

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
OFFICE OF RESEARCH AND DEVELOPMENT

Datasheet prepared for QS World University Rankings 2010

A. Infrastructure:

This category gathers information on the physical infrastructure, facilities and environment of your institution.

1. Wireless network coverage:

What percentage of your campus has wireless network access (accessible to students)?

Ans:	100
Explanatory Statement	Academic area has 100% wi-fi facility available to all students, staff and faculty. Internet bandwidth is 1 Gbps. Direct access is available. All hostel rooms, residential area have internet access through broadband.

2. Sporting facility:

Number of sporting facilities either owned by the university or that students have regular access to (verified by operator).

For the purposes of this assessment, sporting facilities include:

- general recreation area(s)
- swimming pool(s)
- fitness gym(s)
- indoor sports courts – e.g. squash, badminton, basketball
- outdoor sports courts – e.g. tennis, netball, basketball
- outdoor sports pitches – e.g. baseball, football, cricket; athletics track
- stadium where a sports event can be held and which is partly or completely surrounded by a structure designed to allow a minimum of 1000 spectators to stand or sit and view the event.

Ans:	20
Explanatory Statement	The newly developed indoor sports complex has been recently inaugurated. There are 11 hostels (550 rooms each) have table tennis room; gymnasium, badminton, basket ball and volley ball grounds. We have facilities like foot ball grounds, cricket ground, swimming pool, fitness club, athletic track, squash, skating, tennis ground and stadium.

3. Library Acquisitions:

Number of new catalogue entries in the past annual reporting period.

- 1 Catalogue entries include books, journals and periodicals in either physical or electronic form.
- 2 The annual reporting period is the last complete academic, financial or calendar year.

Ans:	6688
Explanatory Statement	<p>It comprises of 3275 books, 1711 periodicals, 1523 international journals, 164 national journals and 15 international magazines.</p> <p>Our Library (http://library.iitk.ac.in/) has total 260232 books, 9 electronic databases. These acquisitions are about USD 20 million per year.</p>

4. Student Rooms with Internet Access:

Number of rooms in student accommodation/dormitories that have Internet access (either wired or wireless).

Ans:	6000
Explanatory Statement	<p>There are 11 hostels with (around) 550 rooms each. All rooms have broadband internet access. The academic area where all Departments and centers are located has wi-fi facility.</p>

5. On-campus Computers:

Number of computers on campus in computer labs and common areas available for student use.

Ans:	10000
Explanatory Statement	<p>These computers are available for students in the labs, departments, and in Computer Center. The Institute has already procured a high performance computing system worth USD 15 million (http://www.iitk.ac.in/dord/hpc_board_may28_full.pdf).</p> <p>The main HPC system is a Linux cluster with a master node, 3 management nodes and 256 compute nodes, 40 Gbps QDR infiniband interconnect and 100TB usable storage. Each node will have dual Nehalem quadcore processors.</p> <p>The HPC facility is expected to provide a major boost to our research in computational science and engineering. The Centre will help train new generation of scientists and engineers in advanced computing, develop sharable application software for parallel platforms and motivate young minds to take up challenging problems in computation.</p>

6. Student Accommodation:

Total number of rooms in university-owned student residences/dormitories available to students.

Ans:	6000
Explanatory Statement	There are 11 hostels (550 rooms each), 9 for boys and 2 for girls. In addition, there are 72 accommodations for married students in single bedroom apartments (SBRA). Additional rooms are available for project employees.

7. Student Societies:

Number of student administered organisations (e.g. international student society, music society, sports clubs, debating society, student union)

Ans:	32
Explanatory Statement	<p>There are several clubs for the students administered by the students for pursuing different interests like organizing and promotion of extracurricular activities in the field of science and technology, games, curricular events, and cinematic activities (http://students.iitk.ac.in/gymkhana/index.html).</p> <p>Those are Prayas (social services), Astronomy club, Business club, Robotics club, Programming club, Aeromodelling club, HAM club, Electronics club, Skating club, Adventure sports club, Gliding club, Dance club, Dramatics club, Fine Arts club, Music club, Quiz club, English Literary Society, Crescent club, Hindi Sahitya Sabha, Vivekanand Samiti, Gymkhana Lectures and Discussion club, Book club, Entrepreneurship cell, Taekwondo club, Chess club, Animation club, CD club, La' Montage club, Photography club, Regional Movies club, Students Television club, & SPIC MACAY Kanpur Chapter (Music).</p>

8. Medical Facilities:

Number of on campus medical centres with basic medical equipment and at least one doctor and one nurse providing medical assistance to students.

