GOVERNMENT POLYTECHNIC KOLHAPUR
ELECTRONICS ENGINEERING DEPARTMENT
E-NEWS LETTER

VOLUME : 1 **DATE: 07/01/2022**

VISION OF INSTITUTE

Institute of high recognition to develop competent technicians for quality professional services and entrepreneurship to cater the needs of industry and society.

MISSION OF INSTITUTE

M1: To educate and train in multi-disciplinary multi-level programmes to develop competent technicians and skilled manpower for industrial needs.

M2: To ensure employability, encourage entrepreneurship, promote lifelong learning.

M3: To inculcate in students the qualities of a good citizen at individual, social and professional level.

M4: To provide quality management system with focus on effective student-centric education and high recognition

VISION OF PROGRAMME

Programme of high recognition and flexibility for the development of competent technical manpower in the profession of Electronics and Telecommunication .

MISSION OF PROGRAMME

M1: To provide technical education of high recognition to the aspiring learners.

M2: To empower student‘s competency to fulfill nation‘s project of Digital India

M3: To adapt student centric approach in teaching-learning process to mould students for skill oriented professional, social and ethical practices

M4: To utilize flexibility in curriculum development to incorporate recent and emerging advancements in the field of Electronics & Telecommunication

PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

PEO1. Apply fundamental knowledge of Basic Sciences, Mathematics and Industrial Electronics engineering in problem solving.

PEO2. Operate, demonstrate and debug the systems in the field of Industrial Electronics engineering and to resolve real life problems.

PEO3. Attain technical knowledge, skills and attitude to acquire further advancement in technology.

PEO 4. Work as a responsible team member of an organization to achieve its goal or can be an individual entrepreneur.

GOVERNMENT POLYTECHNIC KOLHAPUR
ELECTRONICS ENGINEERING DEPARTMENT
E-NEWS LETTER

VOLUME : 1 **DATE: 07/01/2022**

MESSAGE FROM PRINCIPAL Dr.D.M. GARGE

I am very much glad to express my views in the first issue of E-news letter of Electronics & Telecommunication department, Government Polytechnic, Kolhapur, Maharashtra. I congratulate the organizing and editorial team of the news letter for their efforts put in bringing the bulletin in this alluring form.

We conduct several programs and activities in the technical, academic, social, and cultural fields, but many times; do not present them on right platform. I believe this E-news letter will fulfil our need of appropriate "Dias" where students, faculties, and even industrialists connected with the department will be expressing themselves in a genuine way.

I hope this E-news letter will grow in all respect and in all dimensions of the literature world and will be considered as a authentic record of the events for the coming years. May it be helpful to the students in achieving their objectives of polytechnic education and in the journey of being a successful citizen of the great nation, India. Thank you…

--- Dr. Dattatray M. Garge, I/C Principal, Government Polytechnic, Kolhapur

"Engineering or technology is the making of things that did not previously exist, whereas science is the discovering of things that have long existed"

GOVERNMENT POLYTECHNIC KOLHAPUR
ELECTRONICS ENGINEERING DEPARTMENT
E-NEWS LETTER

VOLUME : 1 **DATE: 07/01/2022**

MESSAGE FROM Dr. R.K. SAWANT VICE PRINCIPAL

Electronics Engineering is one of the best engineering branch now a day. In India, if we talk about government sector then it has broad scope in highly reputed organization like ISRO, DRDO, DMRC, BARC and many more as well in private industry.

First you need to know what exactly is Electronics Engineering. It comprises of 5-6 major domains:

Embedded Systems
VLSI
Power Electronics
Instrumentation
Hardware Networking
Robotics

You can see a wide people from **Embedded Systems** developing and manufacturing electronics products in India. So, you can join any of these or start your own as well. This is an **evergreen domain** where you can study as well as work.

VLSI is itself a huge domain, so students interested in this domain usually complete masters so that they might get a chance to work directly in **Silicon Valley**.

Power electronics is related to these limited companies in India such as Bharat Electronics, etc. which have very limited job offers and are now on a downscale due to **fossil fuel reduction** every year.

Instrumentation systems are required in almost all heavy electrical companies. So, there are jobs available for these positions too, but limited.

Hardware networking jobs are linked with software companies so they usually offer you jobs in this sector with huge pay as it is in demand. Imagine your router not working while reading this. You need a hardware network engineer to resolve this!

