

GTU E-Courses on Smart Cities Development

**“GOI announced 60 SMART CITIES,
And yet another 40 Cities more to go...
India needs more SMART CITY PROFESSIONALS now...
Participate in E-COURSES to gain Competitive Advantage.”**



Available E-Courses

1. *Smart Cities Planning and Development*
2. *Project Management in Smart Cities*
3. *Application of Solar Energy for Smart Cities*
4. *Green Buildings in Smart Cities*
5. *Solid waste Management in Smart Cities*
6. *Smart Transportation for Smart Cities*
7. *Safety, Security and Disaster Management for Smart Citizen*
8. *Planning and Development of Smart Village*
9. *Smart E-Governance*
10. *Sustainable Water and Sanitation for Smart Cities*
11. *Sustainable Smart Funding for Smart Cities*

Course Duration: 6 Months (Starting from January 2018)

Course fee: INR 15,000/- per Course

Mode of Delivery: Online

Admissions Open –

Registration starts from December 18, 2017 up to until January 17, 2018



**Graduate School of Smart Cities Development
Gujarat Technological University**

AHMEDABAD INDIA

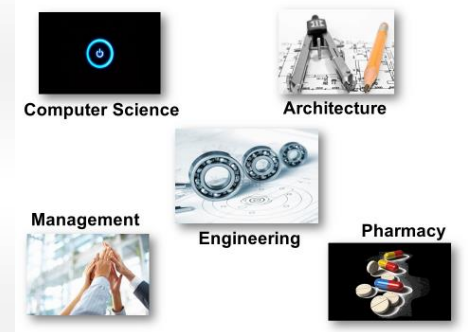
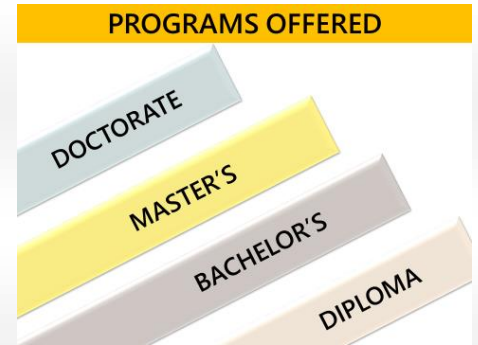
About GTU

Gujarat Technological University (GTU) is established by Government of Gujarat, largest state university of Gujarat, catering to the fields of Engineering, Business Management, Computer Science, Pharmacy and Architecture. GTU is having a pool of more than 5,00,000 students and 18,000 professors teaching in more than 500 affiliated colleges/institutes across the state of Gujarat.

GTU has initiated a number of innovative policies and it has put in place systems to develop GTU into a great university. Today GTU is considered to be the benchmark among the technological universities of India. Its industry-oriented academic programs and its efforts for establishing and maintaining an active relationship with industries and businesses through GTU Innovation Council has been recognized as the most successful effort in the country. Its Internationalization effort, its Student Start-up Support System and its programs for dissemination of knowledge about IPR are by far the best and most extensive university programs in India.

GTU has established fourteen Post-graduate Research Centres, including the Centre for Infrastructure, Transport and Water Management, Centre for Environmental and Green Technologies and Centre for Environment and Energy Efficiency. It has sixteen Research Groups and four Boards for Research & Development Boards.

The Innovation Council of GTU is well known in the country for its initiatives in grass root innovation work by the engineering students for solving problems of SME industrial units located throughout Gujarat. Intensive innovation efforts have resulted in many patentable outcomes. GTU's Policy Documents for Student Start-up Development and for Skill Development Mission are being used by universities all over India.



About GTU-Graduate School of Smart Cities Development (GGSSCD)

Gujarat Technological University has set up the Graduate School of Smart Cities Development (GSSCD) so as to create a resource centre for the nation which understands the requirement of the cities and citizens and helps in the smart development by producing required human resource, relevant research and by encouraging and welcoming projects in smart technologies in its incubator space. The Graduate School will contribute by imparting education, related to smart cities development. The Graduate School will also be involved in the research, consultancy and capacity building activities to support the governments at all levels.

The Graduate School seeks to involve industries and the society to ensure that its studies and research have a relevance to the needs of the society and the industries. Therefore, the graduate school has invited KNOWLEDGE PARTNERS from industry and from cities to avail of their real-life experience. Currently there are three KNOWLEDGE PARTNERS as shown in graphically.

The Graduate School also promotes institutes for research partnership to carry out the research for the components at grass root level of smart city development. Therefore, the Graduate School Invited educational and research institutes of GTU and others to become Research Partner with the graduate school and created the only one of its kind of network of expert from various domain of expertise for contribution to smart cities development. Currently there are more than 30 colleges/institutes in Gujarat as Research Partners of the Graduate School.