Ans:	1
Explanatory Statement	We have a primary health care facility (http://www.iitk.ac.in/hc/) equipped with pharmacy, clinical lab, ECG facility, radiology unit, and 30 bed indoor ward. We have a standing arrangement with over ten super-speciality hospitals in the city of Kanpur.

B. Faculty level staff:

This category summarises the faculty level human resources at your institution. For specific definitions of what is being sought please click through to each statistic.

1. Prolific Academic Experts:

Number of academic faculty members internationally recognised for work (e.g. Nobel Prizes, Fields Medals, Highly Cited, equivalent arts based awards).

Please use the messages function to supply a full breakdown of awards received and the names of the recipients.

Ans:

Full Time 344

Part Time: Nil

Headcount: 344

Full Time Equivalent: 344

Explanatory Statement:

The Institute has Wellcome trust (4), Bhatnagar (15), Fellowships of National academies (50), Humboldt (20), JSPS (12), Bessel (3) Fellows on the faculty. The faculty publishes widely in all international forums.

Awards received during 2009-10 are:

1. Dr. Anupam Pal, Department of Biological Sciences and Bioengineering was conferred the Young Investigator Award by Asian Neurogastroenterology and Motility Association, 2009.
2. Dr. Balaji Prakash, Department of Biological Sciences and Bioengineering has been awarded the DBT-National Bioscience Award for 2009.
3. Dr. Ashu Jain, Department of Civil Engineering has been awarded Endeavour Executive Award 2009 by the Ministry of Education, Australia.
4. Dr. Tarun Gupta, Department of Civil Engineering received the INAE Young Engineer Award (2009).
5. Dr. Tarun Gupta, Department of Civil Engineering received the INDO-US Frontiers of Science Symposium Joint Research Award (2009).
6. Prof. Rajiv Sinha, Department of Civil Engineering has received the best paper award from the Indian Society of Remote Sensing (2009).
7. Dr. S. N. Tripathi, Department of Civil Engineering has been given the NASI-Scopus Young Scientist 2009 Award instituted by the National Academy of Sciences India and Elsevier Pvt. Ltd. Asia-Pacific.
8. Prof. Ashutosh Sharma, Department of Chemical Engineering received the Homi J. Bhabha Award for Applied Sciences, University Grants Commission (UGC) and National Hari Om Ashram Trust Award for the year 2007 [received in 2010].
9. Dr. Y. M. Joshi, Department of Chemical Engineering received the Amar Dye Chem Award, Indian Institute of Chemical Engineers (IChE).

10. Dr. J. K. Singh, Department of Chemical Engineering received the Indian National Academy of Engineering (INAE) Young Engineer Award, 2009.
11. Prof. V. Chandrasekhar, Department of Chemistry has been elected to the Academy of the Developing World, FTWAS, Trieste, Italy.
12. Prof. J. N. Moorthy, Department of Chemistry received the bronze medal awarded by the Chemical Research Society of India (CRSI).
13. Dr. S. S. Manoharan, Department of Chemistry was conferred the Gold Medal of the DST - Lockheed Martin Innovation Growth Program for developing nanocoated coronary stent.
14. Prof. S. Verma, Department of Chemistry was conferred the CDRI Award for Excellence in Drug Research.
15. Prof. S. Verma, Department of Chemistry received the Rajib Goyal Young Scientist Prize in Chemistry.
16. Prof. Manindra Agrawal, Department of Computer Science and Engineering received the G D Birla Award for Scientific Research, Birla Foundation.
17. Prof. Manindra Agrawal, Department of Computer Science and Engineering received the P C Mahanobis Birth Centenary Award, Indian Science Congress.
18. Prof. Manindra Agrawal, Department of Computer Science and Engineering received the Rajib Goyal Prize, Kurukshetra University.
19. Dr. Surender Baswana, Department of Computer Science and Engineering received the Young Engineer Award for the year 2009 instituted by the Indian National Academy of Engineers for his contribution to the field of design and analysis of algorithms.
20. Dr. Adrish Banerjee, Department of Electrical Engineering received the Young Engineer Award, Institute of Engineers (IEI), India in the area of Electronics & Communications, 2009.
21. Dr. Adrish Banerjee, Department of Electrical Engineering received the Microsoft Research India Outstanding Young Faculty Award, 2009.
22. Dr. Jaleel Akhtar's Department of Electrical Engineering paper entitled Noninvasive Procedure for Measuring the Complex Permittivity of Resins, Catalysts, and Other Liquids Using a Partially Filled Rectangular Waveguide Structure (IEEE Transactions on Microwave Theory and Techniques) received the CST (<http://www.cst.com>) University Publication Award 2009.
23. Prof. Ashok K. Mittal, Department of Industrial Management and Engineering has been honored with Life Time Achievement Award 2010.
24. Prof. R. R. K. Sharma, Department of Industrial Management and Engineering has been judged the Outstanding Management Researcher, at AIMS-7 conference, at IIM Bangalore, India.
25. Prof. N. K. Sharma, Department of Industrial Management and Engineering and Manu Kanchan's paper Role of mentoring in enhancing self efficacy: The effect of some personality traits and learning goal orientation as antecedents has been judged the best paper at the Annual Global Conference on Entrepreneurship and Technology Innovation (AGCETI), 2010.
26. Prof. R. Balasubramaniam, Department of Materials and Metallurgical Engineering has been elected to receive the inaugural IIM Distinguished Educator Award 2009.
27. Dr. Kantesh Balani, Department of Materials and Metallurgical Engineering has been selected for the Young Scientists Award.
28. Dr. Kantesh Balani, Department of Materials and Metallurgical Engineering has been selected for Dr R L Thakur Memorial Award 2009.

