| Professional<br>Practices   | Biomedical<br>Instrumentation &<br>Imaging Techniques                                    | Hydraulics &<br>Pneumatics   | Measurement & Display Devices   | Fundamentals<br>of Electronics                                    | Elements of<br>Electrical<br>Technology                                    |
|---|--|--|---|---|--|
| Writing Skills:<br>Official Letters,<br>Curriculum Vitae,<br>MS Office    | Bioelectric Signals<br>and Electrodes  | Hydraulic pumps, Pressure control and flow control valves              | Transducers-<br>Types, working<br>and characteristics                                 | Diode as a<br>Rectifier   | Overview on<br>Electricity, Circuit<br>Fundamentals<br>Different types and |
| Communication,<br>Leadership and<br>Team work                             | Electrocardiograph and Electroencephalograp h: Working and computerized Analysis         | Direction Control<br>valve, Hydraulic<br>actuators and<br>Accumulators | Display Devices:<br>LCD, LED,<br>Electroluminescen<br>t display and<br>plasma display | Transistors-<br>Classification,<br>working and<br>characteristics | Types of Capacitors  |
| Problem solving,<br>working under<br>pressure and time<br>management      | Blood Flow Meters,<br>Cardiac Pacemakers,<br>Defibrillators and<br>Ventilators           | Pneumatic<br>Control Valves&<br>Actuators                              | Cathode Ray<br>Oscilloscope and<br>Measurement<br>meters                              | Amplifier<br>circuits and<br>applications                         | Concept of coupling,<br>Inductors and types<br>of cores                    |
| Equipment<br>maintenance<br>overview                                      | Clinical Laboratory<br>Instruments, Blood<br>gas Analyzers and<br>Blood cell counters    | Design and Analysis of Hydraulic & Pneumatic Circuits                  | Function<br>Generator,<br>Impedance<br>Bridges, Q Meter<br>and Recorders              | Filter circuits, wave shaping circuits and voltage multipliers    | Connectors, switches<br>and Relays   |
| Human Machine Systems. Contribution of ergonomics to work station design. | X-ray radiography, Mammography, Digital subtraction angiography, CT scanners, Ultrasound | Troubleshooting of Hydraulic & Pneumatic Circuits                      | Patient Monitoring System: Measurement of various parameters                          | Digital Electronics and linear ICs                                | Transformers, Motors and Power Supplies                                    |



### Rashtreeya Sikshana Samiti Trust RV College of Engineering®



(Autonomous Institution
Affiliated to Visvesvaraya Technological University, Belagavi)
Mysuru Road, Bengaluru-560059

In collaboration with

#### **Association of Health Care Providers India (AHPI)**

# CERTIFICATION PROGRAM IN "BIOMEDICAL EQUIPMENT MAINTENANCE AND SERVICING (BEMS)"

#### **About RVCE:**

Rashtreeya Vidyalaya College of Engineering (RVCE) established in 1963 is the flagship institution of Rashtreeya Sikshana Samithi Trust (RSST) and one of the earliest self-financing engineering colleges in the country. RVCE today is recognized as one of India's leading technical institutions. It is rated amongst the top five self-financing engineering colleges in the country. Several leading National English magazines have rated the institution as the best institute in the nation amongst self-financing institutions based on Return on Investment by a student. RVCE ranked 63<sup>rd</sup> by NIRF-MHRD ranking for 2018-19.. The Institution is the preferred destination for top ranking aspirants, both for UG and PG programs.

RVCE is an autonomous institution affiliated to Visvesvaraya Technological University (VTU) Belagavi. The curriculum for UG & PG programs are designed by Board of Studies and approved by the Academic Council. The institution offers 12 UG and 17 PG programs. Fifteen departments are VTU recognized research centers for M.Sc (Engg.) and Ph.D. studies. Eleven UG programs and Ten PG programs are accredited by National Board of Accreditation (NBA). Institution is accreditated by NAAC. The institution has students' strength of about 5500 and 200 research scholars. The institution has more than 375 qualified faculty members. The placement in most of the departments is over 95%.

The institution has to its credit over 1200 National and International Journal publications, 41 patents filed, 27 patents published, completed sponsored research and consultancy projects worth 30 crores for last three years. The institution has established Incubation Centre, Centre of Excellence in Macro-electronics, Cisco sponsored Centre of Excellence in Internet of Things, RVCE-Mercedes Benz Centre for Automotive Mechatronics, Center for Computational Genomics, Center for Smart Antenna systems. Toyota Kirloskar Motors sponsored automotive workshop and RV-Bosch Rexroth Centre for Automation. The students have won awards and accolades in national and international competitions.