Vision of GTU-GSSCD

To become a national resource centre in smart cities development by developing as a point of confluence for Industry, Academia and Government and help developing policies and plans at various Governmental levels.

Objectives of GTU-GSSCD

Academic

- Post Graduate Diploma in Smart Cities to be offered by online courses shortly. Those who have completed current online courses will get credit for PG Diploma
- Conducting short certificate courses on related topics for developing skilled staff and workforce.
- E-courses on various aspects of organization, technologies and life in smart cities.
- To become a National Resource Centre in smart cities development by developing as a point of confluence for Industry, Academia and Government and help developing policies and plans at various Governmental levels

Research

- To conduct research through sensor lab on development on smart cities. Our present sensor lab will be augmented with support from global experts such as IBM/CISCO. This full-fledged lab will be available for research to GTU Faculties and students, smart city municipal corporations and academia in India and abroad.
- To work with universities and research institutions across the globe to develop innovative technologies.
- To conduct research on the requirements of the Indian cities & citizens and help determine the best of technologies being used across the world in Indian context in collaboration with GSSCD Research Partners.
- To develop strategies for development, which enhances cultural strength of our diverse society in the area, where the smart city is located.

Consulting & Advisory

- Organizing Seminars / workshops /symposium in India.
- Capacity building and training by training municipal engineers and managers, government officers and industrial workers, required for smart cities.
- Advisory functions to government and industry.
- Techno management consultancy

GTU-GSSCD Knowledge Partner



Gujarat International Finance-Tech City



Gujarat Infrastructure Development Board



Gujarat Energy Research & Management Institute

GTU-GSSCD Activities



Lighting of lamp by Hon'ble Union Minister Shri M. Venkaiah Naidu on Inauguration of Graduate School on April 18, 2015



Speech by Shri Rajnikant Patel, Honorary Director, GSSCD on Inauguration of Graduate School on April 18, 2015



Lighting of lamp by Hon'ble Minister Shri Bhupendrasingh Chudasama, GoG & Shri Dhanksukh Bhanderi, Chairman, GMFB, on 3 day smart city training workshop July 10-12, 2015



Mr. Pratap Padode, Director- Founder, Smart Cities Council India giving presentation, on 3 day smart city training workshop July 10-12, 2015



Key Note Speech by Mr. Neelesh Kelkar, Head Smart city Development, IBM, India during Research Partners' smart city workshop on August 22, 2015



Visit to Heritage city Ahmedabad: Group picture of participants, during the three days smart city training workshop July 10-12, 2015



Lecture by Mr. Ravi Kumar Kanduri, Director, AECOM USA on Dholera Smart City Development during Research Partners' smart city workshop on August 22, 2015



Corporate Presentation by Mr. Nilesh Purey, Vice President, ICT, Gujarat International Finance Tec-City Co. Ltd., during the Visit to GIFT city, Gandhinagar on August 22, 2015

E-Course Name: Smart Cities Planning and Development

Course Code: GSSCDE501

Course Summary

Urbanization is not only associated with economic development but over the time it started aspiring people to better quality of life. Cities are seen as solutions for boosting economy, generating employment, creating skills, providing better health services and many more things. Expression of change from being habitat to providing such breadth of services was not brought in a day; cities have eventually developed into these dimensions. However, the state of urban service delivery in India's cities and towns is far poorer than is desirable for India's current income levels. Considering that the Indian economy has been one of the fastest growing economies in the world for some time, and aspirations and standards are raising, the current state of service delivery is simply unacceptable. Moreover, a successful city cannot operate efficiently in isolation from its environment. It must balance social, economic and environmental needs. Smart Cities focus on their most pressing needs and on the greatest opportunities to improve lives. They tap a range of approaches – digital and information technologies, urban planning best practices, public private partnerships, and policy change – to make a difference. They always put people first. During this course on Smart Cities Planning and Development, let's understand the dynamics of an Indian city and learn smart ways to plan, management and maintain our cities.

Course Objective

- Understanding the concepts, discourses and practices of "Smart Cities" across Globe: US, EU, UK, Middle East and South East-East Asia experiences
- Critical reflections on juxtaposition and relevance for smart cities of developing economies considering issues as Inclusiveness, Feasibility, Sustainability
- Understanding of road map for Planning Smart Cities and benchmarking their performance for Indian context

Course Modules

Module 1

- Introduction to "City Planning"

Module 2

- Understanding Smart Cities

Module 3

- Dimensions of Smart Cities

Module 4

- Global Experience of Smart Cities

Module 5

- Smart Cities –Global Standards and Performance Benchmarks, Practice Code

Module 6

- India "100 Smart Cities" Policy and Mission

Module 7

- Smart City Planning and Development

Module 8

- Financing Smart Cities Development

Module 9

- Governance of Smart Cities

Prospective Participants

The course shall offer a good academic and career enhancement prospects to the aspirants like Entrepreneurs, Employees of Private/Government sectors, Members of NGOs, Consultants or Students.