29. Prof. Dipak Mazumdar, Department of Materials and Metallurgical Engineering has been selected to receive the G D Birla Gold Medal-2009.
30. Dr. Anish Upadhyaya, Department of Materials and Metallurgical Engineering has been selected for the 2009 Metallurgist of the Year Award.
31. Dr. Sameer Khandekar, Department of Mechanical Engineering has been awarded the Prof. K. N. Seetharamu Medal for Young Researchers by the Indian Society for Heat and Mass Transfer.
32. Dr. Shantanu Bhattacharya, Department of Mechanical Engineering has been chosen for the IEI Young Engineers Award 2009-10.
33. Dr. Shantanu Bhattacharya, Department of Mechanical Engineering was given the Certificate of Outstanding Leadership by Boeing Corporation for the year 2009.
34. Dr Sudeep Bhattacharjee, Department of Physics was conferred the Buti Foundation Award and the Endeavour Research Award of the Australian Government.
35. Dr. S. N. Tripathi, Department of Civil Engineering received the NASA Senior Fellowship, National Aeronautics and Space Administration, USA.
36. Prof. Deepak Kunzru, Department of Chemical Engineering has been elected Fellow, The National Academy of Sciences, India.
37. Prof. S. K. Gupta, Department of Chemical Engineering has been elected Fellow, Indian National Academy of Engineering, New Delhi.
38. Prof. P. K. Bharadwaj, Department of Chemistry received the J. C. Bose National Fellowship, DST, New Delhi, India.
39. Prof. J. N. Moorthy, Department of Chemistry has been elected Fellow of the Indian Academy of Sciences (FASc), Bangalore.
40. Prof. S. Verma, Department of Chemistry has been elected Fellow of National Academy of Sciences, India.
41. Prof. Y. D. Vankar, Department of Chemistry has been elected Fellow, Indian National Science Academy, New Delhi, 2009.
42. Dr. Braj Bhushan, Department of Humanities and Social Sciences received the Common Future Fellowship (2010), Volkswagen Stiftung, Germany.

C. Internationalisation:

All QS assessments and evaluations embrace internationalisation as a key component.

1. Religious Facilities:

Number of places of worship available on-campus for each major global religious group, including Christianity, Islam, Hinduism, Buddhism, Sikhism and Judaism.

Multi-denominational facilities are acceptable. The term 'place of worship' refers to a building or other location where members of a religious group can perform acts of religious praise, honour, or devotion.

Ans:	3
Explanatory Statement	There are 2 Temples and 1 Gurudwara in the campus. Christians and Muslims prayers are held once a week in a common prayer area.

