

faculty of architecture landscape and design university of toronto

LAN 3045H Urban Site Technologies 2

Monday, 11:00am - 1:00pm PCL Seminar Room

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Office Hours: Mondays 1-3pm



Carleton Farms Landfill, Cell 237 Sub-Base Construction, Sumpter Township, 2007.

COURSE DESCRIPTION

This course focuses on contemporary technologies of construction and reclamation for urban sites. Through a series of field trips, readings, and projects, this course expands upon the first two Site Technologies courses of the MLA program to expand technical and technological literacy for large scale landscapes. The 2007 course specifically explores *bioengineering* and *bioremediation* as methods in constructing and reclaiming large, complex urban sites. The theme is explored with a series of field trips and exercises that will conclude with a final technology research project.

Urban Site Technologies 2 is third in a sequence of courses that examine the relationship between construction technologies and the design of urban landscapes. In the first course, *Site Engineering and Ecology* (LAN 1045H), students are introduced to foundational methods in landforming at the scale of the site while the second course, *Urban Site Technologies 1* (LAN 2042H), introduces more advanced issues in the design of urban landscapes at the scale of the watershed.

COURSE OBJECTIVES

Throughout the duration of the course, students will be provided the opportunity to develop knowledge of emerging technologies for complex urban sites. With a specific focus on technologies of bioengineering and bioremediation, the course will provide students with the information to:

1. Develop a working knowledge of site technologies for urban sites.
2. Increase awareness of new, innovative landscape technologies and methodologies.
3. Understand regulatory and economic aspects of site technologies for urban sites.

SCHEDULE

Week	Date	Lectures & Field Trips
1	Sep. 10	Course Introduction
2	Sep. 17	Site Preparation, Earthworks & Soil Remediation <i>Site: Portlands Energy Centre</i>
3	Sep. 24	Shoreline Engineering & Hydrological Management <i>Site: Don River Park or Port Union Harbour</i>
4	Oct. 1	Bio-Engineering, Vegetative Reproduction & Plant Propagation, <i>Site: Toronto Region Conservation Authority Nursery (Vaughan)</i>
5	Oct. 8	Thanksgiving – No Class
6	Oct. 15	Harbour Remediation & Dredge Management <i>Site: Harbour Remediation & Transfer Facility (Portlands)</i> www.hrandt.com <i>Term Project – Assignment 1 Due</i>
7	Oct. 22	Wastewater Processing, Sludge Treatment & Bio-Solids Sludge Management <i>Site: Ashbridges Bay Park & Waste Water Treatment Facility</i> www.toronto.ca/water/protecting_quality/biosolids/index.htm
8	Oct. 29	Landfilling, Recycling & Waste Management Systems <i>Site: Peel Region Integrated Waste Management Facility</i> www.region.peel.on.ca/pw/waste/facilities/piwmf.htm <i>Term Project – Assignment 2 Due</i>
9	Nov. 5	Fluid Management Systems & Soil Remediation Technologies <i>Site: Lester B. Pearson International Airport</i> www.gtaa.com/local/files/en/Corporate/Publications/MasterPlan/MP-Chapter12.pdf

10	Nov. 12	<i>Contemporary Site Technologies</i> – Research Project (Student Presentations) <i>Term Project – Assignment 3 Due (A)</i>
11	Nov. 19	<i>Contemporary Site Technologies</i> – Research Project (Student Presentations) <i>Term Project – Assignment 3 Due (A)</i>
12	Nov. 26	Encapsulation & Disposal Technologies <i>Site: Green Lane Landfill, London</i> www.greenlanegroup.com
13	Dec. 3	Digital Earthmoving Technologies <i>Lab: LandCad</i> <i>Site: to be determined</i>

Guest Speakers

During the semester, special guest lectures* will potentially be scheduled with notable experts, leading scientists and innovative site managers in the fields of site engineering and site remediation including:

David Beamer, Coordinator, Science & Research
 Management of Abandoned Aggregate Quarries Program
 Ontario Aggregate Resources Corporation, Burlington
www.toarc.com/maap/Information/overview.htm

Margarete Kalin, President & Senior Ecologist
 Boojum Research Ltd, Toronto
www.boojumresearch.com

Hon Q. Lu, Manager, Urban Environmental Services
 TEDCO – Toronto Economic Development Corporation
www.tedco.ca

Craig Wardlaw, Senior Environmental Specialist, Site Remediation
 Technologies, National Research Council, Canada
http://www.ec.gc.ca/etad/csmwg/pub/site_mem/en/xb_e.htm

*Special times and schedules for these guest lectures will be provided within two to three weeks notice.

