Purpose and Course Description

This half-semester (0.5 CU) course is organized in two modules. The first module “Technology, Operations, and Strategy” takes an organizational-level look at the different ways human and social capital are deployed by firms under varying strategies and different production paradigms. In addition, we look at past and current approaches to automation and the diverse rationales, transactional modes, and consequences of outsourcing, particularly of technical labor.

The second module “Technology and Managing People” examines how traditional practices of managing human and social capital are being transformed by new technologies that give managers new ways to enact control and new means to induce commitment, while also giving individuals with high levels of human capital (“talent”) new sources of leverage in negotiating the employment contract (in both economic and psychological terms) and new opportunities for inter-firm mobility and skill acquisition.

In the “Technology, Operations, and Strategy” module, we cover a succession of production/operations models and the different ways in which each combines technology and human/social capital to fulfill strategic goals and achieve varied performance outcomes. We also dig into the topic of automation and its consequences. First we will revisit the “automation scares” of the past and explore why upskilling and unexpected growth in new job categories often prevailed over the less-extensive-than-feared deskilling and job loss. Then we will consider current and future technological developments involving artificial intelligence and machine learning and why many believe “this time it’s different” – i.e., that automation will now eliminate a broad range of medium-to-high skilled “good jobs”. Next we will take a longitudinal look at outsourcing in global supply chains, comparing periods when outsourcing to distant low-wage countries accelerated with times when “nearshoring” or even “reshoring” has occurred.

While the automation that replaces jobs gains a lot of attention, an equally significant development is how new technologies affect the way human and social capital is managed. In the module on “Technology and Managing People”, we dig deeply into the powerful ways that the basic functions of HR systems have changed, including identifying and sorting candidates for employment, creating and filling jobs, monitoring work, setting goals and providing feedback, designing reward systems, developing skills, and managing teams with geographically distributed members. You will be encountering the consequences of these changes whenever you apply for jobs in the future and
certainly in every job you take – and hence should understand how these new systems function, how you can benefit from that understanding, and conversely what unintended consequences might result.

This course fits into the “Technology/Innovation/Analytics” category of Flex Fundamentals of the new undergraduate curriculum. The topics of this course are highly complementary to topics in other Wharton undergraduate courses in Legal Studies, Management, and OIDD but with little overlap. We hope to attract both students primarily studying organizational/HR topics who want to know more about technology and operations strategies as well as those primarily studying technology and operations who want to understand more about work and employment practices, and the impact on economic and social outcomes for individuals, firms, and societies.

**Prerequisites:** We anticipate that students will have taken the first-year required Wharton 101 (or its replacement) course before taking this elective. Taking the core MGMT 101 class, either before or together with this elective, will also be helpful in understanding how organizations function in their environment and the context within which firms make strategic decisions.

**Course Requirements**

Students will be evaluated on class participation (25%), two individual papers (60%), and a group assignment (15%). **Paper #1 is due, posted on Canvas, on Sunday April 5th at 11:59pm. Paper #2 is due, posted on Canvas, on Sunday May 3rd at 11:59pm.** Group assignments are due on different dates depending on the allocation of groups to class sessions.

**Class Participation (25% of your grade)**

This course requires a great deal of student involvement. Each class period will include intense discussion of the topics and issues at hand that will require students to be in-class and prepared. Students will be graded on the quality of their comments in class, not the quantity. Quality is judged based on your ability to add substantively to class discussions and your ability to link to others’ comments in the class or to advance the class discussion. I will occasionally call on students but will rely mostly on voluntary participation. Therefore, it is up to you to make sure your voice is heard.

One element of class participation will be helping me choose the topics for the two “In the News” classes (#7 and #14). Real-world events continue to provide rich examples of how the interrelationship between work and technology is evolving, i.e., in relation to new business strategies, changing employer and customer preferences, employee choices of how and where to work (and how/whether to adapt to certain workplace realities), technical breakthroughs and setbacks, changes in regulatory parameters, and political dynamics, both national and international. Early in each module, I will organize an online poll to assess student preferences from a list of current issues I will provide – and to get student suggestions of issues not on my list – and based on the outcome, I will select (and arrange access to) readings for the final session of that module.