Robotics is a necessity and is involved in all huge manufacturing plants as well as for research along with artificial intelligence. This sector doesn't have jobs as such (except for research ideas and inventions) as robots itself are used as an alternative to manpower!

In total, in the era of 5G, Electronics Engineer has to play very vital role in the growth and development of industry and society.

"The scientist discovers a new type of material or energy and the engineer discovers a new use for it."

GOVERNMENT POLYTECHNIC KOLHAPUR
ELECTRONICS ENGINEERING DEPARTMENT
E-NEWS LETTER

VOLUME : 1 **DATE: 07/01/2022**

MESSAGE FROM SHRI D.K. LAMTURE HOD E&TC

Dear students, it gives me immense pleasure to publish Electronics Engineering Departments E-Newsletter. Our department is engaged in identifying skills & abilities of the students and nurture them so as to have all round development of the students & offer them great opportunities in employment , higher education & entrepreneurship.

We are passing through a very difficult phase of Covid- 19 pandemic since the last two years. During this period our department has explored new teaching methodologies & online platforms such as Zoom, WiseApp, Teachmint, Virtual lab etc. to complete curriculum including theory, practicals, unit tests & exams. Our faculties have left no stone unturned to complete curricular & extra curricular activities which are essential for the development of students in order to achieve Vision & Mission of the Institute and Department.

I congratulate our E-Newsletter team Smt. Manjiri Datar madam & Shri P V Itkalkar Sir and wish them success in this endeavour. I also congratulate other faculties of the department who are part of this newsletter. The team has brought out a very well organized E-Newsletter. I appeal to all the faculties & students to be more active in this activity by offering more contribution to the newsletter.

I hope that you will follow the guidelines of Kolhapur Local Administration in this pandemic , be healthy & be safe.

I thank our Principal Dr. D. M. Garge sir for his motivation to carry out this wonderful activity.

"Strive for perfection in everything you do. Take the best that exists and make it better. When it does not exist, design it."

Orientation Program for First Year Pass out Students and their Parents

The orientation program was conducted on 08/09/2021 in online mode for the first year pass out students who are admitted in second year and their parents.

The purpose of orientation program was to aware the students and parents about programme, different courses and to introduce faculties of the department. In this orientation program students are guided on following topics:

1.Information about programme.

2.Introduction to all Head of the Departments, all teaching and non teaching faculties .
3.Teaching process and departmental procedures

4.Third semester subjects and registration rules.

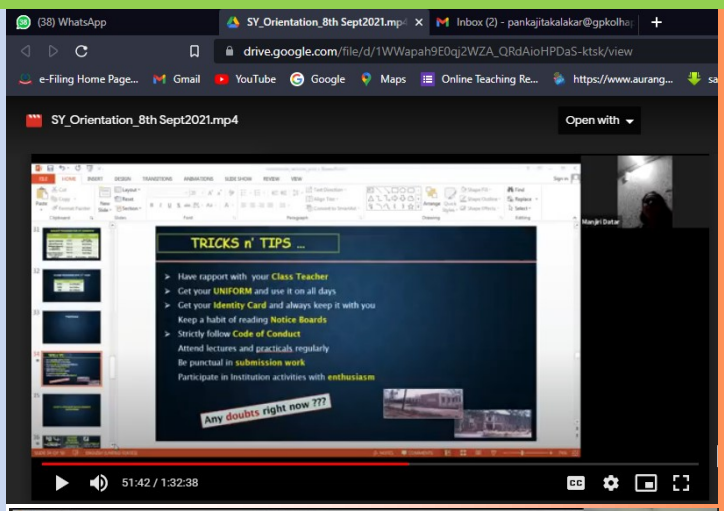
5. Other departmental activities and

6. Guidance from alumni Ms. Aishwarya Kumbhar

Organizing committee:

Shri. D.K. Lamture Smt. C S Prabhu

Smt. M.S.Datar Smt. M.Y.Sonule



Youtube link: https://www.youtube.com/watch?v=IRZdzY4BeLc

Orientation Program for Second Year Pass out Students and their Parents

The orientation program was conducted on 11/09/2021 in online mode for the second year pass out students who are admitted in third year and their parents.