READINGS

Week	Topic
1	Urban Sites Dines & Brown. “Disturbed Landscapes” in <i>Time-Saver Standards for Landscape Architecture</i> (Washington, DC: McGraw Hill Text, 1997): pp.640-2 to 640-19. Eyles Nicholas. “Environmental Geology of Urban Areas” in <i>Environmental Geology of Urban Areas</i> . Newfoundland: Geological Association of Canada, 1997: pp.1-6.

2	<p>Bioengineering Technologies I</p> <p>Schiechtl, Hugo M. "Ground Bio-Engineering Systems" & "Ground Bioengineering Techniques for the Protection & Stabilization of Earthworks" in <i>Ground Bioengineering Techniques for Slope Protection and Erosion Control - Handbuch für naturnahen Erdbau</i> (London: Blackwell Science, 1996): pp.5-111.</p> <p>Polster, David F. "Soil Bioengineering Techniques for Riparian Construction" in <i>Proceedings of the 20th Annual British Columbia Mine Reclamation Symposium</i> (Dawson Creek, BC: 2001).</p>
3	<p>Bioengineering Technologies II</p> <p>Coppin, N. J. "Bioengineering Applications – Theory & Practice" in <i>Use of Vegetation in Civil Engineering</i> (London: Butterworths, 1990): pp. 163-258.</p> <p>Alberts, W. "Civil engineering & the care for nature" and J. van der Sluijs "Green elements of civil engineering works and their potential ecological importance" in Ministry of Transport, Public Works & Water Management, <i>Nature Engineering and Civil Engineering Works</i> (Wageningen: Centre for Agricultural Publishing & Documentation, 1991): pp.8-32.</p>
4	<p>Hydrological Technologies I</p> <p>Berezowsky, Miron. "Constructed Wetlands for Remediation of Urban Waste Waters" in Nicholas Eyles (ed.) <i>Environmental Geology of Urban Areas</i>. Newfoundland: Geological Association of Canada, 1997: pp.203-214.</p> <p>Kalin, Margarete. "Biogeochemical and Ecological Considerations in Designing Wetland Treatment Systems in Post-Mining Landscapes in <i>Waste Management</i> No. 21 (2001): pp. 191-196.</p>
5	<p>Hydrological Technologies II</p> <p>Dines & Brown. "Stormwater Management: Flow Control Techniques & Filtration Techniques" in <i>Time-Saver Standards for Landscape Architecture</i> (Washington, DC: McGraw Hill Text, 1997): pp.330-40 to 330-49.</p> <p>Ministry of the Environment. "Stormwater Management Practices – Design Examples" in <i>Stormwater Management Planning and Design Manual 2003</i> http://www.ene.gov.on.ca/envision/gp/4329eindex.htm</p>

6	<p>Bioremediation Technologies I</p> <p>Scragg, Alan. "Bioremediation" in <i>Environmental Biotechnology</i> (Oxford: Oxford Press, 2005): pp.173-229.</p> <p>Cookson, John T. "Application of Biological Processes" in <i>Bioremediation Engineering: Design & Application</i> (New York: McGraw-Hill, 1995): pp.1-26.</p>
7	<p>Bioremediation Technologies II</p> <p>Lye, Alex, Ralph Ludwig & Craig Wardlaw (Water Technology International Corp.), <i>Site Remediation Technologies: A Reference Manual</i>, Contaminated Sites Management Working Group (Ottawa: Government of Canada Publications, 1997).</p> <p>Singh, Ajay & Owen Ward. "Soil Bioremediation & Phytoremediation: An Overview" in <i>Applied Bioremediation and Phytoremediation</i> (New York: Springer, 2004): pp.1-12.</p>
8	<p>Economics of Bioremediation</p> <p>Cookson, John T. "Site Characterization for Bioremediation Process" in <i>Bioremediation Engineering: Design & Application</i> (New York: McGraw-Hill, 1995): pp. 205-240.</p> <p>Raskin, Ilya. "Economic Potential of Phytoremediation" in <i>Phytoremediation of Toxic Metals: using plants to clean up the environment</i>. New York: Wiley, 2000).</p> <p>Singh, Ajay & Owen Ward. "Evaluation of Current Soil Bioremediation Technologies" in <i>Applied Bioremediation and Phytoremediation</i> (New York: Springer, 2004): pp.187-214.</p>
9	<p>Dredge Materials Management Technologies</p> <p>Coakley, John P. and Alena Murdocj. "Contaminated Sediment in Urban Great Lakes Waterfronts" in Nicholas Eyles (ed.). "Environmental Geology of Urban Areas" in <i>Environmental Geology of Urban Areas</i>. Newfoundland: Geological Association of Canada, 1997: pp.227-240.</p> <p>Francingues, N. R. and D. W. Thompson, (2000). "Innovative dredged sediment decontamination and treatment technologies," in <i>DOER Technical Notes Collection</i>, ERDC TN-DOER-T2 (Vicksburg, MS U.S. Army Engineer Research and Development Center, 2000) www.wes.army.mil/el/dots/doer</p>
10	<p><i>Contemporary Site Technologies</i> – Research Project (Student Presentations)</p>