**Individual Papers (60% of your grade)**

You will write two individual papers of 1250 words, one for each section of the course. Each is worth 30% of your final grade.
For the “Technology, Operations, and Strategy” part of the course, you will address a debate surrounding one of four topics. On all topics, you will be evaluated on how well you make your argument and how well you support your argument with evidence.

1. Considering mass, lean, and agile production, are all three viable production models that fit different sectors of the economy or different strategies, or is one of these production models the best suited to current business requirements across a wide range of sectors?
2. What are the pros and cons of the “gig economy”, for businesses with tasks to be done, for workers taking “gig” jobs, and for society in terms of human capital development, public health, providing for retirement, etc?
3. Which of the arguments about the short-term future impact of automation (particularly those based on robotics and artificial intelligence) on employment/skill levels and job types do you find most convincing? Those who look to history to say that new jobs will be created to replace those lost to automation or those who argue that this time is different and widespread job loss is on the horizon?
4. Outsourcing has been enabled both by strategic decisions about which activities are “core” to the firm’s strategy vs. which are not and by technology that facilitates working over distance. Do you anticipate that upcoming technological developments involving cloud computing, robotics, artificial intelligence will increase or decrease the amount and type of outsourcing carried out by firms in developed countries, e.g. US, Europe, Japan.

For the “Technology and Managing People” part of the course, you will explore one particular facet of how technological change has affected the organizational function of managing human and social capital, i.e. selection and hiring; training; performance management; and then forecast how those changes will affect you in the first job and in your short-term and long-term career. The specific focus of your topic needs to be approved by the instructor.

**Group Assignment (15% of your grade)**

Your small group assignment is to write a 3 -5 page double-spaced paper regarding the readings and case for that particular class session. **Please post your paper on Canvas by 5 pm the day before the assigned class.**

For this paper, I want you to dig into the readings: What intrigues you? What’s thought-provoking? What’s important? What don’t you quite buy, if anything? What issues do you think the class should grapple with? I’m looking for thoughtful commentary that reflects your group’s discussions of the assigned material – not a divide-and-conquer division of labor that simply summarizes it.

**I will use Canvas to form randomly-assigned groups.** Group information and the schedule of team assignments will be available after the class list stabilizes. Group size will depend on the course enrollment.

Here are more suggestions about the group paper:

- Do demonstrate your in-depth analysis and discussion of the assigned readings and case.
  - What did you find most thought-provoking and valuable? Why?
◦ How do the readings apply to and illuminate the case, and vice-versa?
◦ What aspects of the case or readings generated debate in your team? Why?
◦ How do the readings and case relate to your own experiences as a team?
◦ How can and should business leaders – or current business students – put the ideas and insights you read about into practice to enhance effectiveness?
◦ What questions do you think we should discuss in class? Why?

 › Do be personal, thoughtful, and analytical. Do use the word “we.”
 › Do suggest video clips, photos, recent media stories, and other resources (excerpts from books/plays/poems/songs) of relevance; feel free to be creative.
 › Don’t summarize the readings. The intention is thoughtful commentary on the materials, not a traditional summary and analysis.

Required Readings
All course materials are available on Study.Net; for assistance, check with Wharton Reprographics. These readings include short articles from professional and academic journals, chapters from books, and case studies. Powerpoint slides and other course materials will be posted on the courseware site Canvas. You can access Study.Net through the Canvas site.

Courseware
We will use Canvas for courseware support. The syllabus, course handouts and assignments will be posted there. You will turn in most assignments (individual and team) by uploading your papers to Canvas, and I will return grades and comments to you electronically. Sign-up for team activities will happen through Canvas as well. Finally, I will post relevant articles or web links that come to my attention during the course, and I encourage you to do the same.

