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SRM Institute of Science and Technology (SRM-IST)

SRM Institute of Science and Technology (formerly known as SRM University) is one of the top-ranking universities in India with a national recognition of A++ grade by NAAC, Category 1 University by MHRD, and Rank 41 by NIRF and International recognition of QS I-GAUGE Diamond rated Institute. SRM IST is also a recipient of National Intellectual Property Award 2018 in the category of Indian Academic Institution for Patents and Commercialization from the Ministry of Commerce and Industry, Government of India. SRM-IST has over 38,000 students and more than 2600 faculty across all the campus, offering a wide range of undergraduate, postgraduate and doctoral programs in Engineering, Management, Medicine and Health Sciences, Agricultural Sciences, Law and Science & Humanities.

Chancellor of SRM-IST, Dr. T.R. Paarivendhar interacting with Horticulture students
Agriculture is central to the development of a country. Everyone who eats food is connected with agriculture. It is the farmers who toil in the fields to produce the food but their economic status has never been self-sufficient. The Government of India have taken several steps to double the average farmer’s income in the country. SRMIST decided to support this initiative by introducing the Faculty of Agricultural Sciences into its ambit of quality education.

The undergraduate programme B.Sc. (Hons) Horticulture was introduced from 2018 - 19 academic year and B.Sc. (Hons) Agriculture is added from 2019-20. More UG, PG and Diploma programmes in other fields of agricultural sciences will be initiated in a phased manner.

The College of Agricultural Sciences (SRM-CAS) being established near Acharapakkam will be serving as a futuristic institution for higher education, research and extension in agriculture and allied sciences integrating Ecology, Food, Nutrition and Health.

SRM-CAS will strive to promote agriculture with healthy food production and healthy lives.

Dr. T.R. Paarivendhar
Chancellor

OUR VISION
To emerge as a World-Class University in creating and disseminating knowledge, and providing students a unique learning experience in Science, Technology, Medicine, Management and other areas of scholarship that will best serve the world and betterment of humanity.

OUR MISSION
MOVE UP through international alliances and collaborative initiatives to achieve global excellence.

ACCOMPLISH A PROCESS to advance knowledge in a rigorous academic and research environment.

ATTRACT AND BUILD PEOPLE in a rewarding and inspiring environment by fostering freedom, empowerment, creativity and innovation.
The Value of Green

Agriculture is a primary production system in India that makes a significant contribution to the wealth and quality of life for rural and urban communities. Small holders now cultivate 42% of operated land and constitute 83% of total landholdings.

Green Revolution (GR) has changed the traditional pattern of cropping for higher efficiency & productivity of the production systems. If 1950s was the decade of development and expansion of irrigation and 1960s of intensification of high yielding variety (HYV) in the most favourable environments, 1970s was one of exploitative agriculture confined to more favourable ecologies through integration of HYV, fertilizer and pesticide based technology, particularly of wheat and rice. It was only in the late 70s or early 80s that the need for appropriate technology for rainfed, under-invested dry farming and stressed ecologies, was recognized. These were areas that had remained beyond the pale of GR technology.

India today is not only self-sufficient in respect of demand for food, but is also a net exporter of agri-products occupying the seventh position globally. It is one of the top producers of cereals (wheat & rice), pulses, fruits, vegetables, milk, meat and marine fish. The availability of fruits, vegetables, milk, meat, and fish has increased.

The impressive agricultural growth and gains since 1947 stand as a tribute to the farmers’ resilience to multiple challenges and to their grit & determination to serve and secure the nation’s demand for food and raw material for its agro-industries.

Having direct and indirect linkages with rest of the economy, agriculture sector contributes to rural prosperity through employment and income provision to the masses. Evidences suggest that the speed with which agriculture sector reduces rural poverty is at least twice what the rest of the economy does.

Owing to the increasing population over the years, demand for food is naturally expected to increase in coming years. The mission of "Doubling of Farmers’ Income" (DFI) in India has enthused and fuelled lot of energy and motivation among the stakeholders and channelled the efforts in a unified direction.