11	<i>Contemporary Site Technologies</i> – Research Project (Student Presentations)
12	<p>Encapsulation & Disposal Technologies</p> <p>Caldwell & Reith. “Encapsulation: Engineering Perspectives” & “Perpetual Isolation: Ecological Perspectives” in <i>Principles & Practice of Waste Encapsulation</i> (Chelsea, MI: Lewis Publishers, 1993), 1-38 & 265-304.</p> <p>Eyles, Nicholas & Joseph I. Boyce. “Geology & Urban Waste Management in Southern Ontario” and Richard Anderson, “Waste Disposal in Toronto’s Past” in <i>Environmental Geology of Urban Areas</i> (Newfoundland: Geological Association of Canada, 1997): pp.297-330.</p> <p>Bélanger, Pierre. Airspace: The Ecologies and Economies of Landfilling in Michigan in <i>Trash</i> (Cambridge: MIT Press, 2006): pp.132-155.</p>
13	<p>Earthmoving Technologies</p> <p>Hudson, Kari. “Earth-moving equipment gets guidance from above” in <i>American City & County</i> (March 1996) http://americancityandcounty.com/mag/government_earthmoving_equipment_gets/</p> <p>Koski, Phillip Glenn. “Robo-Dozer: the fusion of global positioning system technology with heavy equipment sparks a revolution in construction site automation” in <i>Landscape Architecture Magazine</i> (July 2002): pp.50, 52-53.</p>

Unless otherwise noted, students are strictly required to wear CSA certified equipment for all site visits including hard hat, safety vest and steel-toe boots.

TERM PROJECT

The term project for this course involves research on advanced urban site technologies. Using a visual and descriptive format, the research project is aimed at developing a series of contemporary technologies related to methods of bioengineering and bioremediation that are introduced throughout the course.

There are three assignments associated with the project. The first assignment involves preliminary research of a designated topic yielding a description of the technologies and a bibliography of information sources. The second assignment involves the in-depth description and visualization of those site technologies to understand their applications and their effects. The third assignment involves the preparation of a visual presentation that will summarize the research. The term project will be evaluated on three criteria: depth of research, originality of information, and visual quality of maps and/or diagrams.

Topics

The following list provides a repertoire of site technologies that each group will choose from:

Bioengineering

Transplantation & Afforestation
Turfing, Mulching & Hydroseeding
Brush Matting & Brush Layering
Wattling & Live Fascines Hedgerows, Windbreaks & Plashes
Crib Walls & Gabions
Cover Cropping
Contour Plowing & Conservation Tilling
Strip Farming

Bioremediation

Bio-Piling & Land Farming
Vapor Extraction & Bio-venting
Bio-Slurping
Thermal Soil Destruction
Aquaremediation
Vitrification
Biodegradation & Biomineralisation
Anaerobic Digestion
Photodegradation

Phytoremediation

Phytoextraction & Hyperaccumulation
Phytostabilization
Phytovolatilization
Rhizofiltration
Mycoremediation

Schedule

Week 3 - Technology Description & Bibliography

The description must be between 150 and 300 words in length. The bibliographical research must include web sites, books and articles related to the assigned topic as well as copies of related maps, diagrams and images of the technologies (see sample for details)

Format: Two 8x11 sheets

Week 6 - Technology Applications

In-depth description of technology, its history (where applicable), its design, its applications and its effects. The description must also include one primary image or diagram, with a maximum of two secondary images.

Format: Four 8.5x11 sheets

Weeks 10 & 11 - Presentations

The term project concludes with a series of student-led presentations during the 10th and 11th classes. Using photographs and diagrams, the presentations of the project will include the general description of the technology, design aspects, its applications and its effects. Critical feedback will be provided as a means to improve and complete the mapping projects.