The aspirant having the academic or professional backgrounds from Architecture, Civil Engineering, Information and Communication Technology, Business Management and Commerce, Science, Sociology and other relevant area are likely to get maximum advantage from this course.

E-Course Name: Project Management in Smart Cities

Course Code: GSSCDE502

Course Summary

Project Management would be an integral facet for smart infrastructure and cities. Smart City projects involve great technical complexity, and require a wide diversity of skills to control and monitor them. Like other complex mega infrastructure projects Smart City projects are subjected to risk and uncertainties throughout all the phases leading to huge time and cost overrun. Managers are faced with the problem of putting together and directing large temporary organizations while being subjected to constrained resources, limited time, and environmental uncertainty. To cope with complexity and uncertainty, new forms of project organization and management have evolved. Project management plays an important role in developing the Smart Cities. Project management has grown in response to the need for a managerial approach that deals with the problems and opportunities of modern society. It provides the diversified technical and managerial competency and decentralized communication and decision making necessary to meet the challenges of complex, unfamiliar, high-stakes activities. Application of modern project management tools would ensure more collaboration, more communication flow and much flawless implementation of Smart City projects. Modern project management concepts of application of Integrated Project Delivery (IPD) and Building Information Modeling (BIM) would reduce the co-ordination problems and would ensure much higher probability of successful completion of the projects within stipulated time and cost frame.

Course Objective

This course is designed to give exposure to project management tools and techniques applicable for planning, controlling & monitoring of Smart Infrastructure and Cities. This course would also enable to develop insight for managing project risks, uncertainties and complexities of smart cities project.

Course Modules

Module 1

- Introduction to Smart Cities
- Philosophy & Concepts of Project Management

Module 2

- Phases, Stages of Project & their Approval Status
- Work Breakdown Structure

Module 3

- Project Organization Structure
- Planning, Scheduling & CPM

Module 4

- The PERT Model

Module 5

- Project Cost Analysis
- Updating a Project

Module 6

- Resource Allocation & Levelling
- Line of Balance Technique

Module 7

- Project Monitoring & Control
- Project Risk Management

Module 8

- Case Studies on PM of Smart Cities

Prospective Participants

- B.E / B. Tech (Any Branch),
- B. Arc. (Bachelor of Architecture)
- B.Sc., B.Com. B.A.
- MBA (Any Stream)
- Diploma in any Discipline with 5 years of working experience.

E-Course Name: Application of Solar Energy for Smart Cities

Course Code: GSSCDE503

Course Summary

It is estimated that by the year 2050, the number of people living in Indian cities will touch 843 million. To accommodate this massive urbanization, India needs to find smarter ways to manage complexities, reduce expenses, increase efficiency and improve the quality of life. Hence the Govt. of India planned to introduce 100 smart cities in the country. A smart city, by definition, will have smart communication network for efficient utilization as well as ultrafast response to the demand and supply management. Out of many important aspects, the smart city is projected to have green energy for smarter solution of environmental issues. India needs to add at least 250-400 GW of new power generation capacity by 2030. In order to keep a balance of the environment, the Ministry of New and Renewable Energy has plans to add capacity of 30,000 MW in the 12th Five Year Plan (2012-17). Two major contributors to the renewable energy are solar energy and Wind energy. The majority of solar energy generation is meeting today by the solar photovoltaic and solar thermal technologies. In the projected course, the incumbent will be trained on the solar photovoltaic and solar thermal technologies applicable for smart city development. The e-course will focus on the technology, policies and their impact on the ambitious 100 smart city programs.

Prospective Participants

Active professionals like engineers working in govt. sectors who are dealing with energy issues directly or indirectly, aspirant students who wants to make carrier in the green energy generation, utilization and related development of infrastructure can be highly benefited from the e-course '**Application of Solar Energy for Smart City Development**'

Course Modules

Module 1

- Conventional vs. Smart, City components, Energy demand, Green approach to meet Energy demand, Index of Indian cities towards smartness – a statistical analysis.

Module 2

- Energy scenarios of conventional cities, Consequences, Alternative resources, Reliability on predictability scale, Solar options, PV and thermal; Singular or hybrid.

Module 3

- Meeting energy demand through direct and indirect solar resources, Efficiency of indirect solar resources and its utility, Capacity limit for the indirect solar resources, Effectiveness in responsive environment in smart city; Smart communication using green resources.

Module 4

- Process heating and cooling; Solar cooler and its capacity limit, Various solar concentration methods and their utility on smart perspective, Process heating and cooling for BOS of smart city.

