



Shri Aillak Pannalal Digamber Jain Pathashala's

## **WALCHAND INSTITUTE OF TECHNOLOGY**

**(An Autonomous Institute)**

- Accredited by **NAAC A+ Grade** and **NBA, New Delhi** for Civil Engg., Mechanical Engg., Electronics Engg., Electronics & Telecommunication Engg.
- Winner of AICTE-CII Survey 2013, 2014 & 2018 Award for Best Industry-Linked Institute.
- Recognized by **AICTE, New Delhi**
- Permanently affiliated to **Punyashlok Ahilyadevi Holkar Solapur University, Solapur**
- Solapur Jurisdiction only.

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### **1. Title of the Practice:**

**“Rendering consultancy services to the Society: A Best Practice to foster innovations and enhancing Technological Advancements”.**

### **2. Objective of the Practice:**

The primary goals of consultancy services in engineering colleges include:

- Bridging the gap between academic research and industrial applications.
- Enhancing the professional skills of faculty and students through hands-on experience.
- Strengthening industry-academia partnerships for mutual benefit.
- Contributing to local, regional, and national development through innovative solutions.

### **3. Context:**

In an evolving global environment, higher education institutions play a pivotal role in bridging the gap between academia and societal needs. The institute’s faculty members possess deep domain knowledge, and innovative ideas to solve real-world problems. Providing consultancy services allows the institution to actively engage with society and industries while fostering an environment for knowledge transfer and skill enhancement. However, delivering effective consultancy requires robust frameworks to address diverse challenges, from technical complexities to resource constraints.

### **Scope of Consultancy Services**

The consultancy services offered by engineering colleges typically include:

- 1. Civil Engineering**
  - Structural design and analysis
  - Soil testing and geotechnical investigations
  - Construction material testing
  - Environmental impact assessments
  - Bituminous
  - Urban planning and GIS mapping
- 2. Mechanical Engineering**

- Machine design and prototyping
- Thermal system analysis
- Material testing and failure analysis
- Energy audits
- 3. **Electrical and Electronics Engineering**
  - Power system analysis and audits
  - Renewable energy systems design
  - Automation and robotics solutions
  - Electronic circuit design
- 4. **Computer Science and Information Technology**
  - Software development and IT solutions
  - Data analysis and machine learning applications
  - Cybersecurity and network assessments
  - Web and mobile app development
- 5. **Other Domains**
  - Chemical process design and environmental audits
  - Business and management consultancy for process optimization

### 3.1 Potential benefits of Consultancy Services for engineering colleges:

- **For the College**
  - a) Enhances reputation and credibility.
  - b) Provides practical exposure to students and faculty.
  - c) Generates additional revenue for infrastructure development.
  - d) Strengthened reputation and industry linkages.
  - e) Enhanced research funding and financial sustainability.
  - f) Development of a knowledge-sharing ecosystem and innovation culture.
- **For Industry and Clients**
  - a) Access to affordable and high-quality technical solutions.
  - b) Opportunity to collaborate with academic experts.
- **For Students**
  - a) Real-world learning experience.
  - b) Exposure to the latest tools and technologies.
  - c) Experiential learning through involvement in live projects.
  - d) Exposure to industry practices and real-world problem-solving.
  - e) Skill development for enhanced employability and innovation.
- **To Society:**
  - a) Access to expert advice for solving pressing challenges.
  - b) Development of innovative, sustainable, and cost-effective solutions.
  - c) Strengthened collaboration between academia and society.
- **To Faculty:**
  - a) Opportunities to apply theoretical knowledge in practical scenarios.
  - b) Professional growth through exposure to industry challenges.
  - c) Enhanced research capabilities and access to real-world data.

#### 4. The Practice:

##### Process of Consultancy Engagement

###### 1. Proposal Stage

The client approaches the Institute with specific requirements. Based on the scope of the work, a detailed proposal, including the scope, timeline, and cost estimate (Quotation), is prepared and sent to client for approval.

###### 2. Agreement and Approval

The quotation is approved by the client outlining deliverables, confidentiality clauses, and other terms and work order is issued to the Institute.