The purpose of orientation program was to aware the students and parents about different courses, selection of major project, project group formation, placement and to introduce faculties of the department. In this orientation program students are guided on following topics:

1.Information about department.

2.Introduction to all Head of the Departments, all teaching and non teaching faculties .
3.Fifth semester subjects and registration rules.

4. Guidance about the placement

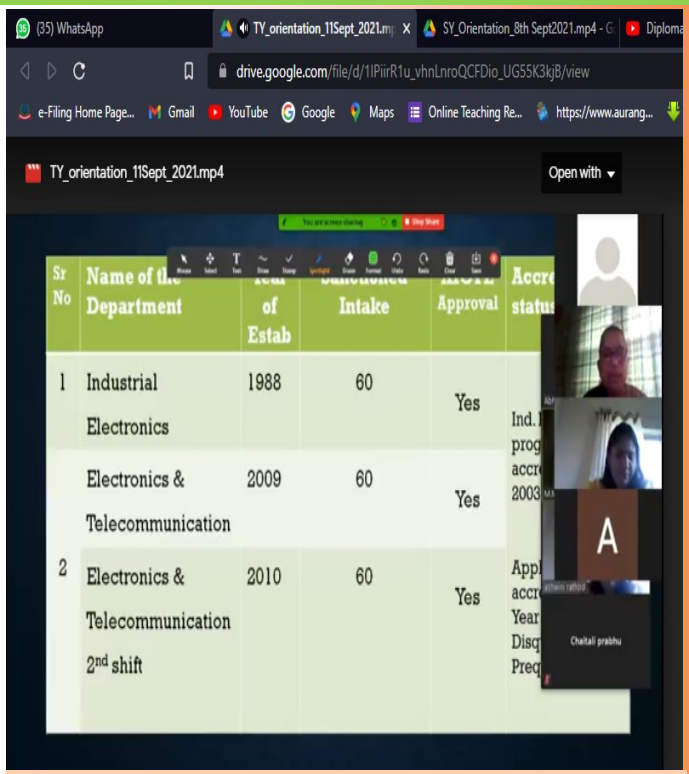
5. Guidance about the project group formation

6. Guidance from alumni Ms. Aishwarya Kumbhar,
Ms. Vaishnavi Chavan

The organizing committee:

Smt. A.P. Rathod Smt. A.S. Shival

Smt. M.M. Sovani



Youtube link: https://drive.google.com/file/d/1lPiirR1u_vhnLnroQCFDio_UG55K3kjB/view

"The expert in anything was once a beginner."

Online Webinar for SSC pass out students

Free webinar in online mode was conducted on 11 September 2021 for the SSC pass students who were interested in admission for diploma first year 2021-22.

The main motive of the webinar was to aware the SSC pass students and parent about benefits of technical education, selection of a programme among many and benefits of Diploma in technical education.

Following points were discussed in the webinar:

1. How to select Diploma programmes.
2. Career and higher education opportunities after diploma.
3. Information about Government Polytechnic Kolhapur and available programmes in the institute.
4. Fee structure.
5. Guest faculty was invited to guide the SSC pass out students The guest faculty Shri Shivanand Mali was invited to guide the SSC pass out students. He is also the alumni of this institute and presently working as R & D architect, 5G in Nokia Banglore He shared his valuable views on career guidance and job opportunities after diploma.

Organizing committee:

Dr. D.M.Garge

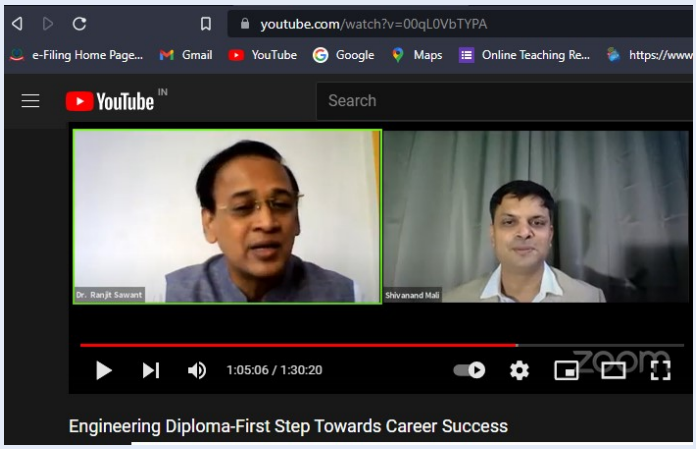
Dr. R. K. Sawant

Shri. K.D. Kamble

Shri. P.H. Tarange

Smt. C. S. Prabhu

Smt. M.Y. Sonule



Youtube link: https://youtu.be/00qL0VbTYPA

"Projects we have completed demonstrate what we know - future projects decide what we will learn."