2. Outbound Exchange Agreements:

Number of outbound exchange student study agreements with international universities in the global top 500. Please supply a list of partner institutions in the Messages box

Ans:	39
Explanatory Statement	<p>The Institute has entered into several MoUs with world class universities. The objectives of these MoUs consist in promoting, strengthening, maintaining scientific and academic co-operation, exchange of faculty, students, and staff.</p> <p>The Institute has MoUs for exchange of students with the California Institute of Technology (Caltech), USA; National University of Singapore, Singapore; University of Nanyang Technological University, Singapore (NTUS); Ecole Polytechnique, France; Ecole Pour L'Informatique Et Les Techniques Avancees (EPITA), France; L'Ecole Nationale Superieure D'Arts et Metiers (ENSAM), France; L'Ecole Centrale Paris, France; Deakin University, Victoria, Australia; Univ. of Molise, Italy; University of Tokyo, Japan; ISCTE-Lisbon University Institute, Portugal; Univ. of Castilla La Mancha, Spain; University of Kansas, USA; University of McMaster, Canada, Canada; KEIO University, Japan; Ritsumeikan University and Ritsumeikan Asia Pacific University, Japan; Dan Kook University, Korea; University of Ulster, UK; University of Waterloo, Canada; The University of Texas at Austin, USA; University of Toronto, Canada; The Eindhoven University of Technology Netherlands; Old Dominion University, USA; Addis Ababa University, Ethiopia; Technion-Israel Institute of Technology, Haifa, Israel; Universite Paris- Est Marne-La-Vallee, France; Sungkyunkwan University, Korea; Ulsan National Institute of Science and Technology (UNIST), Korea; Yeungnam University, Korea; The University of New South Wales, Australia; Waseda University, Japan; Rice University, USA; Ecole Des Mines, France; Mazardaran University of Science & Technology, Iran; University of Texas At San Antonio (UTSA), Texas, USA; INDO-SWISS Academic Alliance – ISAA; University of Miyazaki, Japan; UNIVERSITI SAINS MALAYSIA; University of Applied Sciences Darmstadt, Germany.</p>

3. Inbound Exchange Agreements:

Number of inbound exchange student study agreements with international universities in the global top 500.

Ans:	39
Explanatory Statement	<p>The Institute has entered into several MoUs with world class universities. The objectives of these MoUs consist in promoting, strengthening, maintaining scientific and academic co-operation, exchange of faculty, students, and staff.</p> <p>The Institute has MoUs for exchange of students with the California Institute of Technology (Caltech), USA; National University of Singapore, Singapore; University of Nanyang Technological University, Singapore (NTUS); Ecole Polytechnique, France; Ecole Pour L'Informatique Et Les Techniques Avancees (EPITA), France; L'Ecole Nationale Superieure D'Arts et Metiers (ENSAM), France; L'Ecole Centrale Paris, France; Deakin University, Victoria, Australia; Univ. of Molise, Italy; the University of Tokyo, Japan; ISCTE-Lisbon University Institute, Portugal; Univ. of Castilla La Mancha, Spain; University of Kansas, USA; University of McMaster, Canada, Canada; KEIO University, Japan; Ritsumeikan University and Ritsumeikan Asia Pacific University, Japan; Dan Kook University, Korea; University of Ulster, UK; University of Waterloo, Canada; The University of Texas at Austin, USA; University of Toronto, Canada; The Eindhoven University of Technology Netherlands; Old Dominion University, USA; Addis Ababa University, Ethiopia; Technion-Israel Institute of Technology, Haifa, Israel; Universite Paris- Est Marne-La-Vallee, France; Sungkyunkwan University, Korea; Ulsan National Institute of Science and Technology (UNIST), Korea; Yeungnam University, Korea; The University of New South Wales, Australia; Waseda University, Japan; Rice University, USA; Ecole Des Mines, France; Mazardaran University of Science & Technology, Iran; The University of Texas At San Antonio (UTSA), Texas, USA; INDO-SWISS Academic Alliance – ISAA; University of Miyazaki, Japan; UNIVERSITI SAINS MALAYSIA; The University of Kansas, USA; The University of Applied Sciences Darmstadt, Germany.</p>

D. Third Mission:

("Third Mission" refers to all activities concerned with the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments (Molas-Gallart, Salter, Patel et al. 2002))

1. Needs-based Scholarships and Bursaries

Number of full scholarships awarded on a needs basis in the past annual reporting period.