###### 3. Execution

Domain specific faculty member/s, often supported by technical staff, execute the project using Institute laboratories and resources.

###### 4. Reporting and Deliverables

Final reports, designs, or solutions are delivered to the client, accompanied by detailed presentations or demonstrations if any.

#### 5. Evidence of Success:

As part of the institution's commitment to fostering innovation and enhancing technological advancements, the consultancy services rendered by various departments have emerged as a best practice for serving to the society. These services exemplify the institution's engagement with society, promoting knowledge application for societal betterment. The major contributions of various departments in providing consultancy services to the society are given below:

- 1. Department of Civil Engineering:** The major consultancy services provided are Evaluation of the Safe Bearing Capacity for the Proposed Construction of Court Building, Bituminous Mix Design for Construction of PMGSY roads, Structural audit and Non-Destructive Testing of Main Court Building, Concrete Mix Design of various grades, and proof checking of various R.C.C. structures etc. The total revenue generated is **Rs. 23,41,498/-**.
- 2. Information Technology:** The major consultancy services provided are Verification of Specifications of Computer and Printer, Design and Development of Educational Portal, Design and Development of a Web based EduTech Content Management Portal for Students Skill Development. The total revenue generated is **Rs.56,168/-**
- 3. Electronics & Computer Engineering:** The major consultancy services provided are Design automatic watering system for home plants, Installation charges of 40KVA

APFC Panel, Modification in existing load sensing mechanism of power loom, and Static website design and content management, domain name registration and website hosting, etc. The total revenue generated is **Rs. 1,039,00/-**.

4. **Electronics & Telecommunication Engineering:** The major consultancy services provided are Design and development of system for multiple street light on off control, Consultancy work for PLC Automation System, Development of Realtime Attendance Monitoring System, Design of smart Switches and Fully AutomateLx Solar Grass Cutter, etc. The total revenue generated is **Rs.1,87000/-**.
5. **Mechanical and Automation Engineering:** The major consultancy services provided are Design of compact and comfortable Cervical Collar, Optimization of Receiver tank, thickness used in reciprocating air compressor, Design of Powder mixing machine used in food industry, CNC programming of AVL-3 camshaft, Design & analysis of Sheet Metal parts, and 3D Printing and Design, etc. The total revenue generated is **Rs.1,41272/-**
6. **Computer Science & Engineering:** The major consultancy services provided are Sponsored Project on Smart Voting System, E Commerce website for fertilizer shop, School Automation System for V M Mehta High School, Website Development for Sanjeevani Clinic, Development- Website Design, Distributor- Retailer System for E-commerce and Design of Uniform Inventory Management System, etc. The total revenue generated is **Rs.2,05300/-**

The detailed summary of the consultancy amount generated by each department is shown in **Table-1** below:

**Table 1: Summary of Consultancy works**

Description	Civil	IT	ECE	ETC	Mech	CSE	Total amount, Rs.
Total Projects	39	6	8	15	13	7	
Total Clients	32	6	8	15	12	7	
<b>Amount in Rs.</b>	2341498	56168	103900	187000	141272	205300	30,35138

The consultancy services offered by engineering colleges typically include:

1. **Civil Engineering**
  - Structural design and analysis
  - Soil testing and geotechnical investigations
  - Construction material testing
  - Environmental impact assessments
  - Urban planning and GIS mapping
2. **Mechanical Engineering**
  - Machine design and prototyping
  - Thermal system analysis
  - Material testing and failure analysis
  - Energy audits
3. **Electrical and Electronics Engineering**

- Power system analysis and audits
  - Renewable energy systems design
  - Automation and robotics solutions
  - Electronic circuit design
4. **Computer Science and Information Technology**
- Software development and IT solutions
  - Data analysis and machine learning applications
  - Cybersecurity and network assessments
  - Web and mobile app development
5. **Other Domains**
- Chemical process design and environmental audits
  - Business and management consultancy for process optimization

## 6. Problems Encountered and Resources Required

- Difficulty in identifying and securing consultancy opportunities.
- Limited time and availability of faculty members due to academic commitments.
- Ensuring compliance with legal and financial frameworks.
- Bridging gaps between academic expertise and industry-specific requirements.
- Dedicated consultancy cell for managing opportunities and operations.
- Adequate funding for project execution, including software, hardware, and human resources.
- Training programs to enhance the consultancy skills of faculty and students.
- Efficient project management tools and systems.