ENGINEERS DAY CELEBRATION

Engineers day was celebrated in online mode on 16/09/2021. The event was organised by Electronics Engineering department and EESA.

For this event guest speaker Mr.Siddharth Mali, a young entrepreneur and Alumni of Government Polytechnic Kolhapur was invited to give guidance and sparkle the students for bright career in Electronics Engineering field.

He shared his views on following topics:

- Contribution of Engineering in handling covid pandemic
- Emerging trends in Electronics Engineering.

On the occasion of Engineers day, a competition was conducted in the department by EESA on 18/09/2021.

The competition comprised of Quiz, Poster presentation and Speech competition in online mode.

The winner in Poster presentation are:

- Shweta Hitesh Deshmukh
- Sneha Pandurang Sawant
- Asawari Uday Kothavale
- Krantisingh Shivaji Lad
- Siddhi Ravindra Phalke

The winner in Poster presentation are:

- Chaitali Gujar
- Samarth Burkul

The winner in Speech competition are:

- Dheeraj Rane
- Sneha Sawant

The organising committee:

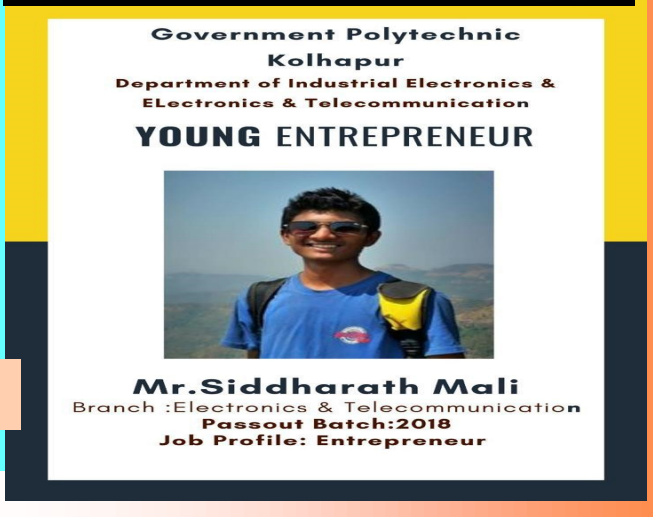
- Dr. R.K.Sawant
- Smt. M.Y.Sonule
- Shri.S.B. Mote

Judge Committee:

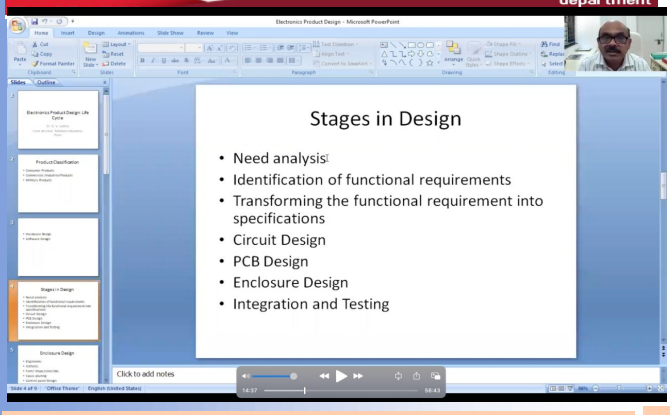
Smt. C.S.Prabhu

Smt. M.M.Sovani

Youtube link: https://youtu.be/XXE6fpRM8FM



Webinar on Selection of Final Year Project for Diploma



An online webinar was conducted on 05th October 2021 in the department on topic **"Selection of Final Year Project for Diploma"** for diploma final year students. The Expert speaker were honourable **Dr. D.V. Jadhav, Joint Director Technical Education, Pune.**

Dr. D V Jadhav put his detailed thought on prerequisite for selection of projects, various stages of project selection and effective implementation. The webinar was organised for the students to select the final year major project.

