworthiness in actions.
2. Public-spirited virtues focus on the good of the clients and the public. It includes the respect for rights (to make decisions and face the risk), non-maleficence (not harming others intentionally). Engineering codes go a step further and prescribe beneficence that includes preventing or removing harm to others and also promoting the public safety, health, and welfare, generosity (helping the community by voluntarily giving their time, talent, and money-voluntary service to the professional society and community), and justice (unbiased) in all decisions and actions.
3. Team-work virtues enable the professionals to work successfully with others. They include collegiality, cooperativeness, communicative ability, and respect for legitimate authority. Responsible exercise of authority and the ability to motivate other to achieve are also the relevant to team-work virtues.
4. Proficiency virtues, which mean the mastery of technical skills (called as Intellectual Virtue by Aristotle). It includes competence (having qualified, licensed, and prepared to execute the job that is undertaken), diligence (alert to dangers, careful attention, and avoidance of laziness or workaholic nature), creativity (learning to respond to the changing technological society), excellence (perform at the highest level), and self-renewal through continuing education.
5. Cardinal (chief) virtues: Wisdom (prudence), courage (fortitude), temperance and justice. Some of these may overlap other virtues. They are called 'cardinal' (Latin: cardo, hinge) because they are hinges on which all virtues depend. These are also called *moral* (Latin: mores, fixed values) because they govern our actions, regulate our passions, and guide our conduct according to faith and reason. Wisdom is perception of truth and ability to distinguish between the right and wrong. Courage means a firm and elevated mind. Temperance represents order in words and actions. Justice is preserving humanity and observing the faith of contracts. Although these virtues ring religious tones, they are very relevant to the engineering practice.

2.10.4 Social Responsibility

Corporate organizations have social responsibility to all of their 'stakeholders'. This includes the well-being of the employees and their unions, socially responsible investors, customers, dealers, suppliers, local communities, governments, non-governmental organizations, and the business owners and managers. Besides showing concern with employee relations and other internal organizational matters, the organization is concerned with

- (a) how the product/project is marketed, used or misused, how it fails, and how it is disposed or discarded. The ways in which the used battery cells and computers are discarded have been debated in the engineers' forums.
- (b) protecting the work environment during manufacture as well as the external environment during transport or use
- (c) training the disadvantaged or physically-challenged workers
- (d) subcontracting and hiring practices, and
- (e) contribution to local communities to enrich their cultural, social, and civic life. It may be even compensatory against the harm to environment (e.g., planting trees).

Various types of responsibilities such as causal, moral, and legal are distinguished through appropriate examples, as shown below:

<i>Events</i>	<i>Responsibility</i>
1. A stray cattle on the rail track caused the derailment of goods train	(a) Although cattle is the cause, the owner of the cattle is morally responsible (b) For letting the cattle go astray on the railway track, that is trespassing the owner is legally responsible
2. A child playing with (safety?) matches causes fire	Although the child is the cause, the parents who who have left the match box within the reach of the child, are morally responsible
3. (a) Seth was driving a car. He failed to stop at the red signal, which caused an accident (b) Suppose he applied brakes, but they failed	(a) Seth is causally responsible (b) Seth has been negligent of maintenance of brakes
4. There was a forest fire. It was traced to camp fire at specific site and Raj was the last to use the campsite.	Raj is causally responsible for the forest fire he failed to put out the camp fire. Although the temperature was high, and the dry leaves helped the fire to spread, Raj allowed the fire to spread. Hence, he is the cause

(Contd...)

5. The products sold have caused harm while being used	The engineer or the engineering firm is legally responsible for the harmful effects of defects in their products. But they are not morally responsible for the harm or defects
6. A fitter lost one his eyes while inserting a chip by using a hammer	The hammer manufacturer was legally responsible on the basis of the doctrine of strict liability, which does not require any proof of effect in the design of the hammer. Morally the manufacturer was not responsible
7. In a contract, it is not implied that the engineer to be held for not observing the possibility of danger. But an accident occurs	The engineer is free from legal responsibility, but he has moral responsibility to observe the work done
8. A pandal erected by the contractor, in a marriage hall catches fire, due to a leakage of electric current	No legal responsibility for pandal contractor. Owner of the hall is morally responsible for the leakage
9. Question papers were leaked out by some persons, during transport	Controller of Examinations can not be held legally responsible, although he is morally responsible