Module 5

- Introduction to PV technology, PV of various scale for smart city applications, Energy efficiency, Policies of Solar PV in smart domains (RPO, REC, Carbon credit, etc.)

Module 6

- Definition, Structure of Smart Grid, Indian Perspective, Advantage & limitation, Volume of Capital flow, Evaluation/integration of large volume Renewable in Smart grid

Module 7

- Structural concept, Specific applications, Perspective in Smart Cities, Conceptual Application in process control and stabilization

Module 8

- Drive green in Smart city, FEV, HEV, Application of Solar in mobility, Matching demand and supply of energy in typical Smart city through Green mobility

E-Course Name: Green Buildings in Smart Cities

E-Course ID: GSSCDE504

Course Summary

Smart Mardsan city has gone “Always clean, always green” The city has been remodelled, improved and made sustainable. Let’s learn how we can make India Clean and Green!

Smart cities should have green and energy efficient buildings which have potentials of bringing economic changes and raising the efficiency both ecological and economic efficiency while ensuring that the cost of natural resources exploitation is within the acceptable range.

The basic philosophy for the proposed Course on “Green Buildings” is to meet the challenge of ensuring excellence in the most critical part of Smart Cities – green buildings and energy conservation system in buildings. The major emphasis is designing the course on the principle of outcome based education. The students will at the end of the programme be able to:

- Understand basic principles and concept of green as well as energy efficient buildings as a part of Smart, sustainable development
- Learning energy conservation building code (ECBC) 2007
- Optimizing/designing the green building system and use of sustainable materials & M and Energy audit of green building.
- Rating the green building systems

Prospective Participants

This course is useful for those who are interested to provide green solutions, who wish to learn how to make sustainable/good practices and who aspires to be green building raters to evaluate the green building systems.

The ideal participants could be Environmental Engineers, Civil Engineers & Architects, Town planners, Mechanical and Electrical Engineers having attitude to learn and aptitude to be a nation builder by contributing in smart Cities Development

Course Modules

Module 1

- Sustainability

Module 2

- Green Buildings

Module 3

- Rating System of Green Building

Module 4

- Energy Efficient Building - I

Module 5

- Energy Efficient Building - II

Module 6

- Energy Saving System in Buildings - I

Module 7

- Energy Saving System in Buildings - I

Module 8

- Wrap Up of All Modules

- Introduction, concept and philosophy
- Concepts, elements, benefits, important aspects of resource conservation and efficient utilization of resources, pervious concrete for parking lots
- GRIHA, LEED and IGBC rating system
- Energy conservation concept in building, heating in cold regions and cooling in hot climatic conditions, use of solar energy for heating, internal sources of heat and heat storage system, cooling concept – orientation of building, shading and ventilation
- Energy in building construction, energy saving potential in India, parameters, ECBC requirements and compliances
- Thermal insulation and energy savings, building insulation practices, windows and energy savings, building form and lighting systems, energy audit in buildings

E-Course Name: Solid Waste Management in Smart Cities

E-Course ID: GSSCDE505

Course Summary

Solid Waste Management is a basic un-piped infrastructure service for our cities. It's the most difficult of all infrastructural services as it concerns all citizens who are either problem creators or problem solvers, mostly the problem creators! The effective solid waste management is therefore a question of their collective mindset. Our cityscapes wore a dirty look with unabated 24x7 littering and/or dumping on every nook and corner of our roads and the open plots, common plots and the water bodies. Municipal Solid Waste Management Rules 2000 didn't change the scene till introduction of the flagship program of Swachchh Bharat Mission (SBM), Government of India in the year 2014. Amendments in MSW rules came into force in 2016. Since then the urban scenario is changing and changing rapidly.

The course is comprised of both pure managerial aspects as well the technical aspects of the solid waste management. It deals with IEC activities considering all the citizens as human resources. It also dealt with segregation of solid waste at the source of generation, collection methodology with special emphasis on decentralized treatment with involvement of the citizens. It also deals with technical aspect of fleet of vehicles for solid waste transport, route planning, the Garbage Transfer Stations and Solid Waste Processing facilities and at the last, the scientific landfill of the minimized waste. It's a course with equal emphasis on Engineering and the Human Engineering aspects of solid waste management. Cleanliness is the fundamental need for Smart Cities of India and the course cover all technical as well as managerial aspects of effective solid waste management.

Prospective Participants

Civil Engineers, Environmental Engineers, Urban managers, Sanitary Inspectors, Government employees as well as Employees of Private Organization, Estate Managers, Transport Mangers, NGOs working in the field of Sanitation and poverty alleviation, Consultants and Students

Any responsible and devoted citizen who wants to contribute towards cleanliness of the urban space.