Format: Digital slide presentation, 15-20 minutes, maximum 10 slides.

Week 13 Final Hand-In

Format: Portfolio book (10-sleeve) and CD containing finalized descriptions, images and diagrams, and bibliography.

EVALUATION

Students are asked to actively participate in the content and delivery of the course through readings and in-class discussions. In addition to the weekly classes, evaluation for this course will be carried out on the basis of a term

project that will be developed in three parts. The breakdown for evaluation is as follows:

Term Project - Assignment 1 – Week 3: 25%
Term Project - Assignment 2 – Week 6: 25%
Term Project - Assignment 3 – Week 10: 30%
In-Class/Field Trip Participation: 20%

Specific objectives and details for the term project are provided above. The total mark for this course includes a 20% participation grade that is an indication of performance and growth in the class through participation, progress, initiative, and leadership.

Evaluation will be carried out in accordance with the Graduate Grading and Evaluation Practices Policy (and how that policy is interpreted and applied in this Faculty). The *University of Toronto, School of Graduate Studies, 2007 – 2008 Calendar*, pages 36 to 41 explains that policy in detail.

PLAGIARISM

University of Toronto code of Behaviour on Academic Matters states that "it shall be an offense for a student knowingly: to represent as one's own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e., to commit plagiarism."

"For accepted methods of standard documentation formats, including electronic citation of internet sources please see the U of T writing website at: <http://www.utoronto.ca/writing/document.html#elec> "

The full Code of Behaviour regulations could be found from consulting <http://www.sgs.utoronto.ca/current/calendar/regulations16.asp>

WRITING AND ENGLISH LANGUAGE

As well as the al&d writing support, please see English Language and writing support at University of Toronto: <http://www.sgs.utoronto.ca/english/> and <http://www.utoronto.ca/writing/advise.html>. Students have commented that they found the latter address extremely helpful for writing term papers.

The following are also useful:

Slyvan Barnett, *A Short Guide to Writing About Art*. 5-7th edition (New York: Harper-Collins, 1997)
William Strunk Jr., E.B. White. *The Elements of Style* (New York: MacMillan Publishing)

LATE WORK

All assignments are due in class at the specified time and date. Late work will be penalized 10 percentage points per day, for each day following the due date. In the case of illness or other special circumstance, notification should be given to the instructors and the Program Office as soon as possible and before the deadline in question.

Late work submitted after the final day of classes, December 7, 2007, is not acceptable without prior written permission from the Program Director.

FINAL DUE DATE

The final due date for the term project is December 3rd, 2007, at 11:00 am.

REFERENCES

On Site Design & Engineering

Baiche, Bousmaha & Nicholas Walliman (ed.). *Neufert Architect's Data 3rd Edition*. (London: Blackwell Publishing, 2003).

DeChiara, Joseph. *Time-Saver Standards for Site Planning*, New York: McGraw-Hill, 1984.

Dines & Brown. *Time-Saver Standards for Landscape Architecture* (Washington, DC: McGraw Hill Text, 1997).

Kirkwood, Niall. *The Art of Landscape Detail: Fundamentals, Practices & Case Studies* (London: John Wiley & Sons, 1999).

Kirkwood, Niall. *Weathering and Durability in Landscape Architecture: Fundamentals, Practices, and Case Studies* (New York: John Wiley and Sons, 2004).

Landphair, Harlow and John Motloch. *Site Reconnaissance & Engineering* (New York: Elsevier, 1985).

Lynch, Kevin & David Hack. *Site Planning*, Third Edition (Cambridge: MIT Press, 1984).

Nelischer, Maurice. *Handbook of Landscape Architectural Construction* (Washington, D.C.: Landscape Architecture Foundation, 1985).

Panero & Zelnik. *Human Dimension and Interior Space: A Source Book of Design Reference Standards* (Watson-Guptill Publications, 1989).

Ramsey & Sleeper. *Architectural Graphic Standards for Architects, Engineers, Decorators, Builders and Draftsmen* (London: John Wiley & Sons, 2001).

Strom, Steven & Kurt Nathan. *Site Engineering for Landscape Architects, Fourth Edition* (New York: Van Nostrand Reinhold, 2004).

Thompson, William J. and Kim Sorvig. *Sustainable Landscape Construction* (William Thompson and Kim Sorvig, 2000).

On Site Ecology

Brooks, Kenneth, Peter Ffolliott, Hans Gregersen & Leonard DeBano. *Hydrology & the Management of Watersheds* (Ames, IA: Iowa State Press, 1991).