2.10.5 Accountability

Accountability means:

1. The capacity to understand and act on moral reasons
2. Willingness to submit one's actions to moral scrutiny and be responsive to the assessment of others. It includes being answerable for meeting specific obligations, i.e., liable to justify (or give reasonable excuses) the decisions, actions or means, and outcomes (sometimes unexpected), when required by the stakeholders or by law.
3. Conscientiousness: It means:
 - (a) Being sensitive to full range of moral values and responsibilities and
 - (b) The willingness to upgrade their skills, put efforts, and reach the best balance possible among those considerations, and
4. Blameworthy/Praiseworthy: Own the responsibility for the good or wrong outcomes. Courage to accept the mistakes will ensure success in the efforts in future.

The terms 'corporate responsibility' and 'corporate accountability' have different meanings. Corporate responsibility emphasizes the voluntary compliance of a particular organization to particular codes of conduct. The groups of individuals in the organization are assigned responsibilities through policy manuals and flow charts. The corporate accountability means holding all the corporate organizations accountable to the public, employees, customers, and stock holders, as empowered by rules and laws.

2.10.6 Obligation

The safety and other obligations of professional engineers are justifiable based on the following aspects.

1. Moral obligations through laws and enforced codes of conduct
2. Through membership of professional society
3. Contractual agreement with the employers
4. By entry into career as engineer upon graduation from Engineering institutions and
5. By special employment agreements or agreement with professional societies.

The *paramount obligation* means, giving importance to the safety, health, and welfare of the public in performing the professional duties.

2.11 THEORIES ABOUT RIGHT ACTION (ETHICAL THEORIES)

2.11.1 Uses and Criteria

The ethical theories are useful in many respects.

1. In understanding moral dilemma. They provide clarity, consistency, systematic and comprehensive understanding.
2. It provides helpful practical guidance in moral issues towards the solution.
3. Justifying professional obligations and decisions, and
3. In relating ordinary and professional morality.

Different *criteria* may be applied for evaluating various ethical theories and deciding upon the

best

1. The theory must be clear and (coherent) formulated with concepts that are logically connected.
2. It must be internally consistent, i.e., none of its principles conflicts with any other
3. The theory and its defense must depend, only upon facts.
4. It must organize basic moral values in systematic and comprehensive manner. It is to fix priority of values and provide guidance in all situations
5. It must provide guidance compatible with our moral convictions (judgments) about concrete situations. For example, if an ethical theory says that it is all right for engineers to make explosive devices without the informed consent of the public, we can conclude that the theory is inadequate.

Theories and judgments are continually adjusted to each other until we reach a reflective equilibrium. Most of the theories converge towards the welfare of the humanity. The duty ethics and right ethics differ in great extent on their emphasis. But they remain complementary always.

2.11.2 Ethical Theories/Approaches

Several ethical theories have been developed over different times, each of them stressing certain ethical principles or features. Each stresses a view and many a times, we find that these theories converge and reinforce the ethics, in deciding upon the actions and justifying the results.

1. Utilitarian Theory

The term Utilitarianism was conceived in the 19th century by **Jeremy Bentham** and **John Stuart Mill** to help legislators determine which laws were morally best. They suggested that the standard of right conduct is maximization of good consequences. Good consequences mean either 'utilities' or the 'balance of good over evil'. This approach weighs the costs and benefits. Right actions are the ones that produce the greatest satisfaction of the preferences of the affected persons. In analyzing an issue in this approach, we have to:

- (a) Identify the various courses of action available to us.
- (b) Ask who will be affected by each action and what benefits or harms will be derived from each.
- (c) Choose the action that will produce the greatest benefits and the least harm. The ethical action is the one that provides the greatest good for the greatest number.