### Appendix

Sr. No	Client Organization	Title of Consultancy of project	Amount received (in Rupees), if any
<b>A. Civil Engineering</b>			
1	Sachin Patil, Chief Executive Officer, Akkalkot Nagar Parishad, Akkalkot	Concrete Mix Design of Grade M30	18880.00
2	Jayhind Sugar Pvt.Ltd. Aachegoan	Concrete Mix Design of Grade M30	18880.00
3	Akkalkot Nagarparishad ,Akkalkot	Concrete Mix Design of Grade M30	18880.00
4	Executive Engineer, Public Works Division, Osmanabad	Structural audit and Non-Destructive Testing of IPD Building, Civil Hospital, Osamanabad	106200.00
5	Eagle Infra India Ltd. Ulhasnagar.	Concrete Mix Design of Grade M15, M20, M25 and M30	43660.00
6	Phoneix C & I Project Private Ltd.	Structural audit and Non Destructive Testing of ESR	11800.00

<b>Sr. No</b>	<b>Client Organization</b>	<b>Title of Consultancy of project</b>	<b>Amount received (in Rupees), if any</b>
7	Shri Kale Narendra Ramrao, Engineers & Contractors, Latur	Concrete Mix Design of Grade M15, M20, M25 and M30	41300.00
8	M/s. B.R. Ande Construction, Latur	Concrete Mix Design of Grade M15 and M30	47200.00
9	Sr. Section Engineer, Central Railway(works), Solapur	Concrete Mix Design of Grade M25 and M30	27140.00
10	Deputy Engineer.(CMGSY), MRRDA Latur. Agent: Shri S. P. Patil, Togari, Dist.: Latur	Concrete Mix Design of Grade M15 and M30	47200.00
11	Deputy Engineer.(CMGSY), MRRDA Latur. Agent: Shri S. P. Patil, Togari, Dist.: Latur	Concrete Mix Design of Grade M15, M20, M25 and M30	33040.00
12	Sunrays Infrastructure, Bahodi, Jodhpur	Concrete Mix Design of Grade M25	16520.00
13	Shree J D Infrastructure, Jodhpur, ( Rajasthan)	Concrete Mix Design of Grade M25	14160.00
14	Honorable Principal District Judge. District & Session Court, Dharashiv	Structural audit and Non Destructive Testing of Main Court Building, Dharashiv	88500.00
15	Manchukonda Prakasham Industries India Pvt. Ltd.	Concrete Mix Design of Grade M40	16520.00
16	Enrich Energy Pvt. LTd., Tuljapur, Osmanabad Agent : N R Godara & Company	Concrete Mix Design of Grade M25	7080.00
17	Executive Engineer, Public Works Department, Section No-2, Solapur	Evaluation of the Safe Bearing Capacity for the Proposed Construction of Court Building Near Barshi Road, Solapur	43600.00
18	Sub Divisional Engineer, Public Works Department, Subdivision No 1, Dharashiv, (Osmanabad)	Evaluation of the Safe Bearing Capacity for the Proposed Construction of the Administrative Building of the	25960.00
19	Sub Divisional Engineer, Public Works Department, Subdivision, Omerga (Dist: - Osmanabad)	Evaluation of the Safe Bearing Capacity for the Proposed Construction of Administrative and Sub-divisional Office Building the Excise Department Premises, at Omerga Dist.: Omerga	31860.00
20	Executive Engineer, Public Works Division No.-2, Solapur	Evaluation of the Safe Bearing Capacity for the Proposed Construction of 50-Bedded Sub-Divisional Hospital at Tembhurni Dist.: Solapur	41300.00