Del Tredici, Peter. "Brave New Ecology: On the road to more sustainable urban landscapes, the natives-versus-exotics controversy, says one plant scientist, is a dead end" in *Landscape Architecture* (February 2006): 46-51.

Dramstad, Wenche E., James Olson & Richard T. T. Forman, *Landscape Ecology Principles in Landscape Architecture & Land-Use Planning* (Washington, D.C.: Island Press, 1996).

- Dunne, Thomas, and Luna Leopold. *Water in Environmental Planning* (San Francisco, CA: W.H. Freeman and Co., 1978)
- Dunster Julian & Katherine. *Dictionary of Natural Resource Management*. (Vancouver: UBC Press, 1996).
- Eyles, Nicholas. *Environmental Geology of Urban Areas* (Sudbury: Geological Association of Canada, 1997).
- Forman, Richard T. T. *Road Ecology: Science & Solutions* (Washington: Island Press, 2002).
- Forman, Richard T. T. & Michel Godron. *Landscape Ecology* (New York: John Wiley & Sons, 1986).
- Heathcote, Isabel. *Integrated Watershed Management Principles & Practice* (New York: John Wiley & Sons, 1998).
- Lynch, Kevin. *Site Planning* (Cambridge: MIT Press, 1962).
- On Earthmoving & Landforming
- Árpád Kézdi, *Handbook of Soil Mechanics - Volume 1: Soil Physics* (London, Elsevier, 1974).
- Capachi, Nick. *Excavation & Grading Handbook* (Solana Beach, CA: Craftsman Book Company, 1978).
- Center for Civil Engineering Research and Codes. *Building on Soft Soils: Design and construction of earth structures both on and into highly compressible subsoils of low bearing capacity* (Rotterdam: A.A. Balkema, 1996).
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- Haddock, Keith. *Earthmover: Encyclopedia* (St. Paul, MN: MBI, 2002).
- Hugget, Richard and Jo Chessman. *Topography & the Environment* (Essex: Pearson Education Limited, 2002).
- Hudson, Kari. "Earth-moving equipment gets guidance from above" in *American City & County* (March 1996).
- Schodek, Daniel L. *Structure in Sculpture* (Cambridge: MIT Press, 1993).
- Westort, Caroline Y. *Digital Earthmoving*. First International Symposium, DEM 2001, Manno – Switzerland (Berlin: Springer-Verlag, 2001): pp.4-17.
- Koski, Phillip Glenn. "Robo-Dozer: the fusion of global positioning system technology with heavy equipment sparks a revolution in construction site automation" in *Landscape Architecture Magazine* (July 2002): pp.50, 52-53.
- Nichols, Herbert L. Jr. and David A. Day. *Moving the Earth: The Workbook of Excavation*, (New York: McGraw-Hill, 1999).
- Orlemann, Eric C. *Super-Duty Earthmovers* (Osceola, WI: MBI, 2000).

Palossy, Laszlo, Peter Scharle and Istvan Salatkay. *Earth Walls* (West Sussex: Ellis Horwood, 1993).

Roe, Andrew G.. "Autodesk Land Desktop: Tools for site development and civil engineering" in *Cadalyst* (Aug, 2005).

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Trenter, N.A. *Earthworks: A Guide* (London: Thomas Telford, 2001).

Transportation Research Board. *Guide to Earthwork Construction - State of the Art Report 8* (Washington, D.C.: National Research Council 1990).

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Autodesk - AutoCAD Land Desktop: www.autodesk.com/landdesktop

On Bioengineering

Barker, David. H. *Ground and water bioengineering for erosion control and slope stabilization* (Washington: Science Publishers, 2004).

Coppin, N. J. *Use of Vegetation in Civil Engineering* (London: Butterworths, 1990)

Curacao, Salvatore. *Building on Water: Venice, Holland and the Construction of the European Landscape in Early Modern Times*. London: Berghahn Books, 2006).

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Gray, Donald H. & Robins B. Sootier. *Biotechnical and Soil Bioengineering Slope Stabilization : A Practical Guide for Erosion Control* (New York: Wiley, 1996).

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Ministry of Transport, Public Works & Water Management. *Nature Engineering and Civil Engineering Works* (Wageningen: Centre for Agricultural Publishing & Documentation, 1991).

Rijkswaterstaat. *Nature over Motorways* (Delft: Rijkswaterstaat, 1995).

Schiechtl, Hugo M. *Ground bioengineering techniques for slope protection and erosion control - Handbuch für naturnahen Erdbau* (London: Blackwell Science, 1996).