Course Modules

Module 1

- Introduction to an effective urban Solid Waste Management (SWM) with 3Rs (Reduce, Reuse and Recycle) as basic premise"

Module 2

- Role of various stakeholders and their contribution towards SWM of a city

Module 3

- Collection Methodology of segregated waste from individual household and also from Bulk Generators with an option of decentralized treatment

Module 4

- Approach to special category of Solid Waste i.e. E-Waste, Building & Debris Waste, Medical Waste, Food Waste, Garden Waste etc

Module 5

- Route Planning, Equipments and Special vehicles of Primary SW Transport

Module 6

- Secondary Transport and subsequent various waste processing techniques

Module 7

- Scientific Landfill and reclamation of existing dump yard

Module 8

- Critical examinations of SBM endeavor with special emphasis on clean city rankings along with case study on solid waste management

Course Objective

We are going to gift a clean India to Mahatma Gandhi, the father of our nation on his 150th birth anniversary on 2nd October 2019 and course content is specially designed to cater the need to accomplish the mission.

To create qualified resource persons for the towns and the cities who can take over the role of the mission contributors or as a champion to its cause.

To prepare the qualified resource persons for the upcoming specialization in solid waste management practices after the mission period of SBM i.e. after 2019.

E-Course Name: Smart Transportation in Smart Cities

E-Course ID: GSSCDE506

Course Summary

The course is designed to provide awareness for implementation of transport with the concept of smart city. The smart transport infuse intelligence into our entire transportation system – streets, bridges, intersections, ports, rail, signs, signals and Information Technology – which can all be interconnected and made smarter. The word smart is using cameras, fibre optics and analytics to gather, analyse and share information across our transportation systems. Making real time adjustments to traffic lights to ease congestion, Electronic tolls with flexible tolling options, predicting what will happen to traffic congestion during new construction and better planning roads and public transport in that area.

This course will provide active safety capabilities that sense and respond to driver behaviour and road conditions. This also serves ability sending information captured from breaking patterns – for example, from vehicles approaching a recent accident – to other vehicles. This course will introduce common standards, so all vehicles can communicate with each other and integrate with road sensors. The Hybrids and battery technology leading to sustainable vehicles will give a better approach to reach the objective of this course.

Course Objective

The course is designed to provide a broad introduction to smart transport system so that participants can understand how, why, and where they are deployed, and how such systems could be deployed in different ways to tackle a particular problem of smart transport for the smart City.

To educate participants on various tools and methods which are used to do analysis and estimation of various parameters and vulnerabilities of different automated system.

The philosophy of why technology has been developed to support the management and control of the transport sector and how the systems and services have an influence on transport policy development.

Course Modules

Module 1

- Introduction of “Smart Transport” for “Smart City”

Module 2

- Smart Automobile and Sustainable fuels

Module 3

- Smart infrastructure

Module 4

- Intelligent Transport systems(ITS), GIS, Positioning, Navigation and Identification Systems.

Module 5

- Electronic fee payment technology (E ticketing)

Module 6

- Traffic Engineering and Control (Traffic Safety Management)

Module 7

- Human and Environmental Impacts, Safety and Sustainability

Module 8

- Case Study: BRTS or SMART PARKING with economics & costing

Module 9

- Mobility Services

Prospective Participants

- Information and Communication Technology
- Urban and Environmental Planners
- Architects/Civil Engineers
- Professionals in NGOs and Humanitarian Sector
- Consultants and Entrepreneurs
- Researchers and Academicians
- Business Management, Commerce, Science, Sociology
- Students of Social work, Planning and Public Administration

E-Course Name: Safety, Security and Disaster Management for Smart Citizen

E-Course ID: GSSCDE507

Course Summary

With growing population, unabated development works, increase in number of large cities and stresses on natural resources, the adverse impact of natural and human induced hazards on communities is increasing manifold. In last two decades, the impact of natural and human induced hazards has severely impacted urban population (Bhuj Earthquake 2001, Surat floods 2006, Mumbai Floods 2008, Mumbai 26/11, Ahmedabad deluge 2008, Jaipur Fire 2014, Srinagar floods 2014, Chennai floods 2015 etc. India's top 10 cities have \$179.8 billion (Rs. 11.9 lakh crore) at risk, according to Lloyd's City Risk Index 2015-2025. Catastrophe's caused by natural events, such as extreme weather, pandemics and plant epidemics account for just over half (\$ 98.1 billion) of GDP at risk followed by terrorism, market crash etc. Moreover, Climate change have impacted both the frequency and intensity of natural hazards which have resulted in more disastrous events over last few decades.

In this context is it very important to address the issue of natural and human induced disasters for sustainable and safe urban development. New initiative of developing Smart Cities cannot be excluded from these risks and vulnerabilities and thus Disaster Management in Smart Cities is critically important aspect directly affecting well-being, safety and security of citizens.