<b>Sr. No</b>	<b>Client Organization</b>	<b>Title of Consultancy of project</b>	<b>Amount received (in Rupees), if any</b>
21	Sai Prem Construction, Latur-413512 c/o Divisional Engineer, M.S.R.T.C- Dharashiv	Evaluation of the Safe Bearing Capacity for the Proposed Construction of the Renovation of the Bus Station at Dharashiv Dist.: Dharashiv	31860.00
22	Unicare Technologies Pvt. Ltd wagholi, Pune	Evaluation of the Safe Bearing Capacity for the Proposed construction of the Sewage Treatment Plant at Kalaburagi Railway station	30680.00
23	Assistant Divisional Engineer, Central Railway, Kalaburagi, Karnataka	Evaluation of Subgrade Soil by California Bearing Ratio Test	292640.00
24	Akkalkot Nagar Parishad, Akkalkot	Evaluation of Subgrade Soil by California Bearing Ratio Test	4720.00
25	Deputy Engineer (PMGSY) MRRDA Latur, C/o Shri N.R. Kale Latur	Job Mix Design of Bituminous Concrete of Grade II by Marshal Mix Design	12890.00
26	Maharashtra Pollution Control Board, Pune	National Ambient Air Quality Monitoring of Solapur City	840000.00
27	GUBBI The Construction, Plot No.114, Behind Lokmat Press, Industrial Estate, Hotgi Road, Asara, Solapur-413003	Repairs and permanent adjustments of Auto Level	2360.00
28	Siddhivinayak Construction, Engineers & Government Contractor, Solapur	Permanent Adjustment of Auto Level	3540.00
29	GUBBI The Construction, Plot No.114, Behind Lokmat Press, Industrial Estate, Hotgi Road, Asara, Solapur-413003	Auto level Adjustment	1770.00
30	Superintending Engineer, IDW Wing, National Health Mission,. 2nd Floor Arogya Bhavan, Mumbai	Proof Checking of R.C.C. Design for the Proposed Construction of 50 bedded Sub-District Hospital at Bhoom,	254210.00
31	Chief Officer and Administrator, Akkalkot Municipal Council, Akkalkot.	Proof checking of proposed construction of Mini Multipurpose hall in Priyadarshani Sankrutik Bhavan in Prabhag No. 10 at Akkalkot for AMC, Akkalkot.	45430.00
32	Priyanka Appa Pise, C/o. 85/4, Bhavani Peth, Maddi Vasti, Solapur	Proof Checking of ESR	13570.00

Sr. No	Client Organization	Title of Consultancy of project	Amount received (in Rupees), if any
33	Er. Parikshit P. Harkud, PlotNo.54, Flat No.06,Rajyog Enclave, Jule Solapur, Solapur	Proof Checking of ESR 57,000 lit capacity Mouje: Kanthe halli, Tq. Akkalkot, Dist: Solapur ( Under Jal Jeevan Mission Scheme )	12390.00
34	Mr. Mahesh Tukaram Bedare Post. Sarkoli Tq. Pandharpur Dist. Solapur. C/o Executive Engineer, Rural Water Supply Division, Zilla Parishad, Solapur.	Proof Checking of R.C.C. Intake Well at Mugali, Tal Akkalkot, Dist; Solapur. (Under Jal Jeevan Mission Scheme )	7080.00
35	Pochampad Construction Pvt. Ltd. Solapur. C/o. Chief Technical Officer, Solapur City Development Corporation, Solapur.	Proof checking of Structural Design and Drawing of Typical Horizontal Thrust Blocks for various diameters at various locations	23600.00
36	Chief Officer, Akkalkot Municipal Council, Akkalkot, Dist. Solapur.	Proof Checking of ESR, Mhada colony, at Akkalkot	21712.00
37	Chief Officer, Akkalkot Municipal Council, Akkalkot, Dist. Solapur.	Proof Checking of ESR , Proof Checking, Rajiyalli Durgah	21712.00
38	The head, Department of civil Engg., C/o. Mr. Aryan Shaikh, School of Engg. & Sciences, MIT-ADT University, Pune. 2nd Floor Arogya Bhavan, Mumbai	Flexural Testing of R.C. beams- M.Tech. Project work of Student Sinhgad COE, Pune	9440.00
39	Mr. Mustafa Balorgi, Karanja Chowk, Akkalkot	Proof Checking of ESR at Torani Taluka .Akkalkot Dist. Solapur	12214.00
<b>Total Amount, Rs. (A)</b>			<b>2341498.00</b>
<b>B. Information Technology</b>			
01	Zilla Parishad, Solapur	Verification of Specifications of Computer and Printer	1770.00
02	Nirmal Anorectal and Multispeciality Hospital, Solapur	WhatsApp Chatbot	13098.00
03	Dackway Consultancy, Pune	Design and Development of Educational Portal	11800.00
04	Pratik Badjate & Associates, Solapur	Sambhaji Nagar	11800.00
05	Aprateem Educational Informational Desk, Solapur	Design and Development of a Web based Edu Tech Content Management Portal for Students Skill Development.	5900.00
06	Acron Systems, Kolhapur	Desktop Manager	11800.00
<b>Total Amount, Rs. (B)</b>			<b>56,168.00</b>