The organising committee:

Dr. D.M.Garge

Dr. R.K. Sawant

Shri. D. K. Lamture

Smt. C S Prabhu

Send-off of faculty

Smt Benade Ashwini Lecturer in Industrial Electronics was transferred from Government Polytechnic Kolhapur to Government Polytechnic Karad. She was relieved on 11 August 2021. Send off was given by Electronics Engineering Department. Following faculties were present for the send-off. (from left) Smt C.S.Prabhu, Smt A.P. Rathod, Smt. M.Y.Sonule, Smt. A.S. Shival, Smt. Benade Smt. M.M. Sovani, Dr. R.K. Sawant, Shri. K.D.Kamble, Shri. V.S. Waydande, Shri. S.B. Mote and Shri. S.S.Pujari.

Welcome of faculties

Following faculties were transferred to Government Polytechnic Kolhapur.

1. Shri. V.S.Waydande from G.P. Karad
2. Dr. R.A Patil from G.P.Mumbai
3. Shri.P.V.Itkalkar from G.P. Osmanabad
4. Shri.S.B.Mote form G.P.Hingoli
5. Smt.P.R.Doke from G.P. Tasgaon

Welcome ceremony was organised by Electronics Engineering department.

"To the optimist, the glass is half full. To the pessimist, the glass is half empty. To the engineer, the glass is twice as big as it needs to be."

ENTC First shift Toppers

Third Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Gogate Shardul Shailesh	98.66	2021
1	Jamadar Yunus Iqbal	98.66	2021
2	Chavare Ranveer Ramesh	98.13	2021
3	Adat Samarth Vishnu	97.73	2021

Second Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Patil Vaishnavi Prakash	95.73	2021
2	Chougale Nikita Vijay	94.93	2021
3	Salokhe Samruddhi Bharat	94.8	2021

First Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Hemmady Arjun Chaitanya	94.44	2021
2	Sawant Sneha Pandurang	93.46	2021
3	Deshmukh Shweta Hitesh	91.59	2021

"The beautiful thing about learning is that no one can take it away from you."

ENTC Second shift Toppers

Third Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Adure Amisha Amit	98.53	2021
2	Sarnaik Apoorva Prashant	98.4	2021
3	Yadav Megharaj Sanjay	97.46	2021

Second Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Waychal Prasad Mahesh	97.73	2021
2	Otari Sakshi Sandip	95.06	2021
3	Khot Prem Sachin	94.8	2021

First Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Sarnaik Siddhesh Baban	91.42	2021
2	Mane Pratikraj Prakash	90.85	2021
3	Deshpande Sanika Rahul	89.14	2021

“Education is the most powerful weapon you can use to change the world.”

Industrial Electronics Toppers

Third Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Uttekar Harshal Vinod	94.96	2021
2	Chougale Ganesh Elias Ruturaj	93.16	2021
3	Nandaniwala Zaid Kausar	91.09	2021

Second Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Soham Girish Kulkarni	92	2021
2	Neel Madhav Joshi	91.86	2021
3	Shinde Heramb Dilip	91.6	2021

First Year			
Rank	**Name of the Student**	**Percentage %**	**Year**
1	Vaishnavi Kishor Suryawanshi Patil	92.32	2021
2	Nalawade Prathamesh Santosh	82.36	2021
3	Varute Somesh Ganesh	78.93	2021

“A person who never made a mistake never tried anything new.”

Recent Trends in Chip Design Technology

Shri S. S. Pujari
Dept. Of E&TC,Government polytechnic kolhapur,india.
pujari.jay@gmail.com

Modern VLSI trends are gradually moving from large to smaller devices. In the past three years, we have seen an exponential increase in the productivity and performance of mobile processors. The IC industry has constantly continued to make devices geometry smaller.

According to Moore's law, the number of transistors in a chip doubles every 16-20 months. This has continued to drive the scaling down of CMOS technology into Nano sizes. As the level of integration increases and also the features and performance.

Over the period of 30 years, the semiconductor VLSI industry the industry has continued to evolve. There is a clear distinction between the companies of years and now. We have seen a lot of changes in the form of performance improvement and size.

The integration density of ICs and the speed have greatly upgraded. The use of one billion transistors ability of a single IC is now possible. However, this also requires a new system configuration and a substantial upgrade of design productivity. There are also major improvements in the area of structural complexities. This is achieved through inventing different design methods and investing more in design works.