Prospective Participants

The course aims to offer academic, career and knowledge enhancement prospects to students, researchers and practitioners from Government organization, NGOs, Academic and research institutions as well as open to entrepreneurs and consultants. The course shall be useful to

- Urban Planners
- Architects/Civil Engineers
- Environmental Planner
- Disaster Management Professionals
- Professionals in NGOs & Humanitarian Sector
- Consultants and Entrepreneurs
- Researchers and Academicians

Course Modules

Module 1

- Safety, Security and Disaster Management for Smart Citizen

Module 2

- Disaster Risk Reduction(DRR) Overview

Module 3

- Smart Cities and Disaster Management

Module 4

- DRR Framework for Smart Cities

Module 5

- Thematic Analysis
- A Case study on Plan of action in case of terrorist explosion.

Module 6

- Resilience Strategy for Smart Cities

Module 7

- Stakeholder Capacity Building

Module 8

- Self Assessment at project and city level

Course Objective

To provide overview on sound disaster risk management practices for preparing towards "Safe Cities"

To educate and sensitise students, government officers, planners, policy makers, academician, researchers and others on process of disaster management in smart cities.

To educate participants on various tools and methods that can be adopted for hazard identification, vulnerability analysis and disaster risk reduction measures.

To stimulate thought process to address hazard risks and vulnerabilities of distinct groups within the city to make more resilient communities

To stimulate process of critically analysing risks to various urban sectors like Health, Transport, Communication, Housing, Services, Infrastructure etc to come up with strategy to reduce risks Researchers and Academicians.

E-Course Name: Planning and Development of Smart Villages

E-Course ID: GSSCDE508

Course Summary

Smart Villages is a recent initiative by different public as well as private agencies primarily aimed to harness the benefits of information technology for the rural population. The initiative can be an individual effort or community attempt to mobilize the collective strengths of people from various streams and integrate it with information technology to provide benefits to the rural community. It is based on the principle of access to everybody for all basic citizen services in the village itself. Village Level services like clean metalled roads; proper inter and intra village connectivity; dust free lanes & streets; hygienic and clean water supply and access to all.

Course Objective

The basic objectives of this course is to give exposure to rural situation and concerns for rural development by using modern technology tools and techniques applicable for designing, planning, Implementation and monitoring of Smart Infrastructure and Villages.

Understanding the concepts, discourses and practices of “Rural Planning and Smart village” and recent experiences

Relevance of smart village in the context of rural development in the background of social and cultural issues of development

Developing appropriate strategy for future planning and execution of Smart Village concept in India and other South Asian countries.

Course Modules

Module 1

- Introduction To Rural Planning and Development

Module 2

- Understanding Concept of Smart Village

Module 3

- Issues of Smart Village

Module 4

- International Experiences

Module 5

- Smart Village Performance Benchmark

Module 6

- Smart Village Policy and Mission

Module 7

- Planning and Management of Smart Village
- A Case study of smart Village "PUNSARI" along with economics

Module 8

- Financing Smart Village

Prospective Participants

The course shall offer a good academic, research information and understanding of development dynamics for rural areas.

This will help career prospects for the participants from various fields including students, working professionals.

The participants coming from the academic or professional backgrounds from Urban and Rural Planning, Architecture, Civil Engineering, Information and Communication Technology, Business Management and Commerce, Science, Sociology, Economics and other relevant area are likely to get maximum advantage from this course.

E-Course Name: Smart E-Governance

E-Course ID: GSSCDE509

Course Summary

The Government of India launched the Smart City Mission in June 2015 with an objective to streamline urbanization in the country and create 100 Smart Cities over the next five years. This mission aims to promote cities that provide core infrastructure and give a good quality of life to its citizens with a clean and sustainable environment.

For a good quality of life in a Smart City, it is imperative to have good Governance and a good Governance would essentially mean e-Governance with Smart Solutions. Governance refers to the exercise of political, economic and administrative authority in the management of a country's affairs, including citizens' articulation of interests and exercise of their legal rights and obligations.

E-Governance may be understood as the performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities.

Course Objective

Develop full understanding of the evolution of e-governance from its initial stages and the changing contours with modern technologies.

Understanding stakeholders' Requirements and change management methodologies for successful implementation.

Learn from the challenges and limitations faced in e-governance projects in Citizen Services delivery, industries and commerce and intra-government systems for efficiency and transparency.

Develop ability to conceptualise, design, implement and manage the new era smart e-governance projects.