The ACT UTILITARIAN theory proposed by **J.S. Mill** (1806-73) focuses on actions, rather than on general rules. An action is right, if it generates the most overall good for the most people involved. The RULE UTILITARIAN theory, developed by **Richard Brandt** (1910-97), stressed on the rules, such as 'do not steal', 'do no harm others', 'do not bribe', as of primary importance. He suggested that individual actions are right when they are required by set of rules which maximizes the public good.

The act utilitarian theory permitted a few immoral actions. Hence, there was need to develop rule *utilitarian theory* to establish morality and justice, in the transactions. For example, stealing an old computer from the employer will benefit the employee more than the loss to the employer. As per Act, utilitarian this action is right. But rule utilitarian observes this as wrong, because the employee should act as 'faithful agent or trustee of the employees'. In another example, some undisciplined engineers are terminated with the blame for the mistakes they have not committed.

The process is unfair although this results in promotion of overall good.

2. Duty Ethics

- A. The duty ethics theory, proposed by **Immanuel Kant** (1724-1804) states, that actions are consequences of performance of one's duties such as, 'being honest', 'not cause suffering of others', 'being fair to others including the meek and weak', 'being grateful', 'keeping promises' etc. The stress is on the universal principle of respect for autonomy i.e., respect and rationality of persons. As per Kant we have duties to ourselves, as we are rational and autonomous beings. We have a duty not to commit suicide; a duty to develop our talents and a duty to avoid harmful drugs. Kant insisted that moral duties are categorical imperatives. They are commands that we impose on ourselves as well as other rational beings. For example, we should be honest because honesty is required by duty. A businessman is to be honest because honesty pays — in terms of profits from customers and from avoiding jail for dishonesty.
- B. On the other hand, the DUTY ethics theory, as enunciated by **John Rawl**, gave importance to the actions that would be voluntarily agreed upon by all persons concerned, assuming impartiality. His view emphasized the autonomy each person exercises in forming agreements

with other rational people. Rawls proposed two basic moral principles; (1) each person is entitled to the most extensive amount of liberty compatible with an equal amount for others, and (2) differences in social power and economic benefits are justified only when they are likely to benefit every one, including members of the most disadvantaged groups. The first principle is of prime importance and should be satisfied first. Without basic liberties other economic or social benefits can not be sustained for long. The second principle insists that to allow some people with great wealth and power is justified only when all other groups are benefited. In the business scenario, for example, the free enterprise is permissible so far it provides the capital needed to invest and prosper, thereby making job opportunities to the public and taxes to fund the government spending on the welfare schemes on the poor people.

C.W.D. Ross, the British philosopher introduced the term *prima facie duties*, which means duties might have justified exceptions. In fact, most duties are *prima facie* ones; some may have obligatory or permissible exceptions. Ross assumed that the *prima facie* duties are intuitively obvious (self-evident), while fixing priorities among duties. He noted that the principles such as 'Do not kill' and 'protect innocent life' involve high respect for persons than other principles such as, 'Do not lie' (less harmful). This theory is criticized on the fact, that the intuitions do not provide sufficient guideline for moral duty. He has listed various aspects of Duty Ethics that reflect our moral convictions, namely:

1. Fidelity : duty to keep promises.
2. Reparation : duty to compensate others when we harm them.
3. Gratitude : duty to thank those who help us.
4. Justice : duty to recognize merit.
5. Beneficence : duty to recognize inequality and improve the condition of others.
6. Self-improvement : duty to improve virtue and intelligence.
7. Non-maleficence : duty not to injure others.

3. Rights Theory

Rights are entitlement to act or to have another individual act in a certain way. Minimally, rights serve as a protective barrier, shielding individuals from unjustified infringement of their moral agency by others. For every right, we have a corresponding duty of noninterference.

- A. The RIGHTS approach to ethics has its roots in the 18th century philosopher **Immanuel Kant**, who focused on the individual's right to choose for oneself. According him, what makes human beings different from mere things is, that people have dignity based on their ability to choose freely what they will do with their lives, and they have a fundamental moral right to have these choices respected. People are not objects to be manipulated; it is a violation of human dignity to use people in ways they do not freely choose. Other rights he advocated are:

1. *The right to access the truth:* We have a right to be told the truth and to be informed about matters that significantly affect our choices.
2. *The right of privacy:* We have the right to do, believe, and say whatever we choose in our personal lives so long as we do not violate the rights of others.