(Source: http://agricoop.nic.in/doubling-farmers)
The overall mission of the SRM College of Agricultural Sciences (SRM-CAS) is to provide knowledge and support for teaching, conducting research and capacity-building on the principles and practices for climate-smart, sustainable agriculture to produce healthy food with higher-factor productivity and livelihood security.

Strategic Plans

- Establish a model agricultural campus, in Achirupakkam with Integrated Agroecological Systems (IAS) for hands-on teaching of students, farmers and interested public to gain experiential learning about food production and its relationship to the ecosystem.
- Establish New Schools of Agroecology/Crop Health/ Agricultural Rural Development/Precision Farming for Research and Higher Education.
- Introduce diploma programmes on healthy crops for healthy life; herbal and nutri farming, soil health management, urban farming, economic irrigation; bioenergy, agribusiness management, precision farming technologies; village resource centre etc.
- Establish Rural Development Institute in SRM-CAS.
- Promote agroecological and climate-smart principles to support the adaptation of agriculture and allied activities for food and livelihood security.
- Develop innovative technologies and farm machinery for hilly and tribal agriculture.
- Bridge the gap between agriculture and other sciences through hybridized, integrated approaches.
- Enabling value chain for agroecological market produce.
- Transforming agriculture into agribusiness.
- Promoting agricultural rural development with secondary agriculture.
- Empowering farmers and farm women with modern extension delivery system.
- Introduce Summer School on Agroecology for schools students, agri-professionals and the public.
- Organize international/national symposia, workshops, e.g. Innovative Sustainable Crop Production Systems (ISCPS); Agroecological Food Systems; Care Farm for healthy life etc.
- Create “New Extensionists“ for community-based extension with knowledge on agricultural markets.
- Contribute to the initiatives on “Doubling the Farmers Income” and “Sustainable Development Goals”.

“Agriculture is future”
Agroecology

Agroecology is the science that provides the basic ecological principles for how to study, design and manage agroecosystems that are both productive and natural resource conserving, and that are also culturally sensitive, socially just and economically viable.

“Agroecology offers multiple benefits, including for increasing food security and resilience, boosting livelihoods and local economies, diversifying food production and diets, promoting health and nutrition, safeguarding natural resources, biodiversity and ecosystem functions, improving soil fertility and soil health, adapting to and mitigating climate change, and preserving local cultures and traditional knowledge systems” (FAO).

Since independence, especially after 1960’s, the emphasis in Indian agriculture has been more on exploitation of natural resources of land and water and less on improving, restoring, reclaiming and enhancing their productivity and sustainability. Presently, Indian agriculture is facing the critical challenge of feeding an escalating human population under increasingly declining soil quality and changing climatic conditions.

The accelerated use of natural resources, the degradation of the land resource base with accompanying impacts on biodiversity and agricultural productivity and also the impending effects of climate change are all posing a serious threat to the survival and welfare of the people. Natural resources need to be managed in a holistic manner as there are direct linkages among the various components. There is need for more awakening on natural resource governance.

Agricultural practices with different agroecology models involving diverse range of alternative practices designed to reduce dependence on synthetic chemical pesticides, fertilizers and antibiotics; cut costs; increase profits; and reduce the adverse environmental consequences of agricultural production are becoming popular in India.

Agroecology will be a major thrust area in the Faculty of Agricultural Sciences and has been introduced in the curriculum of UG programmes. Research on agroecology will be intensified when the School of Agroecology is established in SRM-CAS.
Agricultural Rural Development

Rural development is the process of improving the quality of life and economic well-being of people living in rural areas. Rural development is vital and more than 50 per cent of India’s population will continue to reside in rural areas until 2050. The concept of rural development must be considered with reference to agriculture, since agriculture is the basis of the livelihood of most rural families.

The human factor behind agriculture, the farmers, remain in frequent distress, despite higher productivity and production. As many as 22.50% of the farmers live below official poverty line. The per capita income of the rural households is significantly less than that of urban households in India and the share of agriculture in rural income has witnessed a downward trend.