Sr. No	Client Organization	Title of Consultancy of project	Amount received (in Rupees), if any
<b>C. Electronics &amp; Computer Engineering</b>			
01	Laxmi controls pvt, Ltd, Solapur	Modification in existing load sensing mechanism of power loom	10000.00
02	Milind Traders, Solapur	Static website design and content management, domain name registration and website hosting	10500.00
03	Ovi Enterprises, Kolhapur	Design , development, PCB layout and testing of Auto cut-off system for 12v battery charger	10700.00
04	Resa Agrotech Private Limited, Velapur, Barsi	Design automatic watering system for home plants	10700.00
05	Sathe Engg Co., Solapur	Add-on board design for existing water level controller	21000.00
06	M/s. Prashant Textiles, 155/5, Akkalkot Road, Solapur	Recommendation for purchase of 3 phase industrial voltage stabilizer	10000.00
07	Atharv Industries. Agro Industries, Hyderabad Road, Solapur	Installation charges of 40KVA APFC Panel	20500.00
08	Ratnanath Industries, Sangli	Design of actuator mechanism for automation of patient bed	10500.00
<b>Total Amount, Rs. (C)</b>			<b>1,03900.00</b>
<b>D. Electronics and Telecommunication Engineering</b>			
01	Sarvana Tryitfirst India Pvt. Ltd, Hyderabad	Consultant for Mentoring Tryitfirst Interns at WIT for Software development in AR and Web 3.0	11000.00
02	Spartan solar technology private limited Solapur	Design and development of system for multiple street light on off control	10200.00
03	Anjali Plastic, Solapur	Data logging and monitoring	10200.00
04	Star Beverages, CTS No.51/1/A, Plot No.51/1/5, North Sadar Bazar, Solapur 413 005.	Consultancy work for PLC Automation System.	10500.00
05	Deepak Jewellers, Jalgaon	Website Design and Business Analytics tool for Jewelry Shop	11000.00
06	Arka Enterprises , Awanti Nagar, Solapur	Fully Automated Solar Grass Cutter	10000.00
07	Plute Coder, Barshi	Consultancy for Development of Realtime Attendance Monitoring System	30900.00
08	Birajdar Krushi Kendra, Mandrup	Design of Smart Device for measurement of NPK values in	21000.00