3. *The right not to be injured*: We have the right not to be harmed or injured unless we freely and knowingly do something to deserve punishment or we freely and knowingly choose to risk such injuries.
 4. *The right to what is agreed*: We have a right to what has been promised by those with whom we have freely entered into a contract or agreement.
- B. In deciding whether an action is moral or immoral, we must ask, does the action respect the moral rights of everyone? Actions are wrong to the extent that they violate the rights of individuals; the more serious is the violation, the more wrongful is the action. The RIGHTS theory as promoted by **John Locke** states that the actions are right, if they respect human rights of every one affected. He proposed the three basic human rights, namely *life, liberty, and property*. His views were reflected in the modern American society, when Jefferson declared the basic rights as life, liberty, and pursuit of happiness.
- C. As per **A.I. Melden's** theory based on rights, nature mandates that we should not harm others' life, health, liberty or property. Melden allowed welfare rights also for living a decent human life. He highlighted that the rights should be based on the social welfare system.
- D. *Human rights*: Human rights are explained in two forms, namely liberty rights and welfare rights. Liberty rights are rights to exercise one's liberty and stresses duties on other people not to interfere with one's freedom. The four features of liberty rights (also called *moral rights*), which lay the base for Government Administration, are:
1. Rights are natural in so far as they are not invented or created by government.
 2. They are universal, as they do not change from country to country.
 3. They are equal since the rights are the same for all people, irrespective of caste, race, creed or sex.
 4. They are inalienable i.e., one cannot hand over his rights to another person such as selling oneself to slavery.

The Welfare Rights are the rights to benefit the needy for a decent human life, when one can not earn those benefits and when those benefits are available in the society.

- E. *Economic rights*: In the free-market economy, the very purpose of the existence of the manufacturer, the sellers and the service providers is to serve the consumer. The consumer is eligible to exercise some rights⁹. The consumers' six basic rights are: Right to Information, Right to Safety, Right to Choice, Right to be Heard, Right to Redressal, and Right to Consumer Education.

A few rights are absolute, i.e., unlimited and have no justifiable exceptions. For example, rights ethicists view that the rights have not been violated if the people purchase a (technological product) hang glider and they get injured by flying them carelessly or under bad weather conditions. But human rights imply that one not to be poisoned or killed by technological products, whose dangers are not obvious or wantonly hidden. They imply a right to be informed, when the purchase was made, of the possible dangers during use or service (obtaining informed consent).

Rights ethics is distinctive in that it makes human rights the ultimate appeal — the moral bottom line. Human rights constitute a moral authority to make legitimate moral demands on others to respect

our choices, recognizing that others can make similar claims on us. Thus, we see that the rights ethics provides a powerful foundation for the special ethical requirements in engineering and other professions.

4. The Virtue Theory

This emphasizes on the character rather than the rights or duties. The character is the pattern of virtues (morally-desirable features). The theory advocated by Aristotle, stressed on the tendency to act at proper balance between extremes of conduct, emotion, desire, attitudes to find the golden mean between the extremes of ‘excess’ or ‘deficiency’. The examples shown below illustrate the theory:

<i>Virtue</i>	<i>Excess</i>	<i>Golden mean</i>	<i>Deficient</i>
Truthfulness (governs communication)	Revealing all in violation of tact and confidentiality	Necessary and sufficient, to proper person	Secretive
Courage (face danger, risk)	Roguishness, bold	Firm and humble	Cowardice
Generosity (giving)	Wasting resources	Give, in appropriate measure	Miserly
Friendliness (governs relationship)	Without anger, effusive	Within decent limits	Bad-tempered
Green environment	Exploitation	Protection	Neglect
Work and earn	Tiresome work (strained)	Balance of work and leisure	Lazy (no work) and more pay

On the other hand, the Virtue Theory proposed by **Mac Intyre**, highlighted on the actions aimed at achieving common good and social (internal) good such as social justice, promotion of health, creation of useful and safe technological products and services. Five types of virtues that constitute responsible professionalism, namely public-spirited virtues, proficiency virtues, team-work virtues, self-governance virtues, and cardinal virtues are discussed in # 2.10.3.