A typical farming household manages expenses with unsteady, unpredictable and irregular income streams, owing to the seasonal nature of agricultural output which is further subject to other externalities. The overall wellbeing of the rural population depends on agriculture as a primary sector, and various associated secondary and tertiary sector activities that either support agriculture or are supported by agriculture.

Large tracts of arable land have turned problem soils, becoming acidic, alkaline & saline physico - chemically. Climate change is beginning to challenge the farmer’s ability to adopt coping and adaptation measures that are warranted. The costs of cultivation are rising. The markets do not assure the farmer of remunerative returns on his produce. Sustainability of agricultural growth faces serious doubt. Timely availability water, labour, inputs, and credit are serious concerns facing the farmers.

There is demand for income growth from farming activity and self-sustainable models empowered with improved market linkage is required. There is need to transform the situation from ‘rural people as consumers of industrial goods’ to ‘rural people as producers of industrial grade output, especially the population related to farming.

(Source: http://agricoop.nic.in/doubling-farmers)

SRM-CAS will be involved in the agricultural rural development of Tamil Nadu by establishing Agricultural Rural Development Centres in the districts and provide technical support from Rural Development Institute in the College of Agricultural Sciences, Achirupakkam.)
Herbal and Nutri Farming

Traditionally, several plants/trees have been used for their medicinal properties and health benefits. Leaves, roots, flowers, seeds, barks, resin and pericarp of herbal plants/trees are used for nutrition supplement, flavouring, medicine, fragrances, savoury and cosmetics. Herbs are tremendously popular these days with medicinal herbs, culinary herbs, and herbal teas, baths, candles and aromatherapy essences.

India is one of 17 mega biodiversity countries and contribute about 7% of world biodiversity. More than 7000 plants species are known to be used as medicinal plants out of 17000-18000 flowering plants species in India. Largest share of the world population, about 80%, rely on traditional medicines for their primary health care needs which are herbal and healer based. The inclination toward the herbal remedy is also increasing worldwide due to the harmful effects of synthetic chemicals.

Food security is not only about the quantity of food which we consume; it is also about the quality and diversity of that food as well. Nutrition insecurity contributes to the deaths of almost 10 million people each year and affects one billion people’s health. Malnutrition, often called the “hidden hunger”, can lead on to life-threatening illnesses. More than 70% of Indian women and children have serious nutritional deficiencies. The nutrition challenges cannot be solved solely by the health sector: farmers are the first nutrient providers and the entire agri-food chain has a vital role to play. From increasing the availability of total calories, to specific measures on nutrient deficiencies, agriculture can play an important role in addressing nutrition security. Moringa and sweet potato for example, are excellent sources of many vitamins and minerals.

Medicinal and nutri-crops can be good source of income for farmers, as they are quite important for a number of pharmaceutical companies which have invested in contract farming of herbal crops. There is a huge scope for identifying the medicinal and nutritional values of several plants and developing herbal products.

(https://www.nmfp.nic.in/content/medicinal-plants-fact-sheet)

For good nutrition and good health, research on crops with nutrient and medicinal values under Herbal and Nutri-Farming will be promoted in SRM-CAS.
Urban Farming

Urban farming is the practice of cultivating, processing and distributing food in or around urban areas. It can also involve animal husbandry, aquaculture, agroforestry, urban beekeeping, and horticulture. Food security, nutrition, and income generation are key motivations for the practice. More direct access to fresh vegetables, fruits, and meat products through urban farming can improve food security and food safety. Urban farming includes recreation and leisure; economic vitality and business entrepreneurship; individual health, and well-being; community health and well-being; landscape beautification; and environmental restoration and remediation.