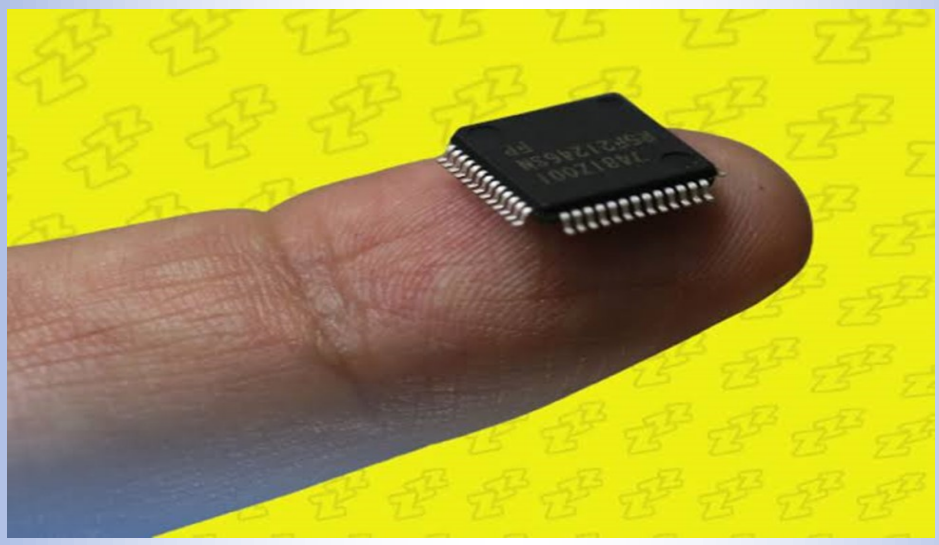
According to International Technology Roadmap for Semiconductors (IRTS), the number of transistors in a chip will continue to rise exponentially. The case is the same for the number of local clock frequencies required for high-performance. This rise is expected to take place over a period of 10 years.

According to IRTS, we should be expecting the following changes in general trends:

- Greater increase in the number of transistors for processors and DRAM memory features.
- The lime widths of IC's will relatively be shrunk to smaller sizes.
- There is some growth in the chip die sizes.

Semiconductor fabrication practice will also be met with increased complexity.

There are a lot of new opportunities in VLSI IC's design today. As technology continues to scale the more the opportunities continue to grow for designers. A clear understanding of the trends gives a clearer roadmap for more efficient and effective chip designing. There are also quite a number of challenges facing the design of complex ICs as well.



"You don't have to be great to start, but you have to start to be great."

Detection of Diabetic Retinopathy Using Image Processing and Artificial Intelligence

Mrs. Madhuri Yogesh Sonule
Dept. Of E&TC,Government polytechnic kolhapur,india.
madhusonule@rediffmail.com

Diabetic correlated eye diseases are the mainly frequent cause of loss of sight in the world. World Health Organization (WHO) has expected that in 2000 there were 171 million public global with diabetes and this number will increase to 366 million by 2030 This makes diabetes among the leading causes of disabilities, death and economic hardship in the world. A side effect of diabetes is diabetic retinopathy in which different parts of the retina gets affected. Diabetic retinopathy is a health situation where the retina is injured because liquid leaks from blood vessels into the retina. Doctors recognize diabetic retinopathy by investigating the features, such as blood vessel region, exudates, hemorrhages, microaneurysm and texture. Diabetic retinopathy can be divided into three stages of non-proliferative retinopathy(NPDR): mild, moderate, and severe and one stage of proliferative retinopathy (PDR). Because of diabetic retinopathy different parts of the retina get injured and it leads to vision failure .Diabetic retinopathy (DR) is a problem of diabetes and may cause blindness. Visual failure can be prevented by timely recognition and treatment of DR. One of the main essential steps in the automated detection of DR is the finding of microaneurysms However, it is difficult for patients to note DR, since it progresses without any subjective symptoms. Ophthalmologists can identify DR by finding microaneurysm (MA), hemorrhage, exudate, or neovascularization in the retinal fundus image. Microaneurysms (MAs) are a common and often early manifestation of DR. They are dilated, and appear as small red dots in colour retina fundus images. These lesions can leak liquid and blood into the retina, leading to vision threatening exudates, macular edema and hemorrhages. These MAs are the most important object for laser treatment of macular edema. As such, the MA detector is an attractive candidate for an automatic screening system able to detect early findings of DR. Main essential steps in the automatic screening of DR is the detection of microaneurysms. Microaneurysms are small outpunching in capillary vessels. The capillary vessels are normally not visible in color fundus photograph but because of the raise in size, microaneurysms appear as small red dots between the visible retinal vasculature Microaneurysms are amongst the first clinical signs of the presence of diabetic retinopathy. An increase in the number of MA over time is strongly correlated with the early development of retinopathy. Detecting microaneurysms as the primary scientific indication of diabetic retinopathy will give a contribution in helping ophthalmologists to identify patients that require to be treat. Therefore, automated early detection of microaneurysms can reduce the burden of ophthalmologists. Automatic microaneurysms finding can also help the ophthalmologists in investigate and treat the infection more efficiently.