5. Self-realisation Ethics

Right action consists in seeking self-fulfillment. In one version of this theory, the self to be realized is defined by caring relationships with other individuals and society. In another version called *ethical egoism*, the right action consists in always promoting what is good for oneself. No caring and society relationships are assumed.

6. Justice (Fairness) Theory

The justice or fairness approach to ethics has its roots in the teachings of the ancient Greek philosopher Aristotle, who said that “equals should be treated equally and unequals unequally.” The basic moral question in this approach is: How fair is an action? Does it treat everyone in the same way, or does it show favoritism and discrimination?

Issues create controversies simply because we do not bother to check the fairness or justice. Favoritism gives benefits to some people without a justifiable reason for singling them out; discrimination imposes burdens on people who are no different from those on whom burdens are not imposed. Both favoritism and discrimination are unjust and wrong.

2.12 SELF-CONTROL

It is a virtue of maintaining personal discipline. It means a strong will and motivation and avoidance of fear, hatred, lack of efforts, temptation, self-deception, and emotional response. It encompasses courage and good judgment also. Self-respect promotes self-control.

2.13 SELF-INTEREST

Self-interest is being good and acceptable to oneself. It is pursuing what is good for oneself. It is very ethical to possess self-interest. As per utilitarian theory, this interest should provide for the respect of others also. Duty ethics recognizes this aspect as duties to ourselves. Then only one can help others. Right ethicist stresses our rights to pursue our own good. Virtue ethics also accepts the importance of self-respect as link to social practices.

In Ethical Egoism, the self is conceived in a highly individualistic manner. It says that every one of us should always and only promote one's own interest. The ethical egoists do not accept the well being of the community or caring for others. However this self interest should not degenerate into egoism or selfishness, i.e., maximizing only own good in the pursuit of self-interest. The ethical egoists hold that the society benefits to maximum when (a) the individuals pursue their personal good and (b) the individual organizations pursue maximum profit in a competitive enterprise. This is claimed to improve the economy of the country as a whole, besides the individuals. In such pursuits, both individuals and organizations should realize that independence is not the only important value. We are also interdependent, as much as independent. Each of us is vulnerable in the society. Self-respect includes recognition of our vulnerabilities and interdependencies. Hence, it is compatible with caring for ourselves as well as others. Self-interest is necessary initially to begin with. But it should be one of the prime motives for action; the other motive is to show concern for others, in the family as well as society. One's self-interest should not harm others. The principles of 'Live and let (others) live', and 'reasonably fair competition' are recommended to professionals by the ethicists.

2.14 CUSTOMS

Ethical Pluralism: Various cultures in our pluralistic society lead to tolerance for various customs, beliefs, and outlooks. Accordingly ethical pluralism also exists. Although many moral attitudes appear to be reasonable, the rational and morally concerned people can not fully accept any one of the moral perspectives. There are many varied moral values, which allow variation in the understanding and application of values by the individuals or groups in their everyday transactions. It means that even reasonable people will not agree on all moral issues and professional ethics.

Ethical Relativism: According to this principle, actions are considered morally right when approved by law or custom, and wrong when they violate the laws or customs. The deciding factor is the law or the customs of the society. Should we accept the principle of relativism or not? A few reasons to accept this are explained in the following paragraphs:

1. Laws appear to be objective ways for judging values. The laws and customs tend to be definite, clear and real, but not always. Further moral reasons allow objective criticism of laws, as being morally lacking. For example, the Apartheid laws of South Africa violated the human rights of the native Africans. No legal protection was available for native citizens for a long time. Now, of course, these laws have been repealed.
2. Ethical relativism assumes that the values are subjective at the cultural level. Moral standards also vary from culture to culture. The objectivity is supported by the existing laws of that society. The relative morality accepted, supports the virtue of tolerance of differences among societies. This argument is also not fully acceptable. As per ethical relativism, the actions and laws of the Nazis and Hitler who vowed on Anti-Semitism and killed several million Jews would be accepted as right.
3. Moral relationalism or moral contextualism: According to this, the moral judgments must be made in relation to certain factors, which may vary from case to case. The morally important factors for making judgments include the customs and laws. The virtue ethicists hold that the practical wisdom should prevail upon assessing the facts and in the judgment.