The energy used to transport food is decreased when urban farming can provide cities with locally grown food. The energy-efficient nature of urban farming can reduce each city’s carbon footprint by reducing the amount of transport that occurs to deliver goods to the consumer. Also, these areas can act as carbon sinks offsetting some of the carbon accumulation that is innate to urban areas, where pavement and buildings outnumber plants. Choosing plants that do not lose their leaves and remain green all year can increase the farm’s ability to sequester carbon. A rooftop containing 2000 m² of uncult grass has the potential to remove up to 4000 kg of particulate matter. Only one square meter of green roof is needed to offset the annual particulate matter emissions of a car.

Urban agriculture is associated with increased consumption of fruits and vegetables which decreases risk for disease and can be a cost-effective way to provide citizens with quality, fresh produce in urban settings. Produce from urban gardens can be perceived to be more flavourful and desirable than store bought produce. Urban agriculture also provides quality nutrition for low-income households.


Vacant urban lots are often victim to illegal dumping of hazardous chemicals and other wastes. They are also liable to accumulate standing water and “grey water”, which can be dangerous to public health, especially left stagnant for long periods. The implementation of urban agriculture in these vacant lots can be a cost-effective method for removing these chemicals.

Soil-less cultivation with hydroponics, aquaponics and limited-space cultivation with vertical garden are possible under urban farming.

SRM Urban Farm Centre (SRM-UFC) established in SRM-IST, Kattankulathur will provide urban extension service.
Precision Farming

Precision farming is a key component of the third wave of modern agricultural revolutions. Precision farming, as the name implies, means application of precise and correct amount of inputs like water, fertilizer, pesticides etc. at the correct time to the crop for increasing its productivity and maximizing its yields. Precision agriculture management practices can significantly reduce the amount of nutrient and other crop inputs used while boosting yields. Farmers thus obtain a return on their investment by saving on water, pesticide, and fertilizer costs. Precision farming management concept is based on observing, measuring and responding to inter and intra-field variability in crops. It is a management system where crop production practices and inputs such as seed, fertilizers and pesticides are variably applied within a field. Input rates are based on the needs for optimum production at each within-field location. Since over-application and under-application of agrochemicals are both minimized, this strategy has the potential for maximizing profitability and minimizing environmental impacts.

The precision farming approach is not a product of engineering technology, but rather has its foundation in the application of sound agronomic principles on a within-field, point-to-point basis. The practical implementation of precision farming is dependent on technological developments to provide, manage, and utilize the vast quantities of data required to understand spatial variations in crop yields and in the factors that affect yields. Today, low-cost powerful computers, real-time controllers, variable rate application hardware, accurate location systems, and advances in sensor technology have combined to provide the technology to make precision farming a reality.

The practice of precision farming has been enabled by the advent of GPS and GNSS. The farmer’s and/or researcher’s ability to locate their precise position in a field allows for the creation of maps of the spatial variability of as many variables as can be measured. These arrays consist of real-time sensors that measure everything from chlorophyll levels to plant water status, along with multispectral imagery. This data is used in conjunction with satellite imagery by variable rate technology (VRT) including seeders, sprayers, etc. to optimally distribute resources.

The precision farming approach to crop production may be viewed as a four-step process. An initial step in this process is spatial measurement of those factors that limit or otherwise affect crop production. This variability data is then used to develop a management plan for the variable application of inputs such as fertilizers and herbicides. Inputs are applied in precision field operations. The effectiveness of the precision farming system is evaluated with respect to economics and environmental impacts.

(https://pdfs.semanticscholar.org/c811f/739bf0208f20a85bc58446c8119311b7d8cb.pdf)

Precision farming research will be one of the major thrust areas in SRM-CAS with Industry and International collaboration.
B.Sc.(Hons.) Agriculture / Horticulture Programmes at SRM-IST

About the Faculty of Agricultural Sciences: Information about the Faculty and the faculty profiles are available at: http://www.srmuniv.ac.in/faculty-of-agricultural-sciences/vision

Programmes Offered: SRM – College of Agricultural Sciences offers B.Sc. (Hons.) degree programmes in Agriculture and Horticulture in 2019.