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MANAGEMENT 243: WORK AND TECHNOLOGY
COURSE OUTLINE
(NB: Readings listed are illustrative; the final syllabus for the 2020 course will have updated readings for most sessions)

MODULE 1: Technology, Operations, and Strategy

Tuesday, March 17
Session 1: Taylorism and Work Optimization
Modern forms of Taylorism; motivational assumptions; precursor to automation

Readings:

Thursday, March 19
Session 2: Mass vs. Lean vs. Agile Production
Differences in production logic ("push" vs. "pull"); productivity, quality, high product variety as tradeoffs or correlated outcomes; batch size and cycle times; priority given to flexibility and speed) and how those affect human capital strategy/practices

Readings:

Tuesday, March 24
Session 3: Contract Work, Brokers, and the "Gig Economy"
How commonplace features of the workplace in the early industrial past are turning up again in modern, technology-facilitated form. E.g., Piecework ==> Mechanical Turk; "Putting Out" System ==> Gig Economy. How modern labor contracting modes are evolving, e.g. from technical contractors to "supertemps", from Task Rabbit to Uber/Lyft/Instacart.
Readings:

Thursday, March 26
Session 4: Automation and Employment: Looking Back
The original Luddites and their successors; past automation scares; upskilling vs. deskillings debates in different historical eras.

Readings:

Tuesday, March 31
Session 5: Automation and Employment: Looking Forward
“This time it's different”: artificial intelligence (AI) & machine learning. To what extent are these new means of automation able to capture (and hence replace) more of what has been distinctively and idiosyncratically linked to human skill. How might the emotional experience of customers/users receiving a service change when dealing with a technical interface rather than another human being? And what about emotional intelligence as a vital component of the human capabilities needed to accomplish various tasks? To what extent can that be captured by AI?

Readings:

Thursday, April 2
Session 6: Outsourcing: Past, Present, and Future
Strategies of vertical integration/disintegration; impact of digital tech and the Cloud
Readings:

*** Paper #1 Due at 11:59pm on Sunday April 5, posted on Canvas ***

Tuesday, April 7
Session 7: “In the News” Issues re: Technology, Operations, and Strategy
Topic to be identified and chosen (via student consultation and polling) after the first two sessions of this module. Readings will be selected and added to Study.Net by the instructor after the topic is chosen.

**MODULE 2: Technology and Managing People**

Thursday, April 9
Session 8: Hiring: Online Job Search and Passive Candidates
How hiring works (search and matching); How technology alters this process e.g. LinkedIn

Readings:

Tuesday, April 14
Session 9: Hiring: Algorithmic Filtering and Background Checks
Best practices from research in screening applicants; pros and cons of black-box algorithms

Readings:

Thursday, April 16
Session 10: Flexible Schedules and Micro-Monitoring
Coercion from new management methods. How “morning bias” and unpredictable changes undermine advantages of flex schedules; how tech-enabled keystroke monitoring and process control undermine the autonomy and outcome control premises of contract work

Readings:

Tuesday, April 21
Session 11: When “Buy” Replaces “Make” for Skills
Dilemmas of skill development and motivation when firms prefer to “buy” talent rather than “making” skills. Different ways that technology changes skill requirements and enables new forms of learning. Strategic implications of human capital mobility.

Readings:

Thursday, April 23
Session 12: Looking Forward Via Feedback: The Move to Reform Performance Appraisal
The revolt against performance evaluation – a flawed system that everyone dislikes. The pendulum swing between development and allocative appraisal. Technology-enabled forward-looking feedback replacing backward-looking appraisal of metrics achieved.

Readings:
3. Case: Naukri -- Three Retention Dilemmas

Tuesday, April 28
Session 13: Geographically Distributed Teams and Remote Work
How geographic distance affects teams. (Who’s on the team?) Challenges of managing remote workers. How firms attempt to mitigate the negative consequences of distance.

Readings:

Thursday, April 30
Session 14: “In the News” Issues re: Technology and Managing People
Topic to be identified and chosen (via student consultation and polling) after the first two sessions of this module. Readings will be selected and added to Study.Net by the instructor after the topic is chosen.

*** Paper #2 Due at 11:59pm on Sunday May 3, posted on Canvas ***