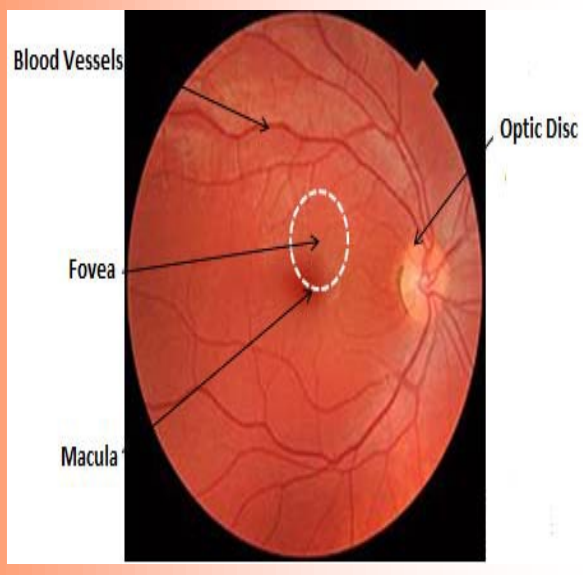


Fig. 1.Normal Retinal Fundus Image

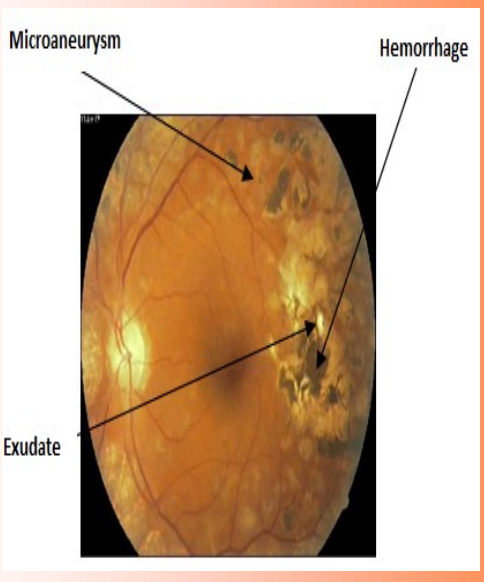


Fig. 2.Retinal Fundus Image Containing DR

"You don't have to be great to start, but you have to start to be great."

Surya Namaskar and its benefits

A healthy and strong body is like an ornament. If you are healthy, you will be able to study properly, go on excursions or participate in competitions. Due to the gift of Yoagasan given by ancient Sages, you can remain healthy and lead a long life. This article gives the importance and benefits of Surya Namaskar, mantras to be done during Surya Namaskar and Surya Namaskar steps with pictures.

Doing Surya Namaskar

Surya Namaskar should be done facing the early morning mild sunlight from the east.

Benefits of Surya Namaskar

A. It improves the blood circulation of all the important organs of the body.
B. Improves the functioning of the heart and lungs.
C. Strengthens the muscles of the arms and waist.
D. Makes the spine and waist more flexible.
E. Helps in reducing the fat around the abdomen and thus reduces weight.
F. Improves digestion.
G. Improves concentration power.

Importance of Surya Namaskar

Ways in which respiration (breathing) should be done during a Surya Namaskar

1. Purak – Taking in a long breath .
2. Rechak – Leaving out a long breath.
3. Kumbhak –Holding the breath.
4. Aantar Kumbhak – Holding the breath after breathing in.
5. Bahir Kumbhak – Holding the breath after breathing out.