Structure of the Programme: The entire B.Sc. (Hons.) Programme of study will consist of career streams distributed over eight semesters with two semesters per year viz., Compulsory Core; Supportive Course, Allied; Extension Activity, Supplementary Course; Student READY and Elective Core.

<table>
<thead>
<tr>
<th>Duration</th>
<th>8 semesters (4 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>System of Education</td>
<td>Semester course credit system (as per the Report of the Fifth Deans Committee 2017, Agricultural Education Division, Indian Council of Agricultural research, New Delhi)</td>
</tr>
<tr>
<td>Total Credit Hours of Learning</td>
<td>180 - 184</td>
</tr>
<tr>
<td>Distribution of Credits</td>
<td>• theory • theory based practical • practical</td>
</tr>
<tr>
<td>Number of working days per semester</td>
<td>110 - 112</td>
</tr>
<tr>
<td>Attendance requirement</td>
<td>80%</td>
</tr>
</tbody>
</table>

Eligibility for Admission to B.Sc. (Hons.) Degree Programmes
- Candidates who have studied in regular, full-time and formal education alone are eligible to apply
- Candidate should have been born on or after 01.07.1999

H.Sc. / Equivalent - Academic Stream: Candidates seeking admission into B.Sc. (Hons.) Agriculture / Horticulture programme must have passed the Higher Secondary Examination (10+2) conducted by any recognized board / University, with any one of the following subject group:

<table>
<thead>
<tr>
<th>Group I</th>
<th>Physics, Chemistry, Biology and Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group II</td>
<td>Physics, Chemistry and Biology</td>
</tr>
<tr>
<td>Group III</td>
<td>Physics, Chemistry and Mathematics</td>
</tr>
<tr>
<td>Group IV</td>
<td>Physics, Chemistry, Botany and Zoology</td>
</tr>
<tr>
<td>Group V</td>
<td>Physics, Chemistry and Forestry</td>
</tr>
<tr>
<td>Group VI</td>
<td>Physics, Chemistry, Biology and Agriculture</td>
</tr>
<tr>
<td>Group VII</td>
<td>Physics, Chemistry and Agriculture</td>
</tr>
</tbody>
</table>


Eligible Minimum Qualifying Marks: 50 % aggregate marks.

Intake and Fee:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Branch</th>
<th>Intake</th>
<th>Tuition Fee (annual)</th>
<th>Hostel Fee (annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc. Honours</td>
<td>Agriculture</td>
<td>120</td>
<td>₹1,00,000</td>
<td>3 sharing room</td>
</tr>
<tr>
<td>B.Sc. Honours</td>
<td>Horticulture</td>
<td>120</td>
<td>₹1,00,000</td>
<td>Non-AC: ₹99,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AC: ₹1,90,000</td>
</tr>
</tbody>
</table>

Registration fee: First Year one-time non-refundable and non-transferable- ₹10,000/-

Examination Fee per Semester: Will be additional based on the number of subjects registered for examination.

How to apply?

i. Apply Online with e-payment.
   Use the URL: https://applications.srmuniv.ac.in/ to register and pay online.

Instructions
- All fields marked with * in the application form are mandatory to be filled.
- Enter student’s personal particulars carefully. Name entered cannot be changed later.
• Please keep the following scanned documents ready for uploading before filling the application form:
  a) Passport sized photograph (dimension 200 x 230 pixels preferred)
  b) Signature (dimension 140 x 60 pixels preferred)  c) XII marks statement (self-attested)

• After successful submission of the application form, an application number will be generated. Save that number for future reference and communications.

ii. Online with Demand Draft

Application to be filled online by visiting https://applications.srmuniv.ac.in/ and the same can be downloaded and sent to us with the DD for ₹1,100/- drawn in favour of SRMIST, payable at Chennai. This must reach us before the last date specified. Candidates should write their name and address on the reverse of DD and send to:

The Director,
The Directorate of Admissions,
SRM Institute of Science and Technology (formerly known as SRM University), Kattankulathur,
Kancheepuram District, Tamil Nadu 603203.