This principle was accepted by the early anthropologists because they had a specific tendency to over-stress the scope of moral difference between cultures. The human sacrifices and cannibalism were accepted. But the modern anthropologists insist that all cultures shall exhibit the virtue of social welfare and safety against needless death or physical or mental harm. Moral differences were based on the circumstances and facts and not on the difference in moral attitudes. For example, the pharaohs buried the live attendants along with their dead king with the belief that they would continue to serve the king in his after life.

2.15. RELIGION

Religions have played major roles in shaping moral views and moral values, over geographical regions. Christianity has influenced the Western countries, Islam in the Middle-East countries, Buddhism and Hinduism in Asia, and Confucianism in China. Further, there is a strong psychological link between the moral and religious beliefs of people following various religions and faiths. Religions support moral responsibility. They have set high moral standards. Faith in the religions provides trust and this trust inspires people to be moral. The religions insist on tolerance and moral concern for others. Many professionals who possess religious beliefs are motivated to be morally responsible.

Each religion lays stress on certain high moral standards. For example, Hinduism holds polytheistic (many gods) view, and virtues of devotion and surrender to high order. Christianity believes in one deity and emphasizes on virtues of Love, Faith, and Hope. Buddhism is non-theistic and focuses on compassion and Islam on one deity and adherence of *ishan* (piety or pursuit of excellence) and prayer. Judaism stresses the virtue of 'tsedakah' (righteousness). But many religious sects have adopted poor moral standards, e.g., many religious sects do not recognize equal rights for women. The right to worship is denied for some people. People are killed in the name of or to promote religion. Thus, conflicts exist between the 'secular' and religious people and between one religion and another. Hence, religious views have to be morally scrutinized.

2.15.1 Divine Command Ethics

As per this principle, the right action is defined by the commands by God. It implies that to be moral, a person should believe in God and an action is right only if it is commanded by God. There are some difficulties in this approach, namely, (a) whether God exists or not is not clear. (b) How to know what are the God's commands? and (c) How to verify the genuineness of the commands? Further, religions such as Hinduism, Islam, and Christianity accept the existence of God. But Buddhism, Taoism, and Confucianism adopt only faith in a right path and do not believe in God.

Socrates was said to have argued that God, an entity which is responsible, morally good, and beyond fear or favor, would not command murder, rape, torture, immoral activities, and even mass suicide. Many such crimes were committed in the name of God then and continue even now in different parts of the world. Some Western leaders had claimed that God had commanded them to invade against the Middle-East countries. If anyone claims to have obtained commands from God to kill people merciless, then we have to conclude that the person is not religious but insane.

2.16 SELF-RESPECT

It is defined as valuing oneself in morally suitable ways. Self-respect includes (a) recognition, which means respect to others, their ideas, decisions, ability, and rights and (b) appraisal, which means properly valuing ourselves as to how well we face moral standards and our personal commitments (aims). An intensive but balanced feeling of self-respect is sense of honor. This includes intense agony and guilt for wrong doings. Self-control is a virtue of maintaining personal discipline (self-regulation). Courage is a by-product of self-respect, which makes a person face the hardship in rational way

Self-respect is different from self-esteem in the following manner:

<i>Self-respect</i>	<i>Self-esteem</i>
1. A moral concept	1. A psychological concept
2. Valuing oneself in morally-suitable ways	2. Having a positive attitude towards oneself. It may be excessive or un-warranted or normal
3. It includes virtues of recognition and appraisal. It promotes virtues of sense of honor, self-control and courage	

2.17 CASE STUDY: CHOICE OF THE THEORY

The choice of the ethical theory to study a problem is illustrated herein with an example. In tackling ethical problems, we can apply all the theories and analyze the actions and results from different angles and see what result each theory gives rise to. This enables us to examine the problem in different perspectives. Many a time, the result will be the same though we have applied various theories.