Ans:	792
Explanatory Statement	<p>Institute awards Merit-cum-Means scholarship of the value of INR 1000 per month with tuition fee waiver per semester to student (whose parent's income does not exceed USD 50,000 per annum). This scholarship is up to 25% of the total strength enrolled in each of the undergraduate batches. The Institute awarded 464 scholarships in the last year.</p> <p>Disadvantaged students not in receipt of scholarships from any other source are eligible for the Free Basic Mess (scholarships). The Institute awarded 218 scholarships in the last year.</p> <p>In addition, several students of the B. Tech. /M. Sc. (Integrated) and M. Sc. (2-year) programmes receive financial assistance through scholarships, stipends and grants from Central and State Governments, Directorate of Education and other organizations. The Institute gave 110 scholarships in the last year.</p>

E. Innovation and Knowledge transfer:

1. Industrial Research Projects:

Number of joint research projects with distinct corporations (non-university) yielding publications in Scopus in the last 5 years.

Ans:	1164										
Explanatory Statement	<p>Number of sponsored (pure research) and consultancy projects during last 5 years are</p> <table><tr><td>2009-10: 233</td><td>USD 192 million</td></tr><tr><td>2008-09: 262</td><td>USD 189 million</td></tr><tr><td>2007-08: 220</td><td>USD 121 million</td></tr><tr><td>2006-07: 234</td><td>USD 178 million</td></tr><tr><td>2005-06: 215</td><td>USD 150 million</td></tr></table>	2009-10: 233	USD 192 million	2008-09: 262	USD 189 million	2007-08: 220	USD 121 million	2006-07: 234	USD 178 million	2005-06: 215	USD 150 million
2009-10: 233	USD 192 million										
2008-09: 262	USD 189 million										
2007-08: 220	USD 121 million										
2006-07: 234	USD 178 million										
2005-06: 215	USD 150 million										

2. Spin-off Companies:

Number of spin-off companies established in the last 5 years still operating and no longer requiring support from the university. Please provide details and links in the messages box.

Ans:	9
Explanatory Statement	<p>IIT Kanpur has set up the SIDBI Innovation & Incubation Centre (SIIC) (http://www.iitk.ac.in/siic/incubatee.html) in collaboration with Small Industries development Bank of India (SIDBI) to foster innovation, research, and entrepreneurial activities in technology-based areas. SIIC provides a platform to Start-ups prospective entrepreneurs and intrapreneurs to convert their innovative ideas into commercially viable products.</p> <p>There are 15 companies presently being incubated (http://www.iitk.ac.in/siic/incubatee.html).</p> <p>The graduated companies are:</p> <ol style="list-style-type: none">1. Whirlybird Electronics Pvt. Ltd. (WEPL): http://www.wbe.in2. Adya Systems Pvt Ltd. (ASSPL): http://www.adyasystems.com/3. Zion Technology Labs Pvt. Ltd. (ZTLPL): http://www.zion-labs.com/4. Handshake Infotech Pvt. Ltd. (HIPL)5. Messiah Labs6. Aurora Integrated Systems Pvt. Ltd. (AIS): http://www.aurora-is.com7. Multifacet Softwares Systems Pvt. Ltd. (MSSPL): http://www.ms2pl.com/8. Whorl Engineering Solutions Private Limited (WESPL): http://www.whorlengineering.com/9. EI Devices Software Solutions Pvt. Ltd.

3. Patents:

Number of current patents registered with national and/or international patent offices.

Ans:	50
Explanatory Statement	The Institute has filed 40 national and 10 international patents.

F. Research Productivity and Quality:

Data submitted in this section are for corroboration only. QSIU gathers these data once annually from Scopus – the largest abstract and citation database of peer-reviewed literature.

1. Number of Citations:

Total number of citations in the past 5 years for papers published in the past 5 years. Publications and citations are counted from the five years leading up to December 31 in the last completed calendar year.

Ans:	15094
Explanatory Statement	Here we have included only journal papers. Self-citations are avoided. The citation varies widely from one paper to another. A few papers (less than ten) have a citation of over 300 each. Quite a few (around 500 papers) are cited 8-10 times. A vast number is in the range of 3-5.

2. Number of Papers:

Total number of papers published in the past 5 years.

Publications and citations are counted from the five years leading up to December 31 in the last completed calendar year.

Ans:	
Explanatory Statement	Papers published in the last 5 years are 2009-10: Journal 818, Conference 350 2008-09: Journal 686, Conference 317 2007-08: Journal 723, Conference 332 2006-07: Journal 882, Conference 316 2005-06: Journal 606, Conference 376

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Date: 22nd June 2010