Course Modules

Module 1

- Introduction to Smart E Governance

Module 2

- Smart E-Governance for Citizen Services

Module 3

- Smart E-Governance for Industries & Commerce

Module 4

- Smart E-Governance within Government

Module 5

- Emerging Trends in Smart E-Governance

Module 6

- Envisioning Future Smart E-Governance

Module 7

- Implementation Models for E-Governance

Module 8

- Regulatory Guidelines and Standards for E-Governance

Prospective Participants

The Government & Municipal officials and others involved in design implementation and delivery of services to citizens.

Advisory, consultancy and project management service providers and

Officials and Professionals aspiring to take leadership roles in Government for conceptualizing, designing and implementing e-Governance projects.

Engineering and management Students aspiring to leverage to booming opportunity in smart governance space.

Graduate in any discipline with proficiency in English.



E-Course Name: Sustainable Water and Sanitation for Smart Cities

E-Course ID: GSSCDE510

Course Summary

The course covers the complete process of Planning, Engineering and Management of Urban Water and Sanitation.

In the initial three modules the course will be more focused on Planning and Integrated Management aspects of Urban Water & Sanitation.

In the later modules, the course will also give a brief introduction of water supply system and drainage system design.

Although a brief introduction to Water & Sanitation technologies will be covered in the course, the emphasis of this course is on planning and management processes in the sector.

We will also examine environmental and public health considerations in water supply and waste water planning, as well as strategies for serving low-income households.

Course Objective

An understanding of the urban water supply and sanitation systems and linkages with urban forms

How urban water supply & drainage services function and the technologies available

Water distribution and waste-water collection network systems

The physical, chemical, and biological processes involved in water and waste-water treatment.

Course Modules

Module 1

- Introduction to Water Supply and Sanitation

Module 2

- Introduction to Smart Cities

Module 3

- Integrated Urban Water Management

Module 4

- Water Supply Systems

Module 5

- Water Quality & Treatment options

Module 6

- Drainage Systems

Module 7

- Waste Water Treatment and Recycle

Module 8

- Recent Initiatives in Smart Water and Sanitation systems & Case Studies

Prospective Participants

The course shall offer a good academic and career enhancement prospects to the aspirants like Entrepreneurs, Employees of Private/Government sectors, Members of NGOs, Consultants or Students.

Though the course will be open of any graduate, aspirant having the academic or professional backgrounds from Architecture, Civil Engineering, Infrastructure, Technology, Environment, Ecology, Management and other relevant area are likely to get maximum advantage from this course.

E-Course Name: Sustainable Smart Funding for Smart Cities

E-Course ID: GSSCDE511

Course Summary

This course proposes to give insights into the genesis, process and whole cycle of financing of Infrastructure Project like Smart City.

Therefore, the course views the whole strata of Financing of sustainable smart city Projects from different perspectives and sourcing including Seed Capital from GOI, Debt finance, Public Issue IPO finance and joint ventures under PPP mode.

Course Objective

The fundamentals of large project financing.

Financial markets for smart city project finance such as syndicated bank loans, capital markets, private equity fund, multilateral institutions, joint ventures, public-private-partnership (PPP) etc.

Projects and their business risks.

Documentation used to structure individual large project financings.

Political risk, currency risk etc. and mitigation measures of such risks.

Prospective Participants

This is general management course open to all college graduate participants.

Proficiency in English desirable.

Basic know-how of computer and internet.

Course Modules

Module 1

- Defining Smart Cities
- Types of sources for sustainable smart city funding

Module 2

- GOI seed capital grant of Rs 500 crore to each smart city
- Leveraging this grant for funding from open sources.
- Business Risk Assessment.

Module 3

- Public Private Partnership PPP concept and Modes of Smart City funding—BOOT, BOT, BOO, DBFOT etc.

Module 4

- PPP Request for Qualification (RFQ) and Criteria as per Planning Commission guidelines. (Case Study)

Module 5

- PPP request for Proposal (RFP) alongwith Concession agreement terms and conditions as per Planning Commission Guidelines.
- Case Study

Module 6

- Debt funding, Consortium of financiers, Guarantees and mortgage.
- Joint venture .
- Municipal Bonds.
- Documentation of debt funding

Module 7

- Equity Funding through Initial Public Offer, Private equity funding and risk factors in IPO.
- Procedure of IPO funding

Module 8

- Other funding sources like Viability gap funding, special subsidy for the project, Merger and Acquisition , Long term Lease Financing etc.

Course Methodology

The online certificate E-courses on Smart Cities Development are conducted exclusively through electronic mode by **Gujarat Technological University**. The course consists of **6 credits** and is an online distance learning programme where the participants study, and complete their assessment through quizzes and assignment from their preferable location. The course will last for **6 Months**. The course has been designed to recreate a classroom learning environment via online learning where reading materials and tools are provided for each module.