Your application will be processed only upon receipt of the DD.
Cost of application form is ₹1,100/-
Last Date to Apply: 30 June 2019

Admission Procedure:

• Online Application form will be available from January 2019
• There is NO ENTRANCE EXAMINATION
• Candidates will be called for counselling based on the fulfilling requirement of minimum marks in the qualifying examination.
• Candidates can choose their program
  a. fulfilling the eligibility criteria and
  b. subject to the availability of seats at that point of time
• Upon selection of programme, tuition fees, and other applicable fees must be paid at the time of counselling
• Provisional Allotment Letter (PAL) will be issued to confirm the candidate’s admission

Counselling Procedure: Will be updated in due course

Document submission on admission:
The following documents in original are required to be submitted at the time of Admission:
• Any age proof certificate
• Qualifying examination mark statements of all attempts
• Transfer Certificate / School Leaving Certificate
• Migration Certificate (if issued by the board)
• Copy of Provisional Allotment Letter
• Recent Passport size colour photos 4 nos
• Affidavits towards Academics and Hostel on ₹20/- non-judicial Stamp Paper
• Student Profile
• Two photocopies of all original documents. (Except Affidavits / Physical Fitness Certificate / Student Profile)

Anti-Ragging: College/ University campus is a place to find valuable friendship and to cherish unforgettable moments. We, here at SRM strongly condemn any kind of ragging practices. Our students welcome the freshers with flowers and advices and they do not believe in violence or unhealthy practices. Our faculty members impart good values with education and that is what sets SRM apart. SRM-IST follows the UGC regulations in this regard and affidavits must be filed by the Student and the Parent or Guardian.
• UGC Regulations on Curbing the Menace of Ragging
• Affidavit by the Student
• Affidavit by Parent Guardian

Cultivate endless opportunities to DREAM, DECIDE & DASH with your academic journey at SRM College of Agricultural Sciences
Scope / Career Opportunities

Diverse career opportunities exist in agricultural production; agricultural marketing; agricultural processing; agricultural export; agricultural education; agricultural research, administration in the Government, banking sector, civil society organizations, non-government organizations; agroindustries; agricultural communication etc. Pathway varies for each job in agriculture.

<table>
<thead>
<tr>
<th>Career Cluster Stream</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own Farm</td>
<td>Set up your own farm in your native place and profitably produce agri/horticultural products and become a model farmer</td>
</tr>
<tr>
<td>Scientist / Teacher</td>
<td>Pursue higher studies (PG, Ph.D., Post-doctoral) and work in National and International Agricultural Education Institutes and Agricultural Research Organizations (ICAR, IRRI, ICRISAT, IFPRI etc), agricultural Service Organizations (WORLD BANK, FAO)</td>
</tr>
<tr>
<td>Extension Specialist</td>
<td>Jobs in Government/ Non-Government Organizations/ Agribusiness Companies and contribute to knowledge sharing with farmers</td>
</tr>
<tr>
<td>Administration</td>
<td>Become an IAS/ IPS/ IFS Officer and contribute to public governance. Success rate of agricultural graduates is 12 -19 %.</td>
</tr>
<tr>
<td>Agribusiness and management</td>
<td>Become a CEO by setting up agroprocessing centres, agri-marketing agencies, agricultural export, nurseries, renewable energy, farm implements; bioproducts</td>
</tr>
<tr>
<td>Banking</td>
<td>Loan officers/ Financial managers in nationalized and private banks</td>
</tr>
<tr>
<td>Expert</td>
<td>Consultancy in urban farming, farmer education, landscaping, organic farming, agricultural communication</td>
</tr>
<tr>
<td>Jobs in agriculture industries</td>
<td>Sales/ Marketing/ Farm managers in various industries such as fertilizer, sugar, agrochemical, processed food, fruits, flowers, vegetables, landscaping, organic products</td>
</tr>
</tbody>
</table>

There is no end for agriculture as long as there are human beings
Connect with us
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