Various chants (mantras) to be done during Surya Namaskar

1. Om Mitraaya namahaa
2. Om Ravaye namahaa
3. Om Suryaaya namaha
4. Om Bhaanave namahaa
5. Om Khagaaya namahaa
6. Om Pushane namahaa
7. Om Hiranyagarbhaaya namahaa
8. Om Marichye namahaa
9. Om Aadityaaya namahaa
10. Om Savitre namahaa
11. Om Akaarye namahaa
12. Om Bhaaskaraaya namahaa
13. Om Sri Savitru Surya Naaraayanaaya namahaa

Surya Namaskar steps with pictures

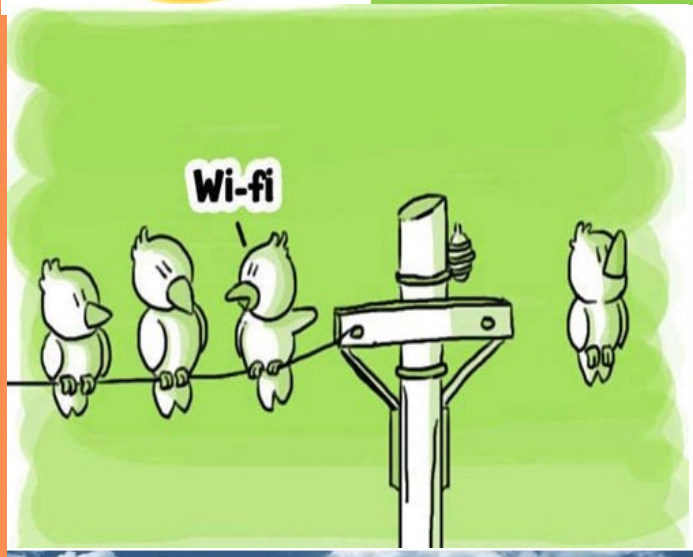
There are ten different steps / positions that make a Surya Namaskar. Before doing a Surya Namaskar we should chant all the thirteen chants in the given order starting from “Om Mitraaya namahaa : Every step in Surya Namaskar is a different yoga position. During every step we have to do the ‘purak’ and rechak breathing steps alternately. Eg. Step 2- purak, Step 3- rechak- Step 4 – purak and so on To get the maximum benefit of Surya Namaskar hold yourself stable in every position for at least 10 to 15 seconds.

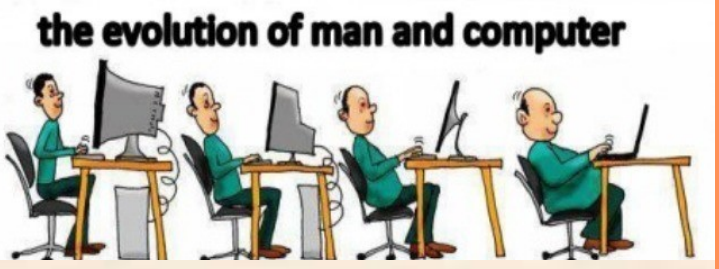
Achievement

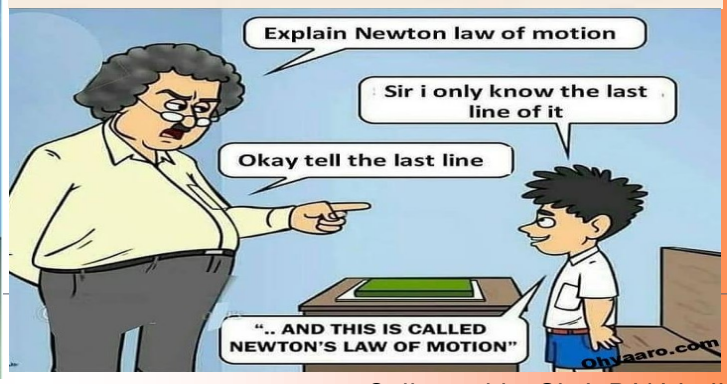
Our Electronics and Telecommunication Engineering student **Prachi Uplane** has achieved **First prize** in speech competition organized by D R Mane College, Kagal. All the HODs and faculties from department congratulates her for her success.

Editorial Board

"Just for Laugh"







Collected by Shri. P.V.Itkalkar