Seybert, Thomas A. *Stormwater Management for Land Development : Methods and Calculations for Quantity Control* (Hoboken, NJ: Wiley, 2006).

Stokes, A., Spanos, I., Norris, J.E. & Cammeraat, E. (eds.) *Eco- and Ground Bio-Engineering: The Use of Vegetation to Improve Slope Stability*. Proceedings of the First International Conference on Eco-Engineering 13-17 September 2004. (Developments in Plant and Soil Sciences Series, Vol. 103, 2007).

Erosion Control Magazine: www.erosioncontrol.com/ec.html

On Bioremediation

Brooks, R. R. *Plants that hyperaccumulate metals : their role in phytoremediation, microbiology, archaeology, mineral exploration, and phytomining* (CAB International, 1998).

Cookson, John T. *Bioremediation Engineering: Design & Application* (New York: McGraw-Hill, 1995).

Harte, John. *Toxics A to Z : a guide to everyday pollution hazards* (Berkeley: University of California Press, 1991).

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McCutcheon, Steve C. *Phytoremediation: Transformation and Control of Contaminants* (New York: Wiley, 2003).

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International In Situ and On-Site Bioremediation Symposium. *Phytoremediation, wetlands, and sediments*. (San Diego, CA: Battelle Press, 2001).

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International Journal of Phytoremediation: www.aehs.com/journals/phytoremediation

USGS Toxic Substances Hydrology Program: www.toxics.usgs.gov/index.html

On Site Reclamation

Cerver, Francisco A. *Civil Engineering: Nature Conservation and Land Reclamation* (Barcelona: Watson-Guptill, 1995).

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Hüttl, Reinhard F., Thomas Heinkele and Joe Wisniewski (eds.). *Minesite Recultivation* (Basel: Springer, 1996).

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Hestor, R.E. and Harrison, R.M. *Contaminated Land and Its Reclamation* (Cambridge, UK: Royal Society of Chemistry, 1997).

On Encapsulation

Caldwell, Jack A. and Charles C. Reith. *Principles & Practice of Waste Encapsulation* (Chelsea, MI: Lewis Publishers, 1993).

Dhir, Ravindra K., Moray D. Newlands & Tom D. Dyer. *Sustainable Waste Management* (London: Thomas Telford, 2003).

D'Itri, Frank & Lois Wolfson. *Rural Ground Water Contamination* (Chelsea, Michigan: Lewis Publishers, 1987).

Engler, Mira. *Designing America's Waste Landscapes* (Maryland: The John Hopkins University Press, 2004).

Miller, Benjamin. *Fat of the Land: Garbage in New York - The Last Two Hundred Years* (New York: Four Walls Eight Windows, 2000).

The Municipality of Metropolitan Toronto, SWEAP. *Site Selection Process: Materials Recovery Facility* (Ontario: Proctor & Redfern Ltd., 1990).



UNIVERSITY OF TORONTO
STUDENT MEDICAL CERTIFICATE

STUDENT NUMBER: _____

I TO BE COMPLETED BY STUDENT:

I, _____, hereby authorize this physician to provide the following information to the University Of Toronto and, if required, to supply additional information, relating to my petition for special academic consideration.

Signature Date

II TO BE COMPLETED BY PHYSICIAN

I hereby certify that I provided health care services to _____ a student at the University Of Toronto, on [Date(s)] _____. On the basis of that episode of care, I am providing the following information for use by the University in assessing what special consideration, if any, should be given to this student in respect of missed or affected classes, labs, assignments, tests or examinations.

1. Nature of health problem:

(If the student has not authorized you to disclose the nature of a problem of a highly personal or sensitive nature but has authorized the disclosure of all other pertinent information, please respond to the subsequent questions as fully as possible to enable complete consideration to be given to the student's petition).

2. Is this an acute or chronic problem for this student? _____

3. Date of onset of problem (or acute episode if problem is chronic): _____

4. Nature and timeline of the problem and its treatment

5. In your opinion, how did this problem and/or the treatment affect the student's ability to meet, or prevent the student from meeting, academic commitments such as attending classes, completing assignments, preparing for and/or writing tests and examinations.

VERIFICATION BY PHYSICIAN

SIGNATURE Name (Please Print)

REGISTRATION No. CPSCO

ADDRESS (stamp, business card or Letterhead acceptable) TELEPHONE# DATE

PLEASE RETAIN COPY FOR THE PATIENT'S CHART.
NOTE: Any cost for this certificate must be paid by the patient.