Course Delivery (Digital)

- E-lecture sessions on dedicated GTU E-Learning Portal
- Review of Case studies
- Videos: Short talks and Case videos
- Participatory exploration
- Online Video conference for group discussions and debates (Compulsory).

Practical Information on How to Apply

Entry Requirements

1. Graduate in any discipline having minimum 50% marks from a recognized University or Diploma in any discipline with minimum 5 years of working experience.
2. Foreign Students having equivalent qualification as mentioned in point 1 above.

English language and IT Requirement

The medium of instruction is English. Applicants must have adequate knowledge of English to undertake the course. This includes reading of academic texts books, journal papers and white papers, discussing complex concepts with other course participants and writing essays, etc. Access to computer (Audio & Video) with a reliable internet connection is required.

E-Course Fees

- Students from India: INR. 15,000/- per participant per course
- Fees from overseas participants: USD 500/- (United States Dollar Five hundred only) per participant per course to be paid by

EITHER direct payment to State bank of India through swift code as under. **(for Foreign students only)**

Name of Accounts: Gujarat Technological University

Type of Account: Saving

Bank Name: State Bank of India

Account No. : 30867982511

Swift Code : SBININBB417

Branch: IIT Gandhinagar

IFSC Code: SBIN0011770

MICR Code.: 380002106

Course Assessment

The Students will be able to engage fully with the programme content and with their peers, via lectures, discussion boards, group work, online chat, question and answer sessions and through the provision of peer to peer feedback and assessment. The course will however require strong commitment from the participant and they are expected to devote approximately 8–10 hours per week for online and self-study work. The Assessment shall be done through the regular quizzes and assignment submission for the modules.

Successful Completion

There will be minimum one Individual Assignment for the assessment of the participants.

Completion Criteria: 35% will be the passing marks for all Quizzes and Assignment/s, separately and as well as for the entire course.

How to apply

Step 1: Fees Payment Details: Please refer fees payment instructions on following link before making the payment.

<https://goo.gl/aCr3Lj>

Students from India:

Course fee payment can be done online on SBI collect by clicking on the following link.

<https://www.onlinesbi.com/prelogin/institutiontypedisplay.htm>

Student from Oversees:

Use Account details for Payment.

Step 2: After paying the fees amount in step 1, applications must be submitted online via following link

<http://smartcities.gtu.ac.in/login/index.php>

Register yourself at the GTU-GSSCD website on the above link. Click on the **“Create New Account”** and follow the instructions. Additional inquiries can be addressed by email on **smartcities.graduateschool@gtu.edu.in**

Step 3: Send soft copy/scanned copy of following to **smartcities.graduateschool@gtu.edu.in** with the subject as “Registration for E-Course: (Your Username same as entered in the step 1 during application)”

1. Fees Payment Receipt
2. Highest Qualification Certificate
3. Recent Photograph
4. Photo ID Card

OR Bank Demand Draft in favour of Gujarat Technological University payable at Ahmedabad to be sent to our address by courier.

Certification




On Successful completion of the course/s, the participant/s will be entitled for Certificate of Accomplishment for the completed course from Gujarat Technological University, Ahmedabad, India.

Future prospect (Post Graduate Diploma in Smart Cities)

GTU-Graduate School of Smart Cities Development is planning to offer shortly one-year POST GRADUATE DIPLOMA IN SMART CITIES of 12 courses each of 6 credit and one course Project Thesis of 8 credit, total in 80 credits. The students who have completed any of these courses now or earlier will get credit towards fulfilment of requirement of POST GRADUATE DIPLOMA.

GTU E-Course Team

Management Team

	VICE CHANCELLOR Prof.(Dr) Navin Sheth Gujarat Technological University
	REGISTRAR Mr. Bipin J. Bhatt Gujarat Technological University
	Hony. Director (GSSCD) Prof. Rajnikant Patel Advisor (RCSC), GTU and Honorary Director, GSSCD, GTU

CO-ORDINATORS

Ms. Neha Gameti, M.E. Research Associate, (Chief Coordinator) Gujarat Technological University	Ms. Darshna Chauhan, MBA Officer on Special Duty Gujarat Technological University	Ms. Nidhi Patel, M.E.(ITSNS) Research Assistant Gujarat Technological University
---	--	---



THE BIG CONNECT...



Contact Us

Ms. Neha Gameti, Research Associate (Chief Coordinator),

Ms. Nidhi Patel, Research Assistant (Coordinator),

Graduate School of Smart Cities Development,

Gujarat Technological University,

Chandkheda, Ahmedabad-382424, Gujarat, India.

Contact no.: (+91) (79) 23267587

Fax. (+91) (79) 23267580

Email: smartcities.graduateschool@gtu.edu.in

Website: <http://smartcities.gtu.ac.in/>



Gujarat Technological University