#### **About the Course**

Medical devices in particular are crucial in the prevention, diagnosis, and treatment of illness and disease, as well as patient rehabilitation. The World Health Assembly adopted resolution, which covers issues arising from the in-appropriate deployment and use of health technologies, and the need to establish priorities in the selection and management of health technologies, specifically medical devices. The challenges faced by hospitals and technicians are imposed by the proliferation of medical equipment technology, their growing cost and complexity, device related patient harm and a profusion of conflicting information about medical equipment.

These challenges are faced by health professionals as well, but it is the service engineer or technician who is usually called upon to sort out these issues and make sense of them. To do so requires skill upgrading, access to reliable, up-to date technical information and the ability to consult with competent peers with specialized experience and judgment. With these in mind, RV College of Engineering has a total focused approach with the specific objectives to rapidly up-skill participants in the advanced technology management, operation, maintenance and repair techniques of medical equipment through interactive learning and hands on practice.



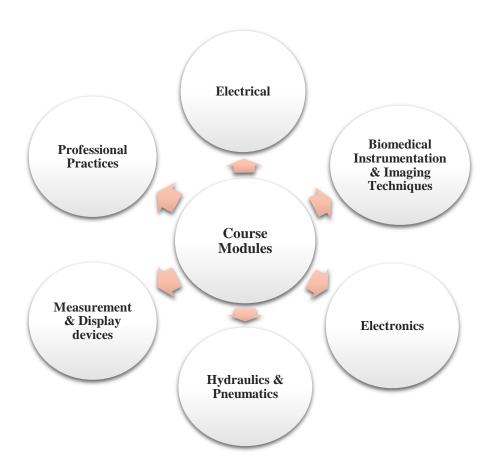


#### **Course Structure:**

The training modules are on various topics related to basics of biomedical engineering. The curriculum is designed in such a way to impart the following concepts to the participants:

- **4** Assembling and Testing of components
- **♣** Trouble shooting
- **4** Preventive maintenance
- **4** Servicing
- Calibration

Eligibility: B.E. in Electrical and allied branches of Engineering Duration: 6 months (3 months Coursework +3 months Internship)





#### Rashtreeya Sikshana Samithi Trust (RSST)

## **RV** College of Engineering®



(Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi)

Mysuru Road, Bengaluru-560 059

#### In collaboration with

## **Association of Health Care Providers India (AHPI)**

## CERTIFICATION PROGRAM IN "BIOMEDICAL EQUIPMENT MAINTANANCE AND SERVICING (BEMS)"

#### Registration Form (2019 - 20)

| Personal Details          |  |
|---------------------------|--|
| Student's Name            |  |
| Father's Name             |  |
| Student's Mobile No       |  |
| Date of Birth             |  |
| Gender: Male / Female     |  |
| Address for Communication |  |
|                           |  |
|                           |  |
| Alternate Phone           |  |
| e-mail                    |  |

| Education Profile   |                               |  |
|---|-------------------------------|--|
| Diploma Branch  |                               |  |
| Year of Passing & Percentage of marks   |                               |  |
| Engineering Branch  |                               |  |
| Year of Passing & Percentage of marks / CGPA  |                               |  |
| Registration Fee Paid Details   |                               |  |
| DD No., Bank and Date   |                               |  |
|   |                               |  |
| Amount (Rs 500 + GST Rs 90) = Rs 590, to be drawn in favour of 'Principal, RV College of Engineering, Bangalore'. |                               |  |
| builgulore .  |                               |  |
| Signature of the Candidate  |                               |  |
| Dates   |                               |  |
| Last date for submission of forms   | 15 <sup>th</sup> October 2019 |  |
| Entrance test   | 22 <sup>nd</sup> October2019  |  |
| Merit list declaration  | 24 <sup>th</sup> October2019  |  |
| Last date for payment of fee  | 4 <sup>th</sup> November2019  |  |
| Commencement of course  | 4 <sup>th</sup> November2019  |  |
| For Further Information Contact: Dr Deepashree Devaraj, 9845903721 ,deepashree@rvce.edu.in                        |                               |  |
| Dr. CH.Renu Madhavi, 9449869509, renumadhavi@rvce.edu.in  |                               |  |