Sr. No	Client Organization	Title of Consultancy of project	Amount received (in Rupees), if any
		Agriculture System	
09	Petalight Enterprises, Solapur	Design of smart Switches	11500.00
10	Arka Enterprises , Awanti Nagar, Solapur	Fully Automate Solar Grass Cutter	10100.00
11	BIT Electronic Systems Pvt Ltd., Baramati, Pune	IOT based Air Quality Monitoring System	10000.00
12	Bitcode Technologies Pvt Ltd, Pune	Web Development using react & Js	10100.00
13	YGrene Technology Solutions Mahalunge Pune	IOT /Embedded System Design	10500.00
14	Pratik Gujar , 317/22 Bhoi Lane, Ram Mandir Road, Baramati, Pune-413102	Consultancy work for Main Advisor and Technical Support Executive	10000.00
15	Aller Technologies Pvt. Ltd., Gulbarga	Application development and evaluation of Home Control system	10000.00
<b>Total Amount, Rs. (D)</b>			<b>1,87,000.00</b>
<b>E. Mechanical and Automation Engineering</b>			
01	Sham Innovative Solutions, 30/31 Bhavani Peth, SOLAPUR	Design of compact and comfortable Cervical Collar	18880.00
02	Aditi Tools, Bhosari, Pune	Design of Special purpose tool	20060.00
03	Yashashree Cold storage and warehouse, Boramanii, Solapur	Valuation of the factory	10000.00
04	Technotrends Innovations Pvt. Ltd., Pune	Optimization of Receiver tank, thickness used in reciprocating air compressor	12390.00
05	Amey Design Solution, Jalgoan	Design of Powder mixing machine used in food industry	11800.00
06	Shri SPAN Engineering	CNC programming of AVL-3 camshaft	5900.00
07	Soham Ayurved Rasashala, At. Post SANJWAD, South Solapur	Design of Stirring Mechanism system	17700.00
08	Kano Engineering & Technology Pvt. Ltd. Pune	Design & analysis of Sheet Metal parts	12390.00
09	Supreme Industrial Corporation, Industrial Estate, L.K. Road, Patil Nagar, Solapur	Comprehensive Assessment of Pneumatic System	10030.00
10	3Dincise Engineering Pvt. Ltd., Pune	Analytical Design of a new product Solar Evaporative cooling for Farm Harvesting	7080.00
11	Laxmi Druken Komponenten Pvt.Ltd.	Machining of 4R1040 LOP BODY	4970.00
12	Shivaji Polytechnic, Sangola	3D Printing and Design	5000.00

<b>Sr. No</b>	<b>Client Organization</b>	<b>Title of Consultancy of project</b>	<b>Amount received (in Rupees), if any</b>
13	Laxmi Druken Komponenten Pvt.Ltd.	Machining of 4R1040 LOP BODY	5072.00
<b>Total Amount, Rs. (E)</b>			<b>1,41,272.00</b>
01	N.S. Singhvi Higher Secondary School, Mandsaur (M.P.)	Sponsored Project on Smart Voting System	11800.00
02	M/s. Sureshchandra Premchand Phade	E Commerce website for fertilizer shop	23600.00
03	Sajawat Handloom	E Commerce website for Sajawat Handloom	11800.00
04	Dr V M Govt Medical College, Solapur	Annual Maintenance of website for one year, Installation of domain validated SSL/TLS for domain vmgmc.edu.in	17700.00
05	Mrs Shruti Ulhas Bagewadi	School Automation System for V M Mehta High School	11800.00
06	Rajshekhhar M Bashetti	Sponsoring the final year project "Car Automation using Machine Learning" in the Artificial Intelligence and Business Intelligence domain	11800.00
07	Vedant Enterprises	Uniform Inventory Management System	11800.00
08	Mr Sachin Patva- Swastik Electronics and Electricals	E & E Wizard: An E-commerce Web Application for Electricals, Electronics Store	11800.00
09	Dr Shaikh Ashif Bashirahamad	Consultancy work- Website Development for Sanjeevani Clinic	11800.00
10	Shri Siddheshwar Shikshan Mandal's College of Architecture	Development- Website Design	46000.00
11	Echo Organic Products Mr Vinod Rama Madhekar	Digital Agriculture Website	11800.00
12	Balaji Tools and implements Mr Rajiv Goyal	Distributor- Retailer System for E-commerce	11800.00
13	K9 Reality Mr. Shubham Kandle	Development- Website Design	11800.00
<b>Total Amount, Rs. (F)</b>			<b>2,05300.00</b>
<b>Total Amount (A+B+C+D+E+F) =Rs.</b>			<b>30,35138.00</b>